



McLuhan Galaxy Conference
Understanding Media, Today

Barcelona, May, 23rd-25th

CONFERENCE PROCEEDINGS

Edited by Matteo Ciastellardi, Cristina Miranda de Almeida, Carlos A. Scolari

McLuhan Galaxy Conference

Understanding Media, Today

Conference Proceedings



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Carlos A. Scolari

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To access by laptop, go to the website: <http://www.mcluhangalaxy.net/extended>

Foreword

Derrick de Kerckhove (IN3/UOC)

It is wonderful to see how, the world over, the life and works of Herbert Marshall McLuhan are being celebrated 100 years after his birth on July 21st, 1911.

McLuhan was so much ahead of his time, that after a brief but enviable fame, he was forgotten even during the last ten years of his life. He died December 31st, 1980, and a few conferences were dedicated to him, mostly in Italy, and fewer in Canada. And yet, in July 1986, the Times Literary Supplement actually declared that, for a short while, Toronto, thanks to him and the School of Toronto (Harold Innis, Eric Havelock, McLuhan and his followers, many of whom are in the proceedings of this conference), became the intellectual centre of the world.

It took the world almost 50 years to catch up with his extraordinary predicting abilities and verify the following two sentences from the first version of *Understanding Media* (1962):

The next medium, whatever it is (1) it may be the extension of consciousness (2) will include television as it's content, not as its environment, and (3) will transform television into an art form. A computer as (4) a research and communication instrument could (5) enhance retrieval, (6) obsolesce mass library organization, (7) retrieve the individual's encyclopedic function and flip into (8) a private line to (9) speedily tailored data of (10) a saleable kind.

McLuhan was 50 years ahead of OUR time. Now it is our turn.

Foreword

Carlos A. Scolari (UPF)

"We look at the present through a rear-view mirror. We march backwards into the future."

What can we say about Marshall McLuhan that hasn't already been said before? That he was one of the most creative intellectuals of 20th Century? That his ideas and theoretical contributions are basic for understanding the new media ecology? That he was an icon of the 1960s popular culture? How can we expand his visions? One thing is clear: McLuhan's innovative approach to communication and cultural processes should be part of the basic kit of any media scholar. Or in other words: to understand new media we must start reading McLuhan's *Understanding Media* (1964).

"The specialist is one who never makes small mistakes while moving toward the grand fallacy."

McLuhan is not alone. He's part of a network known as the School of Toronto (Harold Innis, Eric Havelock, Derrick de Kerckhove, Eric McLuhan, Robert K. Logan). One of Harold Innis' original conceptions ulteriorly developed by McLuhan – "media as environments" – was the first step towards an already consolidated scientific field: the Media Ecology. But Media Ecology is more than McLuhanism. According to Lance Strate its roots can be traced to the studies produced by researchers like Lewis Mumford, Jacques Ellul, Walter Ong, Jack Goody, Elizabeth Eisenstein, Edward T. Hall, Edmund Carpenter, James Carey and Neil Postman. McLuhan, let's remember it, is not alone.

"You mean my whole fallacy's wrong?"

The main objective of McLuhan Galaxy Barcelona 2011 International Conference is to recover McLuhan's ideas and to confront them with contemporary media ecosystem. More than a hundred scholars from different countries –from Argentina to Estonia, from South Africa to Turkey, from Canada to Italy- will meet in Barcelona to discuss and developed an actualized view of Marshall McLuhan's contributions to the study of communication in 21st Century.

"Food for the mind is like food for the body: the inputs are never the same as the outputs."

Welcome to Barcelona!

General Framework of the Conference

Matteo Ciastellardi, Carlos A. Scolari and Cristina Miranda de Almeida

Marshall McLuhan (1911-1980) is internationally considered as one of the most relevant media thinkers of 20th Century. Together with researchers like Harold Innis, Derrick de Kerckhove, Eric McLuhan and Robert Logan the scientific contributions of the School of Toronto are a reference for media and culture researchers around the world.

The explosion of new interactive media, the convergence between old and new media and the development of innovative communication practices in the last two decades have demonstrated the strength of the School of Toronto's approach. The McLuhan's perspective –a 360° conception of media that integrates subjective and social dimensions- is a real alternative to a hyper-specialized and fragmented media research practice to better understand the paradigms of our contemporary information society.

In this context the project will revive McLuhan's ideas a hundred years after his birth (1911-2011) and confront them with the contemporary media ecosystem, addressing specific issues to highlight the actual contributions of the Canadian thinker to an academic environment and to a wider public. The aim is, on the one hand, to bring together researchers, scholars and McLuhan Fellows to reflect on different aspects of McLuhan's contribution. On the other hand, we would like to disseminate and promote different aspects of his updated contribution. The conference in Barcelona is networked to a series of conferences –each one with a different and complementary character- that are going to take place in Toronto, Berlin, Naples, Poland and Rome.

In order to make the most of this an excellent opportunity not only to review McLuhan's contributions but also to update them in relation to our contemporary society of knowledge,

The Faculty of Communication, Universitat Pompeu Fabra and Internet Interdisciplinary Institute (IN3), Universitat Oberta de Catalunya / Open University of Catalonia, and the CCCB-Lab, Centre of Contemporary Culture of Barcelona, agreed to collaborate in this joint-venture project to organise the International Conference *McLuhan Galaxy Barcelona 2011 "Understanding Media, Today"*, in Barcelona 2011, May 23rd-25th.

The programme is structured into thematic areas or topics. The five topics were inspired on one or more of McLuhan's quotes relating the subject. Around these topics, keynote conferences, round tables presentations and parallel sessions and activities are organized.

The five main topics that structure the conference are:

Topic 1: McLuhan in the global village

"To be a good prophet never predict anything that has not already happened"

Content/keywords: McLuhan, Toronto's School, Media Ecology, media laws, media studies, McLuhanism.

Topic 2: Education beyond the book

"What is indicated for the new learning procedures is not the absorption of classified and fragmented data, but pattern recognition (...) We seem to be approaching the age when we shall program the environment instead of the curriculum"

"The business of school is no longer instruction but discovery"

Content/keywords: School/media, digital natives, digital literacy, the Gutenberg parentheses, edupunk, invisible learning.

Topic 3: Social Media, networks and life

"The user is the content"

"The more they know about you the less you exist"

"This has become the main business of mankind, just watching the other guy (and) invading privacy. Everybody has become porous"

Content/keywords: Self-organization, emergence, social media, collaborative web, user generated content, tagging, folksonomy, identity, privacy, control.

Topic 4: Extension and sensorial dimension

"In the electronic age we wear all mankind as our skin"

Content/keywords: Extensions, new sensorial paradigms, human computer interaction, interfaces, new screens, mobile media, ubiquitous computing, data-visualization.

Topic 5: The global Big-bang

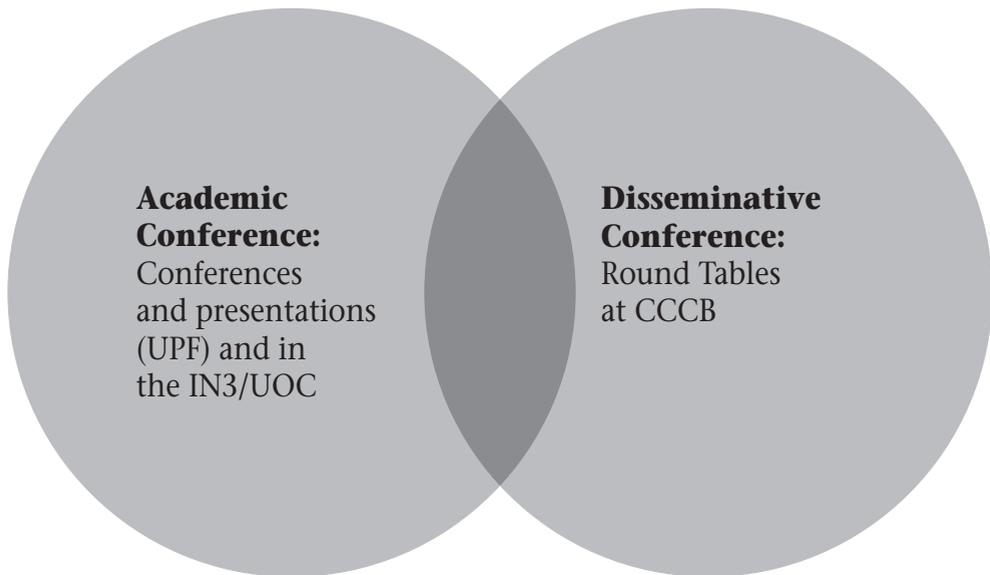
"Inflation is money having an identity crisis"

"In the electronic age (...) you can't have jobs; you can only have roles"

Content/keywords: Economy, ecology, management, wikinomics, "long tail", local, global, glocal dimensions.

The conference treats these topics in two different complementary ways, one academic

and the other informative/disseminative (focusing on knowledge-transfer to society). In order to treat the subjects in these two ways the conference is held in two different venues. In relation to the academic conference the venues are in the Campus of Communication (UPF) and in the IN3/UOC's Mediatic building, both in the 22@ Barcelona, Innovation District. The informative/disseminative objective will be achieved by the organization of Round Tables in the CCCB. The activities developed in the latter are free, open to public and count on simultaneous translation available.



a) Academic conference (UPF and IN3/UOC venues)

In the morning and afternoon sessions researchers, Ph.D. candidates and students participate in a high-level international scientific meeting to discuss and develop an actualized view of Marshall McLuhan's and the School of Toronto's contributions to new media research. The academic conference includes keynote sessions, parallel sessions for discussion groups (based on the participants' papers) and a Round Table for a scientific audience.

b) Informative-disseminative round tables and parallel activities (CCCB venue)

In the evening there are two Round Tables in the Centre de Cultura Contemporània de Barcelona (CCCB), one on Tuesday and the other on Wednesday. Prestigious international speakers –invited to the academic conference in the UPF- address these issues and for a broader audience.

McLuhan Galaxy Conference's Credits

The organizers of the McLuhan Galaxy Conference would like to thank very much all institutional partners, co-funders, participants, speakers, peer reviewers, presenters and management collaborators for their time, effort, interest, generosity and support that made the event possible. Without the support of this McLuhan Galaxy network of contributors and friends we could not have explored the immense intellectual weight of this author, under a new light, in the way we are doing. We trust that the result of this event is useful to help society to deal with the global and local scales of our contemporary condition.

Organizers

- IN3 (Internet Interdisciplinary Institute) – UOC (Universitat Oberta de Catalunya)
- Facultat de Comunicació – UPF (Universitat Pompeu Fabra)
- CCCB (Centre de Cultura Contemporània de Barcelona)

Co-funding

- IN3 (Internet Interdisciplinary Institute) – UOC (Universitat Oberta de Catalunya)
- Departament de Comunicació / Facultat de Comunicació - UPF (Universitat Pompeu Fabra)
- Ministerio de Ciencia e Innovación, Secretaría de Estado de Investigación, Dirección General de Investigación y Gestión del plan Nacional de I+D+i, Convocatoria 2010
- Embassy of Canada in Madrid

Scientific Committee

- Josep M. Casasús, Manuel Castells, Matteo Ciastellardi, Derrick de Kerckhove, Javier Díaz Noci, Jose Fernández Cavia, Juan C. Insua Sigeroff, Cristina Miranda de Almeida, Miquel Rodrigo Alsina, Carlos A. Scolari, Imma Tubella.

UPF and IN3/ UOC Board Committee

- Carlos A. Scolari (UPF), Derrick de Kerckhove, Matteo Ciastellardi, Cristina Miranda de Almeida (IN3/UOC and UPV/EHU).

CCCB-Lab Board Committee

- Juan C. Insua Sigeroff, Director CCCBLab; Maria Farrás, CCCBLab// I+C+i.

Institutional Conference Partners

- 22@Network, Barcelona, España,
- Comisión del Mercado de las Telecomunicaciones, Barcelona, España
- Centro de Estudios de la Identidad Colectiva CEIC, UPV/EHU, España
- Facultad de Bellas Artes, UPV/EHU, España
- Grup de Recerca d'Interaccions Digitals (GRID), Universitat de Vic, España
- Laboratori de Mitjans Interactius, Universitat de Barcelona, España
- Loughborough University, United Kingdom
- McLuhan's Centenary Committee, University of Toronto, Canada
- McLuhan Program in Culture and Technology, Toronto, Canada
- Nuova Accademia di Belle Arti, NABA, Milano, Italia
- Politecnico di Milano, Italia
- Revista *Leer*, Madrid, España
- Strategic Innovation Lab / Ontario College of Art and Design, Toronto, Canada
- Tallinn University, Estonia
- Unitat d'Investigació en Comunicació Audiovisual (UNICA), UPF, España
- Universidade Federal do Rio de Janeiro, Brazil
- University of Applied Arts Vienna, Austria
- University of Applied Sciences of Southern Switzerland (SUPSI), Switzerland
- Università degli Studi di Milano, Italia
- Università degli Studi di Torino, Italia
- University of Toronto, Canada

Opening Ceremony Participants

- Josep Joan Moreso (Rector Universitat Pompeu Fabra)
- Imma Tubella (Rector Universitat Oberta de Catalunya)
- Robert K. Logan (McLuhan Centenary Celebration Committee / University of Toronto)
- Juan C. Insua Sigeroff (CCCB)

Keynote Speakers

- Manuel Castells (IN3/UOC)
- Ursula Heise (Stanford University)

- Derrick de Kerckhove (IN3/UOC and University of Toronto)
- Robert K. Logan (University of Toronto)
- Javier Díaz Noci (UPF)
- Dominique Scheffel-Dunand (University of Toronto)
- Carlos A. Scolari (UPF)

Round Table Chairs and Speakers

- Elisenda Ardèvol (IN3/UOC)
- Matteo Ciastellardi (IN3/UOC)
- Octavio Islas (Instituto Tecnológico de Monterrey, México DF)
- Stephen Kovats (Transmediale Berlin)
- Charo Lacalle (Universitat Autònoma de Barcelona)
- Graham Larkin (National Gallery of Canada)
- Janine Marchessault (York University)
- Cristina Miranda de Almeida (IN3/UOC)
- Alejandro Piscitelli (Universidad de Buenos Aires)
- Bruce William Powe (York University)
- Eva Pujadas (UPF)
- Vincenzo Susca (U. Paul Valéry and Researcher CEAQ, Sorbonne)

Special Proposals in CCCB and in Video Wall Project **<http://www.mcluhangalaxy.net/mcmovie>**

- Kaarle Nordenstreng, University of Tampere, Finland (McLuhan 1967 Interviews on MP3)
- Jamie O'Neal, Associate Professor, Director, Digital Media Arts, Canisius College, Buffalo, NY USA (McLuhan Remix Project, Video Essay)

Parallel Session Chairs

- Matteo Andreozzi (Università degli Studi di Milano)
- Matteo Ciastellardi (IN3/UOC)
- Derrick de Kerckhove (IN3/UOC):
- Irene García Medina (Universitat de Vic)
- Indrek Ibrus (Tallin University)
- Manel Jiménez (UPF)
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- Anais Le Corvec (Universitat de Barcelona)
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- Derrick de Kerckhove (IN3/UOC)
- Javier Díaz Noci (UPF)
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- Manuel Garin (UPF)
- Indrek Ibrus (Tallinn University)
- Manel Jimenez (UPF)
- Anaïs Le Corvec (Universitat de Barcelona)
- Cristina Miranda de Almeida (IN3/UOC)
- Carlos Nobrega (University Federal do Rio de Janeiro)
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- Sarah Pink (Loughborough University)
- Mario Pireddu (Università of Roma)
- Marco Quaggiotto (Politecnico di Milano)
- Barbara Rauch (Ontario College of Art and Design)
- Mon Rodríguez (Universitat de Vic)
- Elsa Santamaria López (Universitat Oberta de Catalunya and CEIC)
- Dominique Scheffel-Dunnand (University of Toronto)
- Vincenzo Susca (Université Paris Descartes, Sorbonne)
- David Trefas (University Library of Basel)
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- Cilia Willem (Universitat de Barcelona)

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Related Links

- McLuhan Galaxy Website: <http://www.mcluhangalaxy.net>
- McLuhan "Walls": <http://www.mcluhangalaxy.net/mcmovie>
- McLuhan Electronic Margin: <http://www.mcluhangalaxy.net/extended/>

Short Curricula

Keynote speakers and round table participants (alphabetical order)

3.1 Keynote Speakers' curricula

Manuel Castells (UOC/IN3)



Manuel Castells is Professor of Sociology, and Director of the Internet Interdisciplinary Institute at the Open University of Catalonia (UOC), in Barcelona. He is as well University Professor and the Wallis Annenberg Chair Professor of Communication Technology and Society at the Annenberg School of Communication, University of Southern California, Los Angeles. He is Professor Emeritus of Sociology, and Professor Emeritus of City and Regional Planning at the University of California, Berkeley, where he taught for 24 years. He was Assistant Professor of Sociology at the University of Paris, Associate Professor of Sociology at the School for Advanced Studies in Social Sciences, University of Paris (1967-1979), Professor and Director of the Institute of Sociology of New Technologies at the Autonomous University of Madrid (1988-1993), Research Professor on the Higher Council for Scientific Research (CSIC) in Barcelona (1997) and Professor of Sociology and of City and Regional Planning at the University of California, Berkeley (1979-2003). He has received Honorary Doctorates from 15 universities in Europe, North America, Latin America, and Asia as well as several honorary professorships and university medals. He has authored 23 books, including the trilogy "The Information Age: Economy, Society, and Culture" (1996-2003), published by Blackwell and translated in 23 languages. He has also co-authored and edited additional 22 books.

Derrick de Kerckhove (University of Toronto - IN3/UOC)



Derrick de Kerckhove has been Director of the McLuhan Program in Culture & Technology and Professor in the Department of French at the University of Toronto. He was an associate of the Centre for Culture and Technology from 1972 to 1980 and worked with Marshall McLuhan for over ten years as translator, assistant and co-author. He edited "Understanding 1984 (UNESCO, 1984) and co-edited with Amilcare Iannucci "McLuhan e la metamorfosi dell'uomo" (Bulzoni, 1984). "The Skin of Culture" (Somerville Press, 1995) is a collection of essays on the new electronic reality, which stayed on Canadian best-sellers lists for several months.

“Connected Intelligence” (Somerville, 1997) introduced his research on new media and cognition. His latest book, “The Architecture of Intelligence”, was first issued in Dutch in December 2000, and in English, Italian and German in 2001.

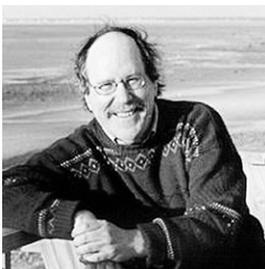
Ursula Heise (Stanford University)



Ursula Heise is the Director of the Program in Modern Thought & Literature; Professor of English; Ph.D. English, Stanford University, 1993; M.A., Romance Philology, University of Cologne/Germany, 1987 M.A., English, UC Santa Barbara, 1985. She specialized in contemporary American and European literature and literary theory; her major fields of interest are theories of modernization, postmodernization and globalization, ecology and ecocriticism, literature and science, narrative theory, science fiction, and media theory. Her publications include articles on contemporary authors from the US, Latin America and Western Europe. She is the author

of a book on the postmodern novel, *Chronoschisms: Time, Narrative, Postmodernism* (Cambridge University Press, 1997) and, more recently, a book on environmentalism, ecocriticism, and globalization, *Sense of Place and Sense of Planet: The Environmental Imagination of the Global* (Oxford University Press, 2008). She is currently working on two book projects. *Nach der Natur: Das Artensterben und die moderne Kultur* [After Nature: Species Extinction and Modern Culture] is forthcoming from the German publisher Suhrkamp in Spring 2010. *The Avantgarde and the Forms of Nature*, currently in progress, deals with the role of biological form in works of the European, Latin American and North American avantgardes of the twentieth century.

Paul Levinson (Fordham University)



Paul Levinson is an American author and professor of communications and media studies at Fordham University in New York City. Levinson’s novels, short fiction, and non-fiction works have been translated into twelve languages.

He previously taught at The New School, Fairleigh Dickinson University, Hofstra University, St. John’s University, Polytechnic University of New York, Audrey Cohen College and the Western Behavioral Sciences Institute (WBSI). He has given lectures in classes and conferences at many universities including the London School of Economics, Harvard University, New York University, and the University of Toronto and authored over 100 scholarly articles.

Levinson’s work is influenced by Isaac Asimov, Thomas Jefferson, John Stuart Mill, Marshall McLuhan, Harold Innis, Karl Popper, Carl Sagan, and Donald T. Campbell.

Robert K. Logan (University of Toronto – sLab/OCAD)

Originally trained as a Physic, Robert K. Logan is a well-known media ecologist. He received a BS and PhD from MIT in 1961 and 1965. After two post-doctoral appointments at University of Illinois (1965-7) and University of Toronto (1967-8) he became a physics professor in 1968 at the University of Toronto (professor emeritus since 2005). Best known works are *The Alphabet Effect* based on a paper co-authored with McLuhan, “*The Sixth Language: Learning a Living in the Internet Age*” and “*The Extended Mind: The Emergence of Language, the Human Mind and Culture*”. Robert Logan is now the Chief Scientist of the Strategic Innovation Lab at the Ontario College of Art and Design (OCAD, Toronto).

Javier Díaz Noci (UPF)

Javier Díaz Noci is a Doctor in History, Master in Law and has a Degree in Communication (Journalism). He worked as a journalist in several Spanish media, including Radio Nacional de España. He taught in the Universidad del País Vasco (1994-2008), and is currently teaching at the Universitat Pompeu of Barcelona, where he also coordinates the activities of Cibermedia, a journalism research group. He’s been Visiting Fellow at the Oxford University (1998-1999) and Visiting scholar at the Universities of Reno (USA) (1997), Università degli Studi di Bologna (Italy) (1997), Universidade Federal da Bahia (Brazil) (2005 and 2008). He has led several research groups and a network Brazil-Spain that conducts a comparative study of online daily journals. He has participated in the European research network COST A20.

Dominique Scheffel-Dunand (U of T and York University)

Dominique Scheffel-Dunand has a Ph.D. in Linguistics from Lyon (France) and is a LLM candidate at Osgoode Hall Law School in Toronto. She is an Associate Professor in the Department of French Studies at York University. Her fields of research in linguistics are Language Ecology (Relationship between language, landscape and worldviews); Discourse and Conversation analysis; Pragmatics and Cross-cultural communication; Second language acquisition and Computer-supported cooperative work (CSCW). Other areas of study include semiotics and the important role of voice in public speeches: radio and television broadcasting, business communication, advertising, political and legal discourse.

Her current work in Law is related to the laws of media and freedom of expression. Her research aims at assessing the impact of media on cultural and language policies in politi-

cal environments of cultural diversity. Her research entails the development of an interactive database of the written and unwritten constitution in Canada on language rights. The study will offer a real time visualization of discourse on the politics of the Canadian model in constitutional theory. She is conducting her studies in legal discourses and sociolinguistics as a Research Associate at CURL (Collaborative Urban Research Laboratory at Osgoode Hall Law School) and as a Research Associate at the Centre for Research on Language Contact (Glendon College, York University).

At the University of Toronto she is currently the Director of the McLuhan Program in Culture and Technology and has been involved for more than ten years in the Knowledge Media Design Institute as a member of the Steering Committee and since 2007 as a Research Fellow.

She is a consultant in North America and Europe in cross-cultural communication and knowledge management. Consulting work, research and managerial positions at the University of Toronto and York University in Canada engaged her in exploring the nature and dynamics of human and non-human communication and the various media and technologies that enhance the understanding of information practice and knowledge building. She believes that only this understanding will lead to the recognition of the possibilities afforded by new configurations of perception.

Carlos Alberto Scolari (UPF)



Carlos A. Scolari is professor at the Universitat Pompeu Fabra (Barcelona). He has a Ph.D. in Applied Linguistics and Communication Languages from the Università Cattolica di Milano and a Degree in Social Communication from the Universidad Nacional de Rosario (Argentina). He's been Vice Dean of the Faculty of Business and Communication, Co-ordinator of the Master in Interactive Digital Communication and Director of the Digital Interactions Research Group at the Universitat de Vic (Spain). Between 2003-2006 he co-ordinated the Red Iberoamericana de Comunicación Digital (ALFA Programme). He organised seminars and workshops about semiotics of digital interactions, media ecology and interaction design in different European and Latin American universities and institutions. His best-known works are "Hipermediaciones. Elementos para una Teoría de la Comunicación Digital Interactiva" y "Hacer clic. Hacia una sociosemiótica de las interacciones digitales".

3.2 Round Table participants' curriculums

Elizenda Ardevol (IN3/UOC)

Elizenda Ardevol has academic training in social and cultural anthropology and at present is professor lecturer at the Humanities Department at the Open University of Catalonia (UOC), where she also collaborate as a professor at the Interdisciplinary PhD. Program on Information and Knowledge Society.

PhD. by the Autonomous University of Barcelona (UAB), she carried out a doctoral dissertation about Visual Anthropology and Ethnographic cinema: The Anthropological gaze or the Anthropology of the gaze; an analysis of the audiovisual representation of cultures and an exploration in the use of the audiovisual image in Ethnographic research.

During her career, she taught courses and seminars in different Spanish universities and cultural institutions, and I also have been Visiting Scholar of the Centre for Visual Anthropology, at the University of Southern California, Los Angeles. Currently, she collaborates in the Master of Creative Documentary at the UAB, and participated as voting member in various Cinema Festivals and as member of the Scientific Committee in several academic conferences.

She carried out fieldwork among the gypsy community of Granada, in Afro-American communities of Los Angeles, and in the Courts of Justice of Barcelona. Currently she is doing research about the Internet, new media, online sociability and Cyberculture. As other related activities, she belongs to the Research Group of Sociojuridical Studies (Gres, UAB) and has been a researcher member in the Interdisciplinary Research Group in Virtual Communities (GIRCOM, UOC). Today she is working with different researchers trying to develop a research line to interweave two main fields: media anthropology and science, technology and society.



Matteo Ciastellardi (IN3/UOC)

Currently a Researcher at the IN3/UOC and former Senior Research Fellow (2010) in the Research Line Digital Culture. Ph.D. (Politecnico of Milano, Department of Industrial Design and Multimedia Communication) with a thesis titled "Bottom-up management of online information". Since 2009 he is in charge of the course "New languages in information science" as adjunct professor at Università Statale of Milano.

Research fellow linked to REPLICA (*Reti Evolute Per L'Interazione e la Comunicazione Aziendale* – advanced networks for company's interaction and communication) in 2007 to promote the transmission of knowledge from academic to working environment and viceversa. Research fellowship (2008) in the project NERV (*Neural Environment for Recombinant Visualization*) that aims to design new kinds of visual interfaces for data management in complex environments.

His research topics are mainly founded on the web's information topography and on design



strategies for social media to manage bottom-up information, with particular emphasis on practices and tools to share knowledge.

Last Publications: *Design, Knowledge and Augmented Realities* (with A. Cruciani, C. M. de Almeida, D. de Kerckhove) 2009; *Le architetture liquide. Il pensiero in rete e le reti del pensiero*, 2009; *The space between. Designing bottom-up knowledge in an interconnected society*, (with A. Cruciani, C. M. de Almeida, D. de Kerckhove), 2009; *Hybrid ontologies*, 2008 among other publications.

Octavio Islas (Universidad de Monterrey Mexico)

Doctorate in Social Sciences (Universidad La Salle); Sociology (Universidad Autónoma Metropolitana). Master in Communication and Development (Universidad Iberoamericana). Master in Administration of Technologies of Information (Instituto Tecnológico y de Estudios Superiores de Monterrey). Seminar in E-business (University of Montana).

Conaculta /AMIC National Prize of Research on Television: “En la ruta que condujo a Televisa hacia la HDTV”.

Project Internet (Tecnológico de Monterrey, Campus Estado de México) National Award AMCO (1998) Asociación Mexicana de Comunicadores Organizacionales (AMCO). Prize extended in 1999.

Since 2003, director of the Cátedra de Comunicación Estratégica y Cibercultura del Tecnológico de Monterrey, Campus Estado de México.

Founder member (2005) of Foundation Development Gateway Mexico (ONU). Advisor and expert in the Iberoamerican Conference of Cinema and Audiovisual Authorities. Venezuela (2005). Member of Media Ecology Association (MEA), USA.



Stephen Kovats (Transmediale Berlin)

Canadian born media researcher and architect Stephen Kovats is artistic director of transmediale, Berlin's festival for art and digital culture. Previously he was chief program curator at V2_Institute for the Unstable Media, Rotterdam and initiator of the Electronic Media Interpretation Studio at the Bauhaus Dessau Foundation. Through these organisations and independently he has applied his interest in the dynamic relationships between media, political, and electronic space in projects, conferences and festivals which aimed at strengthening the role of art and technology upon the active transformation of societal and cultural landscapes.

In the 90's he initiated and directed 'ostranenie - the international electronic media forum' at the Bauhaus Dessau which examined the role of media art and broadcast culture within the transformation process in Eastern and Central Europe. Other major projects included a yearly series of Central European Media Art Picnics, the Archi-Tonomy workshops and the biannual 'DEAF' festival in Rotterdam.



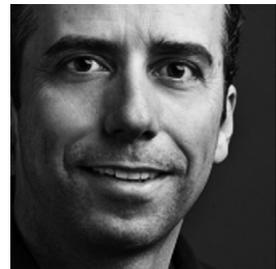
Charo Lacalle (UAB)

Professor at the Facultat de Ciències de la Comunicació, Universitat Autònoma de Barcelona. Phd in Sciences of Communication (UAB); Postgraduation (University of Bologna, Italia). Member of Eurofiction, International Observatory of European Fiction (Spain, France, Italy England and Germany) to study National production of series. Member of the Research Project Alfa/Educom, funded by the European Commission in the cooperation framework with Latin America, together with the Universitat Autònoma de Barcelona, French, Portuguese, Brazilian and Argentinian Universities. She has taught courses in analysis of television in different universities.

**Graham Larkin (National Gallery of Canada)**

Graham Larkin is Curator of International Art at the National Gallery of Canada in Ottawa, down the street from the McLuhan Fonds at the national archives.

While attending Harvard University he organized a conference on the materiality of print in early modern Europe, translated a book on garden designer André Le Nôtre, assisted information designer Edward R. Tufte with his book *Beautiful Evidence*, and completed a doctoral dissertation on the origins of the catalogue raisonné in early print albums. As a postdoctoral fellow at Stanford University he battled for academic freedom and taught classes in the histories of collecting, print and landscape representation. In Ottawa he has reinstalled the national collection of European and American Art, expanded his department to include art of the 20th century, and greatly enhanced the commitment to provenance research. His organized the exhibition on pop art pioneer Richard Hamilton at The Rooms in St. John's, Newfoundland. His next project surveys the Canadian reception of post-war American art during the 1960s.

**Janine Marchessault (University of York)**

Director of the Visible City Project + Archive which is examining new practices of media art in a variety of urban contexts. She is also a co-investigator on the Future Cinema Lab, Faculty of Fine Arts at York University. Funded by the Canadian Foundation for Innovation, the Future Cinema Lab is a state-of-the-art digital media research facility devoted to 'new stories for new screens.'

As Canada Research Chair in Art, Digital Media and Globalization, Dr. Marchessault is investigating how the information society is redefining the artist's role and shaping urban contexts.



Inherent in her work is the development of new research methods that use advanced media technologies to interpret the cultural ecologies of cities, with the ultimate goal of proposing new planning and policy strategies.

Currently, Professor Marchessault is researching the cultural and political practices of artists in urban contexts and new forms of translocal citizenship in Toronto, Havana and Helsinki. Another research focus is the culture of suburbs. She was recently awarded a SSHRC grant to develop a case study of Willowdale, Ontario, with an interdisciplinary group of artists.

Dr. Marchessault has two book projects in progress. *Ecstatic Worlds: 20th Century Utopian Film Projects* examines collective experiments with film and media that have been driven by aspirations for universality. *Urban Mediations: Art, Ethnography and Material Culture*, an interdisciplinary collection that she is co-editing, situates different historical and methodological currents in urban media studies.

Dr. Marchessault is the author of *Marshall McLuhan: Cosmic Media* (Sage Publications, 2005) and co-editor of *Fluid Screens, Expanded Cinema* (University of Toronto Press, 2007); *Wild Science: Reading Feminism, Medicine and the Media* (Routledge, 2000); and *Gendering the Nation: Canadian Women's Cinema* (University of Toronto Press, 1999). She is a founding editor of the arts journal *Public Art/Ideas/ Culture* and a past president of the Film Studies Association of Canada.

Cristina Miranda de Almeida (IN3/UOC and UPV/EHU)

Visiting Scholar at the IN3/UOC, Research Line Digital Culture. Currently teaching and researching at the Department of Art and Technology, Facultad de Bellas Artes, University of the Basque Country. Wicklow Fellow in the MPCT, University of Toronto (projects Global Art, WiredBook & Electronic Margin and Point of Being). ARA (Planetary Collegium, University of Plymouth, Great Britain, 2006) and Visiting Researcher in Paris, at the Beaux-arts l'École Nationale Supérieure (April-June 2010). European PhD in Arts (2005, UPV-EHU, thesis *The Tree of Art. Inter-subjective and Trans-sensorial Matrix for a Non-visual Art and the Silence of the Artistic I*; 4 years of FPI Research Grant), a Postdoctorate Degree as Advanced Research Associate, Planetary Collegium, University of Plymouth, U.K. (2005/06), a Master in Industrial Design (DZ-BAI), a Diploma of specialization in Territorial Planning (Fundicot, Universidad de Valencia), a Diploma of specialization in Town Planning (IBAM, Rio de Janeiro), a Degree in Art (Faculty of Fine Arts, University of the Basque Country, UPV-EHU, Vizcaya, Spain) and a Degree in Architecture (Faculty of Architecture, USU, Rio de Janeiro).



Some Publications: Book *El Árbol del Arte. Matriz trans-sensorial e intersubjetiva para el arte no visual y el silencio del yo artístico* (2006); *The Silence of the Artistic I. Listening for bringing the Nanoscale to Human Consciousness* (2007); *The Electronic Dimensions of the Silence of the Artistic I in the Germinal Operations of Art Creation* (2006); *WiredBook & Electronic Margin* (2008); *The space in between. Design bottom-up knowledge in an Interconnected Society* (2009); *Interactive Design and Augmented Realities* (2009).

The results of her individual and collective research have been presented in different in-

ternational and national conferences: Montreal (2010); Vitoria-Gasteiz (2009); Orlando, USA (2009); Munich (2009); Aberdeen (2009), Singapura (2008), Valencia (2008), Bilbao (2008), Plymouth (2007-05), Montreal (2005), Istanbul (2005), Tucson (2006), Naples (2007).

Alejandro Piscitelli (U. of Buenos Aires)

Alejandro Piscitelli has been CEO of the National Educational Portal of Argentina (Educ.ar) (2003-2008), President of the National Association of Distance Education and Educational Technology of Argentina (EDUTIC) and Content Director of Competir.com. He is a consultant on Internet and digital communication. Professor of Data Processing, Informatics and Telematics at the Faculty of Social Sciences (University of Buenos Aires). He's been professor at the Latin-American Faculty of Social Sciences (FLACSO), University of San Andrés, and several universities in Latin American and Spain. Since 1995 he's been co-editor of the Interlink Headline News, one the firsts electronic journals in Argentina.



He has published the following books: *Nativos Digitales. Dieta cognitiva, arquitecturas de participación e inteligencia colectiva*. Buenos Aires; Santillana, 2009; *Internet. Imprenta del siglo XXI*. Barcelona: Gedisa, 2005; *Meta-cultura, El eclipse de los medios masivos en la era de Internet*, Buenos Aires: La Crujia, 2002; *Ciberculturas 2.0. En la era de las máquinas inteligentes*. Buenos Aires: Paidós, 2002; *La generación Nasdaq. Apogeo y derrumbe? de la economía digital*, Buenos Aires: Granica, 2001; *Post-Televisión. Ecología de los medios en la era de Internet*, Buenos Aires: Paidós, 1998; *(Des)Haciendo Ciencia. Conocimiento, creencias y cultura*. Buenos Aires: Ediciones del Riel, 1997. He's also been Secretary of the Latin-American Social Sciences Council (CLACSO) and Advisor of the Ministry of Public Service of Argentina.

B. W. Powe (University of York)

Canadian writer, poet, novelist, essayist, philosopher, and teacher. Powe received a Master of Arts degree from the University of Toronto in 1981 and studied there with Marshall McLuhan and Northrop Frye. Ph.D (York University/ 2009) on Marshall McLuhan and Northrop Frye. He currently teaches English in the Department of English at York University. His courses there have included Visionary Literature: from Hildegard von Bingen and Dante to Bob Dylan and Joni Mitchell, and Marshall McLuhan and Northrop Frye: Two Canadian Theorists. He continues to teach the first year introduction to literature course.



He has been the program director or co-director of Marshall McLuhan: What if He Was Right? (1997), The Trudeau Era (1998) and Living Literacies (2002). He is currently at work founding the McLuhan Initiative for the Study of Literacies at York University, to be housed at Founders College. His novella, *These Shadows Remain: A Fable*, is to be published in the winter of 2011 by Guernica.

Publications: 1984: *A Climate Charged* (Mosaic) 1987: *The Solitary Outlaw* (Lester & Orpen Dennys); 1989: *Noise of Time* in *The Glenn Gould Profile*, in *Collections Canada*, National Library Archives; 1993: *A Tremendous Canada of Light* (Coach House); 1995: *Outage: A Journey into Electric City* (Random House); 1997: *The Solitary Outlaw* revised, expanded (Somerville House); 1997: *A Canada of Light* revised, expanded (Somerville House); 2004: *The Living Literacies* Print Record, editor (Coach House); 2005: *The Unsaid Passing* (Guernica); 2006: *Towards a Canada of Light* (Thomas Allen); 2007: *Mystic Trudeau: The Fire and The Rose* (Thomas Allen); Forthcoming 2011: "These Shadows Remain: A Fable" (Guernica).

Eva Pujadas (UPF)

Eva Pujadas is Professor at the Universitat Pompeu Fabra (Barcelona), expert in analysis of TV programming diversity and Quality Television, Communication Ethic and Public Service. She coordinated the following research projects: "Televisión y deliberación política. La construcción del espacio público a través de los géneros televisivos de la realidad en España", "Anàlisi de la diversitat de la programació televisiva 2008-2009" and "Construcció d'un protocol d'anàlisi de la diversitat de la programació televisiva (2005-2007)".



Last publications: *La Televisión de calidad. Contenidos y Debates* (2011) y *Analizar la diversidad de la programación televisiva. Identificación de dimensiones y construcción de indicadores* (2008).

Vincenzo Susca (U. Paul Valéry, Montpellier and Researcher CEAQ, Sorbonne)

PhD in Sociology, Université Paul Valéry; Université Paris Descartes and Sciences de la Communication, in La Sapienza, Rome. Professor at University Paris Descartes, Post doctorate at Universitat IULM, Milan. Director of the publishing house *Cahiers européens de l'imaginaire*, Cnrs, Paris.



Publications: *A l'ombre de Berlusconi*, L'Harmattan, Paris, 2006; *Nos limites do imaginário*, Editora Sulina, Porto Alegre, 2006; *Transpolitica*, Apogeo, Milan, 2008, with D. de Kerckhove; *Ricreazioni*, Bevivino, Milan, 2008, with C. Bardainne.

Papers

McLuhan in the global village

Tradition into Text: Plato's Dialogues and the Literate Revolution

Twyla Gibson

Harvard University, United States and University of Toronto, Canada

1. Introduction

Marshall McLuhan began his *Prologue to The Gutenberg Galaxy* by stressing that his 'field and mosaic approach' to media was 'complementary' to the work of Albert Lord and Milman Parry on the emergence of literate culture out of orality. 'The enterprise which Milman Parry undertook with reference to the contrasted *forms* of oral and written poetry is here extended to the *forms* of thought and the organization of experience in society and politics' (McLuhan 1962/2002, pp. x; 1). McLuhan's method brought together the Parry/Lord scholarship on Homer, the comparative historical approach of Harold Innis, and the theses of E.A. Havelock and Walter J. Ong concerning Plato. Comparing the oral-formulaic style of Homer's *Iliad* and *Odyssey* with the language and style of philosophical prose dialogues such as the *Republic* and *Sophist*, and finding no sign in Plato of the circular formulaic patterns of organization that are characteristic of Homer's verse, he concluded that oral composition is 'imitative' or mimetic: 'the entire message is traced and retraced, again and again, on the rounds of a concentric spiral'. By contrast, literate composition as represented by Plato is straightforward and 'linear' (1964/1994, p. 26). According to McLuhan, 'the content of a medium is always another medium' (McLuhan 1964, p. 8). A 'new technology tends to take as its content the old technology...as indeed Plato did with the dialogue. It was the old oral culture' (McLuhan 2003, p. 125). Between the oral-formulaic style and highly developed literate expression is a zone of 'merging' and 'interplay' (McLuhan 1962/2002, x)-with Plato marking the point of this convergence. Hence 'Plato lived in a double world...he straddled the written and oral traditions [and] translated the tribal encyclopedia of the preceding culture into the written, classified form... an encyclopedic philosophy' (McLuhan 2003, 125). So the difference between the circular formulaic patterns in Homer's epic poetry and the linear prose found in Plato's dialogues represents both the way that messages are conveyed through the form of the medium-and not solely through the content and how the content of a new medium is made up of prior media.

Thus for McLuhan, Plato was 'the representative of the new literate culture of Greece in philosophy,' and the oral and the written were theorized as radically different forms and as representing two different kinds of cognition and culture (Ong, 1982/1991, pp. 167-8). The oral is poetic, circular, imitative, concrete, mythical, emotional, uncivilized; whereas literate is philosophical, linear, original, abstract, rational, and civilized (1969/1995, p. 245). So the 'Great Divide' between Homer and Plato in the Literate Revolution became the fundamental model that was extended to the split between manuscript and print media in the Gutenberg Revolution and the divide between print and electronic media in the Electric Revolution.

However, the hypothesis concerning the radical division between oral and written forms is

not consistent with the theory that the new medium takes as its content the previous media. Similarly, there is a problem with the hypothesis concerning a basic contrast between the oral as represented by Homer and literate forms as represented by Plato and the theory of a 'frontier' of 'merging' and 'interplay' between oral and written media cultures and systems (McLuhan 1962/2002, p. x) with Plato marking this turning point. Two fundamental premises of the arguments concerning media are at odds: the premise of contrasting oral and written forms; and the argument that the new medium takes as its content the previous media.

If the theory is correct, and the message is communicated by the medium, and previous media become the content of the new medium, and Plato's writings are representatives of literate prose philosophy that have as their contents the prior forms, then there should be evidence in the dialogues of the circular oral-derived formulaic technique—known as ring composition—that characterizes the plot pattern in Homer's epics. In ring composition, the plot is ordered into a symmetrical series of topics that moves from a starting point place by place through a prescribed sequence of topics to a turning-point after which the progression is inverted so that the series of topics is repeated in reverse as its returns to the beginning, thereby forming a ring, typically represented on paper as follows:

A – topic 1
 B – topic 2
 C – topic 3
 D – turning-point
 C* - topic 3 response
 B* - topic 2 response
 A* - topic 1 response and return to starting point

This way of representing rings is a compromise; circular patterns are difficult to represent in written form because they do not 'flatten out well on a printed page' (Peabody 1975, pp. 1-2 & 70). In this A-B-C-D-C*-B*-A* progression (the asterisk indicates a repeated element), there is a relation between the topic in A that serves as the starting point in the ring series and the topics discussed at place A* at the end of the sequence signaled by repetition of key words, ideas, or themes. A and A* are parallels, matched pairs wherein A sets up the situation and A* responds to it or resolves it. Larger scale plot rings encompass smaller rings that link with the overall circle to create spiraling forms. Ring composition (also known as 'chiasmus,' emphasizing the cross over and inversion of the order of topics; 'pedimental' writing that denotes a sequence that goes up to a mid-point, changes direction, then comes down the other side; or 'inclusio,' denoting the bracketing into one unit of everything from start to end) is a framing device wherein the ending joins up with the beginning creating a circle that encompasses everything between the opening phrases and the conclusion (Douglas 2007, pp. 1-6). These are the features that characterize ring composition that scholars use to identify circular patterning in oral traditions and oral-derived literature.

It turns out that Plato's writings *do* manifest these sorts of circular patterns that characterize ring composition in Homer's oral-formulaic style, as studies over the last two decades have demonstrated (Barney 2011; Brumbaugh 1989, pp. 17-22; Notomi 1999, pp. 39-42; Pritzl 1999, pp. 60-83; Thesleff 1993, pp. 107-128). Additionally, in a number of recent works, I have reexamined Plato's dialogues in light of the research on ring composition and have shown that recognizing this *form* is crucial to the understanding and interpretation of the philosophical *content* (Gibson

2010a, 2010b, 2009, 2005).

Similarly, in the years since McLuhan and colleagues associated with the Toronto School of Communication published their pioneering work, subsequent researchers have amassed a body of studies relying on the 'field approach' that support the hypothesis of a frontier zone of interaction between forms—while calling into question the notion of a Great Divide between orality and literacy. Strong evidence from field studies of different cultures and time periods shows that oral traditional expression continues alongside and into written texts. Instead of a total 'break' between oral and literate technologies, the research describes 'a complex series of graduations and transitions existing between the two' (Foley 1999, p. xiii; Kellog 1977, p. 655-65). Thus the application of the field studies method has demonstrated fairly conclusively that the meeting of traditional and textual cultures results in a gamut of expressive forms, from ongoing oral traditions, to oral traditions that endure together and in interaction with literate forms, to highly textual compositions that still manifest traces of their roots in orality.

These facts support the argument I offer in this essay. My central claim is that the findings based on the application of the field method to Greek philosophical texts need to be revised, whereas the premise of Plato's pivotal role in the Literate Revolution and the premise that the contents of a new medium encompass prior forms, are entirely accurate and have stood the test of time. Do Plato's writings manifest the circular forms of organization that have been identified with Homer's formulaic language and style? If there is evidence of ring forms in Plato, what is the significance of this finding for reading and interpreting the philosophical content in the dialogues? How does the presence of ring composition in Plato change the 'field or mosaic approach' to media studies that McLuhan and members of the Toronto School premised on a radical contrast between oral and written forms?

In the pages that follow, I highlight the passages concerning the banishment of the poets in Book X of the *Republic* that Havelock offered as evidence for the argument that Plato was a representative of literacy. In a previous study, I showed that Plato vanquishes the poets not because he is rejecting the imitative mindset that Homeric education engenders and as a consequence of his literacy, but rather, in order to advocate for the Pythagorean form of education that had a long and venerable tradition with roots extending back into the pre-literate era (Gibson forthcoming). This essay builds on this research by show that the very passages cited by Havelock to support his arguments are in fact organized into a ring composition. What is the significance of this finding?

Further, I will argue that evidence of ring composition in the *Republic* indicates that Plato represents not a 'break' with tradition but a 'break boundary' a site of assimilation and interplay between oral and literate media, systems, cognitive styles, and cultures. I argue that Plato's dialogues are a hybrid form, amalgamating formulaic modes of organization with a fully literate prose modality. My argument is that the messages in Plato's dialogues are not conveyed solely through the philosophical content, but rather, in the manner in which that content is ordered into a 'total configuration'.

Results confirm McLuhan's claims about the 'doubleness' of Plato's writings, and buttress the central observation that 'one medium's content is always other media' (Kittler, 1986/1999, p. 2), even as they show that the switch from oral expression to writing was more complicated than was at first envisioned by the early developers of media studies as a discipline. Straightening out discrepancies lays the ground for a set of premises that are more in line with the evidence and provide a superior method for the comparative study of media.

I begin by outlining the contributions to the theory and method offered by Parry, Lord, In-

nis, Havelock and Ong, contributions that McLuhan drew upon when formulating his 'field or mosaic approach'. Above I presented a brief description of the features that are characteristic of ring composition in oral and written works; these features can now be used to identify circular and spiraling patterns in Plato's dialogues. Then, I point to the statements at the beginning of Book X of the *Republic*—the key passage in Havelock's argument concerning Plato's rejection of formulaic technologies—wherein Socrates asks for a definition of *mimesis* (imitation or representation), but no explicit definition appears to be given. I then turn to Plato's *Sophist*, a dialogue that does present a definition of imitation that is described as being 'comprehensive in all its details'. I set forth the definition based on these instructions in the *Sophist*, and show that it has all the features that characterize a ring composition. Then, I turn to the sections of Book X of Plato's *Republic* that banish the poets. Socrates in this Book carries on a lengthy discussion the main point of which is to determine which tradition offers the superior education, the tradition of Homer and the poets or the tradition initiated by Pythagoras. This passage demonstrates that Homer is discredited and in his place, Plato's Socrates argues that the superior education is offered by the centuries-old Pythagorean tradition. Socrates was not arguing for an education based on literacy, as Havelock and Ong suggested. He was arguing for a different branch of the Greek tradition. Moreover, the demonstration that the passages themselves are organized into a ring composition that conforms to the pattern for the definition of imitation outlined by explicit statements in the *Sophist* makes it even more unlikely that he is rejecting the imitative methods of education used by the Greek poets. Finally, I explain why removing incongruencies in media theory puts the method on a more solid basis and paves the way to a more powerful explanatory model that conforms more accurately to the evidence, both ancient and contemporary.

2. Theory and Method

In the 20th century, the Parry/Lord scholarship had a significant impact on a number of different disciplines. The hypotheses on oral tradition became a major critical method for the study of many ancient, medieval, and contemporary literatures, and continues to serve as a theoretical basis for comparative studies of media that span different academic divisions, geographies, and historical periods (Foley 1985, pp. 11-12). In emphasizing that his method for the study media was 'complementary' to the Parry/Lord research, it was precisely the contrast between oral and written *forms* that was the basis for the extension of the method to *forms* of society and politics. Hence, the Parry/Lord claim that storehouse of formulaic expressions in the *Iliad* and *Odyssey* were built up through imitation and repetition, and their comparative approach (which sought to verify hypotheses concerning the long dead Greek manuscript tradition through a comparison with the then living oral tradition of South Slavic singers), is the foundation for McLuhan's expansion of contrasting forms to different cultural domains and to many other time periods in human history. These claims and the comparative method also took their impetus from several other scholars, whose arguments were also influenced by the Parry/Lord approach.

The comparative analysis of parallel situations at analogous points in history is a method proposed by Harold A. Innis for using past transitions in technology to shed light on current concerns. Innis suggested that history provides a laboratory for studying the relations between technology and culture. The central technology in a civilization is a powerful force that impinges on many facets of life. According to Innis, identifying the predominating technology in

a culture makes it possible to discover what the physical and social pattern of that culture has to be, he asserted, cautioning that this central form and all its powers are frequently masked from the attention of those living in that specific technological environment. The dominant communication technology, he maintained, creates a bias or a kind of blindness that makes the effects of that medium imperceptible to those living in that technological and cultural environment. He warned that our immersion in print culture renders us unable, 'to detect its characteristics'. Innis stated that observing how media impacted different cultures at various points in history 'may enable us to see more clearly the bias of our own' (Innis 1951, p. 34-44).

Though the postulates relating to Homer in McLuhan's method and theory were based on the scholarship of Parry and Lord, the arguments pertaining to Plato's part in the transfer from formulaic techniques to writing as the most important technology for preserving and transmitting information in Greek culture were mainly contributed mainly by Eric Havelock and to a lesser extent, Walter Ong. In Havelock's *Preface to Plato* and other works, he said that ancient Greek society was 'wholly oral' and that after the introduction of the phonetic alphabet, there was 'a long period of resistance to the use of letters, 'so that Athenian culture did not become literate for about three centuries (Havelock 1986, p. 90; 1966; pp. 44-67). After Homer, he emphasized, the methods for transmitting the culture began to change as Greek education gradually reoriented around literate forms of instruction. Even up to Plato's time, the introduction of the alphabet made 'little practical difference to the educational system or to the intellectual life of adults' (*Ibid.*, p. 38).

Following a comparative analysis of the language and style found in Homer's *Iliad* and *Odyssey* with what he observed Plato's dialogues, Havelock pointed to the lack of formulaic patterning in Plato's writings. Underscoring the sections of Book X that banish the poets and their poetry (*Rep.* 598d-602a), Havelock assumed that Plato's Socrates was dismissing the poets because he was rejecting their education based on the use of imitative formulas, and urging that his own philosophy replace Homer as the central literature in Greek education. With the ascendancy of literacy, he argued, more and more of the cultural heritage was set down in writing, and the ways of the old tradition were challenged. Plato's attack on the poets was, according to Havelock, a rejection of the oral tradition in which the bards merely imitated and copied words and phrases without any genuine knowledge of what they were doing. Plato's assault, he maintained, was a rejection of the formulaic style produced by the Greek oral mentality, a state of mind that was in tension with new modes of thought made possible by the effects of the alphabet. Havelock's claims about Plato were augmented by Walter J. Ong, who further refined the arguments concerning the split between orality and literacy so that 'the relationship between Homeric Greece and philosophy after Plato was not continuous, but disruptive and antagonistic' (Ong 1982/1991, pp. 167-68).

Though the claims about the ground-breaking importance of the technology of the phonetic alphabet presented a challenge to established conceptions of Greek culture and generated major controversy when they first appeared in the mid-20th century, the argument about the gradual nature of the modulation to literacy is no longer in question. Researchers have found significant evidence of a protracted phase of interplay between formulaic habits and literate modes of expression that stretched on until long after Plato (Robb 1983, p. 3; Lentz 1989, p. 176; Thomas 1992, p. 103; Cook-Gumperz and Gumperz p. 1981). The argument that Homeric epic has its origins in orality has gained broad acceptance as well. The claim that Plato is an exemplar of literacy and an 'author' (in the way we conceive that role in contemporary culture) has rarely been scrutinized.

3. Transitional Forms and Hybrid Media

Field studies of ongoing oral cultures demonstrate that traditional language and poetics persist for a long time after writing is introduced. Composers and their communities of reception do not automatically forsake traditional forms and immediately adopt literate modes of expression when writing first appears on the scene. Initially, the familiar language and style that is understood by both composers and spectators continues to be employed. Oral-formulaic language and organizational patterns are recorded in writing and signal to readers the same meanings and messages that guided spectators' understanding in oral performance culture, even though the presentation is no longer live (Foley 1999, pp. 17-18; 45). In spite of the research that has confirmed that the Greek oral tradition lasted for hundreds of years after Plato, in both Europe and North America, the notion that the dialogues are representatives of alphabetic writing only, and that 'Plato was an author has rarely been given a second thought.

While the contrast between Homer's orality and Plato's literacy in Havelock's *Preface to Plato* was initially 'trumpeted to an unreceptive world' (Thomas 1995), it turns out that this resistance focused on the now 'largely discredited argument' that 'it was the introduction of the alphabet that led to the development of science, philosophy and 'the true beginning of consciousness'' (Nunberg 2011, p. 10). The argument that Plato is a representative of literacy has formed a tacit assumption that continues to justify reading the dialogues as authored books and solely through the lens of literary-critical methods of exegesis. However, not only is the argument that Plato's dialogues mark a sudden shift to literacy at odds with both the evidence and the arguments in the theory that describe the lengthy and gradual nature of the change of medium, but there are also significant problems with the view that Plato's banishment of the poets was a rejection of the formulaic patterns of thought and education.

The assumption that Plato's condemnation of the poets represents a rejection of the formulaic style is problematic, and cannot be supported by statements in the dialogues. In the *Republic*, Plato has Socrates criticize the education of the poets in an effort to instate his own system as a substitute. However, the system he was trying to establish—as is stated outright in Book X of the *Republic* (598a-601e) and confirmed by Aristotle's report of Plato's teaching (*Metaphysics* I. IV. 9-v. 1-VI. 10)—was the philosophy of the Pythagoreans. Plato was 'for the most part' a Pythagorean, states Aristotle, and he supplemented their teachings with some ideas from Heraclitus and Socrates and added in few distinctive features of his own. Plato was not advocating for literacy. Havelock read the passages concerning the banishment of the poets as proof that Plato was dismissing the oral tradition as represented by Homer. However, this section of the dialogue presents a lengthy comparison of two traditions in order to determine which one offers the best education, the tradition associated with Homer and his 'tribe'; or the one associated with Pythagoras and his followers. At every stage of the discussion, Plato's Socrates establishes that the tradition and way of life inaugurated by Pythagoras provides the superior training. Thus, when there is a second explicit comparison in the *Republic* with the 'Homeric tribe,' the competition once again turns out to be the Pythagoreans, not a new tradition based on the technology of the alphabet that Plato was in process of creating. According to the *Republic*, the Homeric tradition is not dismissed in order to advocate its replacement by writing. It is rejected and in its stead, Plato champions his own philosophy, which is said to be a 'successor' to the tradition that was 'transmitted to posterity' by the students of Pythagoras.

Havelock and Ong—and then McLuhan—located Plato on the writing side of the turning point between the oral tradition and the literate mentality and viewed the dialogues as repre-

senting a discontinuous leap into literacy. This assumption is betrayed by Havelock's statement that 'Plato was writing at the crucial moment of transition from orality to literacy' (Havelock 1986, p. 111). Ong's contention that the change from orality to literacy 'was not continuous,' McLuhan's argument that Plato was a 'representative of the new literate culture of Greece'. However, since studies show that in the initial stages of the move from speech to text, 'prose at first conformed to the previous rules for the poetic,' as Havelock himself noted (Havelock 1963, p. 39), the result that would be expected is a language and style that is somewhere between the poles of poetry and prose, a hybrid or 'double form' that is simultaneously formulaic and circular and linear and sequential.

The theory leads to the expectation that Plato's writings would reflect this kind of hybridity and reciprocity between the two forms. Havelock emphasized the notion of a hybrid form when he said that prose at first conformed to the principles of poetic composition, that initially, writing was utilized as a tool for preserving what had 'been shaped for preservation orally,' when he concluded that letters were for a long while 'used to inscribe an orality which was slowly modifying itself in order to become a language of literacy,' and when he said that 'Plato was the first to adapt sustained oral teaching into continuous written discourse' (Havelock 1963, p. 56). McLuhan stated that Plato 'straddled the oral and the written' and 'lived in a double world'. Even as Ong urged a discontinuity in the tradition, he maintained that initially at least, prose writing contained a 'residue' of the set expressions and formulaic organization that epitomize oral-formulaic composition. Further still, he went on to identify a number of characteristic features of the traditional style that spilled over into later written texts as a vestige of formulaic patterning, naming as specific examples the system of 'places' or 'topics' that developed over time into 'ring composition' (Ong 1967, p. 84). Ong said that if we find in written texts the 'formulaic tendency to repeat at the end of an episode elements from the episodes beginning,' then we may be sure that these symmetrical patterns are residues of traditional composition (*Ibid.*). Still, the possibility that Plato's writings might manifest traditional patterning did not appear on the radar, even though both the theory and the evidence lead inescapably to the expectation that Plato's dialogues are a product of the merging of traditional and textual systems and cultures, and not just an artefact of the technology of writing.

Juxtaposing statements highlights these incongruencies and oppositions in the theory. While the theory points to the dialogues' hybridity, when the theory was applied to Plato, the dialogues became an exception. While Ong described the 'transformation of the word' as a continuum that followed a developmental succession from 'formulas' to 'places' to the 'headings of literate categories' (Ong 1967, pp. 80-81) so that the balanced symmetries of the ring composition were 'intermediate between the oral and the chirographic-typographic' (*Ibid.* 1967, p. 26), he wrote at the same time that these codifications of memory were 'superseded' by Plato. While Havelock claimed that in the development of human thought, Plato's theory of forms was a 'transition' between the concrete image-thinking of oral poetry, and the arrangement under general headings or categories of the abstract concepts of philosophy (Havelock 1963, pp. 259-60), his argument was that in the dialogues, oral forms of preservation were so completely eclipsed by writing that there was no evidence whatsoever of formulaic techniques such as ring composition.

The heart of the matter is that there is a tension and inconsistency at the very foundations of media theory. The hypotheses concerning Plato's role in the transition to the use of letters cannot be supported, either by the evidence or by other premises of the theory.

4. Ring Composition in Plato's *Sophist* and *Republic*

In Book X of Plato's *Republic* (595a-c), Socrates asks his companions to define imitation (*mimesis*); yet, no explicit definition is given. Only the *Sophist* presents an overt, detailed, and comprehensive account of *mimesis* (265a-268d). The features that characterize circular formulaic composition in Homer were identified above. Drawing on the comparative method, let us put the passage from the *Republic* together with the passage in the *Sophist* that provides an extended explanation of the imitation and compare the two.

The Definition of Imitation in Plato's *Sophist* (265a-268d)

Figure 1.

A **art** (265a-b)
 B **acquisition** (angling, hunting, contention, merchant of learning, and other kinds, 265a)
 C **production** (power to bring into existence what did not exist before, 265b-e)
 D **divine** (gods, elements of nature, fire, water, living animals, plants, lifeless bodies, 265c)
 E **human** (things made out of nature by man are works of human art, 265b, e)
 F **original** (in building, produces an actual house, 266a)
 G **image** (266a, d)
 H **likeness** (eyes, dreams, 266b-d)
 I **semblance** (reflection, shadow, 266b-d)
 J **tools** (uses instrument, painting produces dream for waking eyes, 267a)
 K **mimicry** (producers person or voice is used as an instrument, 267a-b)
 L **knows** (knows thing impersonates, acquainted with traits or voice)
 M **does not know** (no knowledge of virtue, only an opinion, conceit)
 N **simple** (sincere, imagines that what he believes is knowledge)
 O **ignorant** (insincere, deceives others, 268a-b)
 P **private** (short arguments, forces to contradict themselves)
 Q **public** (long speeches to large assembly, 268b)
 R **statesman** (268b)
 S **demagogue** (a long-winded type, 268b)
 T **wise man** (the real, genuine, 268b)
 U **sophist** (268c)
 U* [sophist]
 T* [wise man]
 S* [demagogue]
 R* [statesman]
 Q* [public]
 P* [private] **the art of contradiction making**, (268c)
 O* **descended from an insincere kind of conceited. ..** (268c)
 N* [simple]
 M* [does not know]
 L* [knows]
 K* **mimicry. ..** (268c)
 J* [tools]
 I* **of the semblance-making breed, presents a shadow play of words**
 H* [likeness]
 G* **derived from image making, distinguished as a portion** (268d)
 F* [original]
 E* **but human** (268d)
 D* **not divine** (268c-d)
 C* **production** (268d)
 B* [acquisition]
 A* [art]

Imitation (*Mimesis*) in Plato's *Republic* (595b-601e)

Figure 2

A	art : in poetry: poets and all other imitators, that kind of art is a corruption of the mind (595b)
B	acquisition (learning): of all listeners who do not possess as an antidote... (595b)
C	production (brings into existence what did not exist) []
D	divine (elements of nature). .. a knowledge of its real nature ... (595b)
E	human : certain love and reverence for Homer has possessed me from a boy (595b)
F	original : For he appears to have been the first teacher and beginner of tragedy
G	image : Could you tell me what imitation is? I do not apprehend it (595c)
H	likeness (eyes): often the dimmer vision sees things in advance of the keener .
I	semblance : posit one form for multiplicities with the same name
J	tools : of the many couches and tables, these utensils imply only two forms
K	mimicry : producer fixes his eyes on the form to make couches we use
L	knows : God, knowing this, created the unique couch with real being
M	does not know : painter will paint though he has no expertness
N	simple : in these arts, he deceives children and foolish men
O	ignorant (deceives others): making them believe it is real
P	private (short arguments in private): anyone reports to us
Q	public : who knows everything that men severally know
R	statesman : he is a simple fellow who met... (598d)
S	demagogue : a magician and imitator, is deceived
T	wise man : into the belief that he is all-wise
U	sophist : can't tell knowledge from imitation
U*	sophist: we scrutinize tragedy and its leader, Homer
T*	[wise man]: these poets know all arts and things human
S*	[demagogue] critics fall in with imitators & are deceived
R*	[statesman] a man able to produce exemplar and semblance
Q*	[public] pursuits that make one better in public & private life
P*	[private] and many others are able by private teaching
O*	ignorant to impress upon their contemporaries the conviction that
N*	[simple] they will not be capable of governing their homes or city
M*	[does not know] unless they put him in charge of their education
L*	[knows] and make themselves beloved of wisdom
K*	mimicry . .. all the poetic tribe beginning with Homer are imitators of images
J*	[tools] the painter will fashion, knowing nothing of the cobbler's art
I*	semblance-making, appears to be a cobbler to him and to those who know nothing
H*	[likeness] but judge by forms and colors, the poet, knowing nothing but how to imitate
G*	image making , lays on with words and phrases the colors of the arts so the equally ignorant
F*	[original] not the maker, cobbler & smith but only the man who understands the use
E*	human three arts are concerned with everything, the user's art, the maker's and the imitator's
D*	not divine the excellence, beauty , rightness of every implement, living thing and action rely on use
C*	production for which each is made or by nature adapted?
B*	[acquisition] the user knows most and reports to the maker the good or bad effects in use of the thing
A*	[art]

Setting forth the topics in this way shows that both passages are organized into an A-B-C-D-C*-B*-A* type of progression. In the *Republic's* ring, there is a relation between the topic at K, mimicry, in the initial series and the topics discussed at place K* at the end of the sequence. The parallel accounts of the poets imitation signal the relation between matched pairs on either side of the mid-point so that K* responds to the issues established at K. Both the *Sophist* and the *Republic* move step-by-step through a series up to a turning-point, change direction, and then move in reverse back to the topic that served as the starting point. Thus, these two passages both manifest the features that characterize ring composition in Homer. Further, the fact that the very passage in the *Republic* that Havelock cited to support the claim that Plato was rejecting imitative formulaic expression has an implicit order that conforms to the definition of imitation in the *Sophist*. The passage also has all the features that characterize formulaic patterning in Homer.

5. Conclusion

'The medium is the message' underscores the way that messages are transmitted not simply through the 'content,' but rather, through the 'total configuration' of form and content (McLuhan 1964, p. 7). That two of Plato's dialogues, the *Sophist* and the *Republic*, manifest the 'concentric spirals' associated with formulaic techniques found in Homer at the same time as they demonstrate a mastery over linear prose expression is exactly what the theory leads us to expect. Additionally, the presence of the formulaic definition for imitation in the section of the *Republic* that Havelock and then McLuhan referenced for the argument that Plato was denouncing the imitative formulaic style adds to the weight of evidence that this premise of the theory is likely incorrect. Further, extending to Plato the findings concerning the communication value of traditional forms makes it clear that recognition of ring composition in the dialogues must hold significance for interpreting the messages communicated by the text. If Plato's dialogues are an amalgam of formulaic poetics and literate prose writing, then meaning is generated through the interaction of the rings and the straightforward and linear modes of communication typical of alphabetic expression. Focusing exclusively on the philosophical content in Plato's writings while overlooking the circular forms into which the content is shaped means that McLuhan, Havelock, and Ong have missed the messages communicated by the total configuration of form and content. These messages await recovery and have the potential to revitalize our tradition. A new understanding of the medium and messages communicated in ancient texts that formed the foundation of our tradition will shed new light on our collective past, and provide insights into the ways that changes in technology might influence our future.

The view that Plato represents a break with tradition changes to a view of the dialogues as a 'break boundary' between oral and literate media systems, technologies, mentalities, and cultures. Findings confirm McLuhan's arguments concerning the 'doubleness' of Plato's writings, and Innis's claims concerning the bias produced by the prevailing technology. At the same time, these findings indicate that the interaction between tradition and texts was even more complex and chaotic than was initially supposed.

With the acknowledgment of traditional forms in Plato, the view of history as being cordoned off into a series of discrete compartments crumbles, clearing the way for a unified picture of the Greek tradition from Homer to Aristotle and beyond. Further, the walls that have been constructed between the Homeric and Platonic traditions can also come down to make way for a truly interdisciplinary academy and unified approaches to the ancient world.

Since studies in oral tradition have indicated that the transition from orality to literacy should be conceived as a continuum rather than a Great Divide, so too the arguments concerning 'digital divides' in our own era must be re-examined (Bharat, Merkel, and Bishop 2004). Just as transitional compositions—those that were set down during the modulation from utterance to record—fall along a spectrum of expressive forms and take as their contents the prior media, so too we should anticipate that works created during the transfer from print to digital media will for many decades reflect 'a complex series of graduations and transitions existing between the two' forms (Foley 1999, Gibson 2009, Kellogg 1977, 655-65). In addition, there may be barriers to access to computer-mediated communication, but these barriers will be permeable and not airtight. Removing inaccuracies makes the premises of the theory consistent, both internally and with the evidence, so the model provides a more powerful lens for viewing media history and philosophy, and for generating hypotheses concerning the change

to digital media presently underway.

With a re-aligned theory, the supposition of a Great Divide gives way to the more nuanced view of media changes as encompassing continuities and smaller fractures in the tradition. The view of communication, cognition, and culture as an evolutionary stairway of progress, with Plato's literacy delineating the date when humanity moved to a higher, more advanced, and indeed superior step gives way to a view of the dialogues as a mixed medium that translates the prior technologies into a revolutionary—but not evolutionary—new form. Plato's writings are a break-boundary—not a break—between old and new media. The view that Plato marks a decisive move 'out of' the 'primitive' mentality associated with the Greek oral tradition to a new, more 'civilized,' indeed superior stage of communication is a major component in the intellectual support that has and continues to justify the wholesale destruction of the languages and traditions of oral societies around the world (Chamberlain 2002, 72). So long as Plato's dialogues are seen as delineating a progression to a more advanced stage in communication and culture rather than as a transition *from one kind of medium to another* our interpretations of ancient history and philosophy will inevitably view the language and traditions of oral cultures as relatively backward and inferior in an evolutionary scheme of value. For example, McLuhan observed how the written word has frequently been wielded as a weapon of power and control over oral cultures, 'Western man with his alphabet has always felt it mandatory to impose it on all other people' (McLuhan 2003, 228). Plato's dialogues are important sources of information about Greek culture, and they have significantly influenced the history of ideas. Alfred North Whitehead once pointed out that the Western intellectual tradition 'consists of a series of footnotes to Plato' (Whitehead 1929/1978, 39). If Plato's dialogues are a fusion of oral and written styles, created by way of principles that encode messages that have not been decoded, then a re-evaluation will provide new information for the study of ancient history and philosophy. Such a re-evaluation of Plato's role in the Literate Revolution has the potential to change for the better our understanding of ancient oral-derived literatures, as well as oral histories, traditions, and even contemporary media that were constructed on the Greek paradigm. As the shift to digital media gains momentum, we can anticipate that new knowledge of the past will come to light as well as a more expansive view of other cultures in the present.

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McLuhan as Translator

A Project in Understanding Media, Today

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1. Introduction

For the project of 'Understanding Media, today' I would like to take the literal approach and ask, how Marshall's book *Understanding Media* could possibly be understood today. The encyclopedic vista of *Understanding Media*, which exceeded any of the typical analyses of mass media as film, radio or press of its day, accomplishes in my opinion a large-scale work of translation, out of which 'media' emerges as object of study from established fields of knowledge. Hence, I would like to turn to the problem of McLuhan's historical epistemology as well as of his work of translation by taking into account some mostly as yet un-considered resources of this work.

In my analysis I will seriously consider McLuhan's specific rhetoric and its compression of long thoughts and reasonings. My investigation, therefore, concentrates mainly on one sentence from *Understanding Media*, which exhibits a complex constellation of fields of knowledge: "Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message."¹ The sentence already devises a theory of mediality which binds together at least three considerations. First, the idea that forms of transport do more than carry something across. Secondly, a consideration of translations and transformations involved in the process. And thirdly, the sentence reflects on the simple model of communication of sender, receiver and message. I want to put forth the thesis that this sentence in its particular composition, wording and interconnections is an effort of translation. The phrase translates discursive formations of knowledge into different others, thus allowing for the expression of a theoretical axiom of media studies.

My paper is structured into three parts according to the word order of the investigated sentence. First, in "Each form of transport not only carries," I am going to trace a discourse of transport, that is made use of in *Understanding Media* and that introduces a specific notion of transference processes. Secondly, I examine "but translates and transforms" as the particular conjunction of ideas from the discourse on material transportation and the communication process, which itself can be situated historically in linguistic and literary theories of the first half of the twentieth century. The third part treats the peculiar order of the elements of the communication model. In my conclusion, finally, I suggest that the method of translation is not only a method of understanding media, but should guide readings of *Understanding Media* today.

1. McLuhan (2008, p 97).

2. “Each form of transport not only carries...”

The sentence “Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message,” is found in the chapter ‘Roads and Paper Routes’ in *Understanding Media*. This chapter treats the replacement of processes of material transposition by the transmission of information. McLuhan proposes to tackle the effects of this replacement by investigating transportation, because the term ‘communication’ has been in use in connection with roads, rivers, and canals well before becoming a term for ‘information movement’ in the electric age. McLuhan therefore reasons that: “Perhaps there is no more suitable way of defining the character of the electric age than by first studying the rise of the idea of transportation as communication, and then the transition of the idea from transport to information by means of electricity.”²

In this part of my investigation I want to explore in detail a discursive formation³ of transport that allows for McLuhan’s outlook. The discourse of civilization associates transportation and communication in various ways and observes the forms of community involved. McLuhan avails himself of this discourse for his media-theoretical endeavors on transportation in ‘Roads and Paper Routes.’ In doing so he imports a particular perspective on processes of transference, which he assembles using reflections on translation and the model of communication in: “Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message.”

Historians of civilization, economy and architecture in the first half of the twentieth century appealed to the fact that forms of transport do more than only carry something from one place to another. Forms of transport and their scope do affect types of civilization, and economies as well as architectural and urban ratios. In this sense, means of transport have impact on human forms of community. Lewis Mumford accords a prominent status to archeological research on historical routes of transport in his *City in History* 1961: “archeologists [...] have begun to see the particulars of this or that culture in the wider context of transportation routes, invasions, migrations, conquests, interchanges which turn out to be much earlier and much wider in their provenance than nineteenth-century scholars suspected.”⁴ The traffic ways refer to processes of social organization throughout history, which have dramatic impact on cultures. Hence, the mediating role of routes of transport has to be recognized for cultural history.

In ‘Roads and Paper Routes’ McLuhan refers repeatedly to Mumford’s study. Notably, he also considers the idea of the city as social and institutional extension of human organs and skills.⁵ The city and its lines of transport thus fit into McLuhan’s thesis of media as extensions of the human body and senses adopted from technical philosophy and cultural anthropology.

2. McLuhan (2008, p 97).

3. Here, I am referring to the notion of discourse put forth by Michel Foucaults in *The Archaeology of Knowledge*. Foucault explains that discursive formations are neither certain statements and objects, nor particular modes of statement, nor determined concepts, nor specific thematic choices. A discursive formation is rather characterized by a special division of statements, modes of statements, concepts and thematic choices. Cf. Foucault (2005, pp 34-43).

4. Mumford (1961, p 121).

5. Cf. McLuhan (2008, pp 101, 106 & 109).

gy.⁶ Mumford pursues this concept in presenting the revolutionary transition from the village community to the community of the city as a procedure of extension of roads, which enlarge the operating range of man and at the same time create feedback loops with the newly extended man. In the preface of *The Culture of Cities* of 1938 Mumford states: "What transforms the passive agricultural regime of the village into the active institutions of the city? (...) the active agent is any factor that extends the area of local intercourse, that engenders the need for combination and co-operation, communication and communion; and that so creates a common underlying pattern of conduct, and a common set of physical structures, for the different family and occupational groups that constitute the city."⁷ As an active agent the road extends forms of communication as well as of community. In addition, as an infrastructural element of the enlarged community and form of operation, it prescribes new scales for behavior and action. The urban process runs at least two ways, just like the mediating streets: the construction of roads extends the scope of the village inhabitant, while the enlarged scale in turn transforms the villagers into townsmen who adapt to the extension of action, communication, and community by new ways of behavior and movement. The road does not only carry something from one point to the next, but becomes the active element of civilization's historical progression.

This approach was already conducted by Mumford's teacher Patrick Geddes, an avant-gardist town planner who observed the human scale in urbanistics. In his studies, the learned biologist regards the city as a living being in its relation to the environment:⁸ the 'body politic' of the city is taken literally. For a corporal organization as this, simple principles of health must be observed that enter into studies of town planning through the provision of geographical, historical, economical, anthropological, demographic and eugenic data.⁹ In McLuhan's chapter on 'Roads and Paper Routes' it is this use of the 'body politic' that indicates an examination of the works of Geddes, an examination that is not otherwise stated. McLuhan does take 'body politic' as literally as Geddes and ascribes to it the three stages of disease, which could be healed by the extension of several prostheses or, alternatively, defeat the body and leave it dying.¹⁰ Moreover, in *Understanding Media* McLuhan incorporates the themes of disappearing borders between city and country, of the all-absorbing conurbations or of the Roman road as epitome of the convergence of transport, communication and empire from Geddes.¹¹

Geddes's town planning research was known to McLuhan through the works of Mumford and Sigfried Giedion, and there is evidence for his direct consultation of it at the beginning

6. In *The Gutenberg Galaxy* McLuhan cites the cultural anthropologist Edward T. Hall in this matter. In *Understanding Media* the theses from Sigmund Freud's *Civilization and Its Discontents* with its consideration of the human being as a god of prosthesis are referred to. Cf. Hall (1991, p 55), Freud (2002), McLuhan (1997, p 4), McLuhan (2008). The thesis from cultural anthropology has its historical counterpart in philosophies of technology that have been considered by various introductory essays on McLuhan's works. As a German example see Heinevetter & Sanchez (2008, pp 24-33).

7. Mumford (1938, p 6). McLuhan knew of this earlier study of Mumford even if he does not refer to it in his chapter 'Roads and Paper Routes.' See references in *The Mechanical Bride*, McLuhan (1951, pp 33-34, 61 & 76).

8. Geddes (1945, p 84).

9. Geddes (1945, pp 10-12 (body politic), p 85 (interdisciplinary approach)).

10. Cf. Geddes (1945, pp 10-12), compare to McLuhan (2008, p 107).

11. Cf. McLuhan, (2008, pp 102, 100 & 108-109). Compare chapters on 'The Population Map and Conurbations' and 'Travel and Citizenship' in Geddes (1949, pp 9-21 & 59-60).

of the 1950s. At this time McLuhan was part of the interdisciplinary Ford Foundation seminar on 'Culture and Communication,' which was also attended by the town planner Jaqueline Tyrwhitt.¹² Tyrwhitt had re-edited and released in 1949 the out of print work *Cities in Evolution* from Geddes together with materials from his 'CITIES EXHIBITION' of 1914-15. This volume gathers topics and concepts employed by McLuhan. Also found here is an impressive description of a conurbation with its lines of transportation and communication around 1900, which characterizes the city as organism. Geddes writes regarding the population map of south-east England: "Instead of the old lines of division we have new lines of union: the very word 'LINES' nowadays most readily suggesting the railways, which are the throbbing arteries, the roaring pulses of the intensely living whole; or again, suggesting the telegraph wires running beside them, so many nerves each carrying impulses of ideas and action either way."¹³ The biologist recognizes in the urban formation first and foremost the pulsating body of biology. The ways of transport and communication occur to him as the arteries and the nerves of the human body that operate in the circulatory system. Again, the transportation routes of the city are conceived as extensions of the organic functions of the human body, perfectly assimilating with McLuhan's conception of media from the philosophy of technology. Crucial for the particular problem of the sentence of investigation, here, is the transformation of lines of division between inhabited areas into lines of union of the population map. Population and city expanded at such a scale that the old borders disappear; new technologies remove former lines of division. The word 'lines' for Geddes refers directly to the lines of transportation and communication of the conurbation. At this point of Geddes's presentation, the traffic of material transport and the traffic of information become indistinguishable in their forms (the line) and ramifications (the union). Thus, for McLuhan's generalizing sentence for a theory of mediality, this discourse of transport provides alongside Mumford's circular model of transmission a tendency to discard differences between forms of transport and forms of communication.¹⁴

12. Cf. Darroch (2008) and Darroch & Marchessault (2008). Micheal Darroch and Janine Marchessault examined correspondence and collaboration between McLuhan und Tyrwhitt to elaborate on the connections of architectural theory and the development of media theory in Canada. They describe Tyrwhitt as an important agent for the interdisciplinary application of concepts from the historiography of architecture and material culture as presented in Giedion's works. Tyrwhitt was editor of Giedion's later writings and also edited Geddes's works. I would like to supplement this outlook on the development of media theory here by the evidence of interrelations between Geddes's and McLuhan's writings, certainly stirred by Tyrwhitt.

13. Geddes (1949, p 10).

14. Mumford does not make any difference between transport and communication either in looking at communication lines. In his account on the medieval street in *The Culture of Cities*, transport and communication revert into one another: "In early medieval city, the street was a line of communication rather than a means of transportation: the unpaved streets were more like the countryard of a farm." Mumford (1938, p 56). It is this lack of distinction between transport and communication that sets apart the research of Harold Adams Innis from the significant discourse here. The early studies of Innis in economic history dwell on transportation routes and their characteristics to explain the development of economy. However, those routes are never associated with communication. Innis's later studies on communication media and their decisive role in the development of civilization in turn never present means of communication as interchangeable with means of transportation. In *Empire and Communications* describes the properties and conditions of means of communication, such as clay, papyrus or the alphabet as pivotal in the development of empires. He hardly treats any road, the horse or the carriage in history. 'Communications,' for Innis, depends on the material conditions of information media deployed in an empire. Cf. Innis (1995) and Innis (2000).

The seminal 1941 study of architectural and art history *Space, Time and Architecture* by Giedion assimilates with this discourse.¹⁵ In his consideration of the grand boulevards, which were constructed by Georges-Eugène Haussmann in Paris in the nineteenth century, Giedion exchanges the lines of communication for the lines of transportation: "In taking the city as a technical problem, Haussmann came to view it primarily as a problem in traffic and transportation (...). His contemporaries (...) could not understand Haussmann's passion for new lines of communication through the center of the city (...)."¹⁶ The designation of the street has been replaced by the term '*LINES OF COMMUNICATION.*'

Moreover, *Time, Space and Architecture* points out, how differences occur in cultural transmission. Giedion supplements the circular model of transference in time from Mumford's history of civilization by phenomena of transference in space. He indicates how the same technical facility in two different places gives way to diverse cultures, and that following a transposition from one place to the other: "American industry became robust (...) around 1850. Naturally, European inventions were adopted and introduced into this country. Divergences appear at the points where problems inherent in a totally different situation demanded new solutions."¹⁷ The difference between Europe and America was located in the division of resources in the industrial age. While Europe had a lot of skilled workers in the crafts yet few material resources, America had a lack of skilled workers and a plethora of materials. The complicated crafts, cheap in Europe, became industrialized in America by way of new inventions and new methods of organization. As a result, industrial products helped create new forms of architecture and art in America detached from tradition or conventional crafts.¹⁸ Here, a principal difference arises by the transposition of one thing from one place to the next, even if the displaced thing itself remains the same.

All in all, for the sentence "Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message," the discourse of civilization provides on the one hand a notion of transposition that deviates from lineal conceptions in its multi-dimensional effects on the organization of space and society. The transposition of one thing that might take place only in one direction still has an effect in multiple directions and also clearly affects what started the process. On the other hand, the discourse allows for an exchange between traffic routes and lines of communication, something tacitly assumed by McLuhan's sentence. Thus, forms of transport are brought to bear on sender, receiver and message of the lineal model of communication.

15. For McLuhan's examination of works of Giedion see also (2008) and Darroch & Marchessault (2008). Darroch and Marchessault indicate the influence of Giedion's method of anonymous history on the interdisciplinary seminar 'Culture and Communication' and its magazine *Explorations*. Their observations are supplemented here by connections that can be made in the understanding of difference and cultural change, in both Giedion's and McLuhan's writings. See footnote.

16. Giedion (1941, p 497).

17. Giedion, (1941, p 267).

18. Cf. Giedion (1941, pp 266-268). McLuhan takes over this particular relation described by Giedion for one of his first articles in *Explorations*. He recognizes that the transference of the printed page of the text book from the old to the new world took place without the practices of the manuscript and conversation in the classroom. Thus the principle of the printed page without its accompanying traditional practices was the matrix of American technology that engendered new arts and new architecture. This process is conceived as the "the trauma of cultural translation.". McLuhan (1954).

3. "...but translates and transforms..."

The effect of means of transport on the communication model is substantiated further by the verbs 'translate' of 'transform.' I propose comprehending these verbs not only in terms of the discourse and civilization explained above. 'To translate' and 'to transform' are concepts that are applied in various parts of *Understanding Media* and that introduce another field of knowledge necessary for understanding media.

For a better grasp of the phrase "but translates and transforms" in the sentence of interest here, I would like to draw on some general remarks from the chapter 'Media as Translators,' also found in *Understanding Media*. At the beginning of this chapter McLuhan says: "That technologies are ways of translating one kind of knowledge into another mode has been expressed by Lyman Bryson in the phrase 'technology is explicitness.' Translation is thus a 'spelling out' of forms of knowing. What we call 'mechanization' is a translation of nature, and of our own natures, into amplified and specialized forms."¹⁹ According to McLuhan, technologies translate certain features of nature and of man, but also forms of knowledge into specialized technical forms. In this sense, technologies make explicit parts of our environment or our knowledge. They spell out individual characteristics.

This sort of translating as 'spelling out' can be recognized in a theory and practice of translation, which was developed and applied by the linguists and literary critics Charles Kay Ogden and Ivor Armstrong Richards in their theory of meaning of language. As an exchange student in Cambridge during the 1930s, McLuhan encountered these reflections on language which were to mold his observations for a theory of media in his later career.

In 1923, Ogden and Richards released their seminal book *The Meaning of Meaning*, in which they investigate the fundamental principles of language in producing meaning.²⁰ This research work engendered Ogden's work on a universal language, called Basic English. Basic English is a simplified English vocabulary, which was invented "for purposes of reading, writing, or translation" around 1930.²¹ It consists of a significantly reduced English vocabulary of barely 850 words and accordingly shortened grammatical rules.²² This enormous reduction of vocabulary was based on linguistic theory's explanation that most ordinary words are a kind of shorthand for other words. Words are able to replace one another and thus to represent facts that other words in the same place would designate more or less exactly. This tendency towards shorthand is particularly clear in the verbs of Standard English. Verbs are abbreviations for an action and a direction, and so they can be replaced by one simple operation word plus a direction word. For example, the verb 'enter' could be replaced by 'go into.' In Basic English the number of verbs is thus reduced to only ten so called operators,²³ which

19. McLuhan (2008, p 62).

20. Cf. Ogden & Richards (1946). *The Meaning of Meaning* argues for a relational model of signs and language. Meaning arises out of a reference structure knit together by signs, things referred to and the other signs in an utterance. From this, Richards developed the context theoreme of language and Ogden worked out the Basic English vocabulary.

21. Ogden (1930, p 6).

22. Because of these features Basic English was to be acquired easily within a few weeks. The hope for a universal language for everybody appeared to become fact. Cf. Ogden (1968, p 14, 36 & 48).

23. Cf. Ogden (1930, pp 52-60). See p 53: "The operators are ten in number, if *be*, *have* and *do* are treated for convenience with the two auxiliaries *may* and *will*. In addition to these there are three analogical extras *say*, *see* and *send*— included in the vocabulary because they lend facility to communication and provide a useful link between the operators and verb-system proper."

can represent all the verbs of Standard English as soon as combined with one of the 21 directives. Essential to the work of the translator is the deployment of the principle of substitution of language in Basic English. The few words from the Basic list eliminate confusing stylistic contractions.²⁴ Hence, the complex meanings of ordinary words can be spelled out, as it were, in sequences of simple Basic words.

Ogden's collaborator Richards availed himself repeatedly of Basic English for his theory of literature and interpretation as well as for his classes. In his courses on practical criticism, research about the modes of operation of language was essential. The meaning of words, phrases and text passages were central in Richards's experimental format of learning, which asked for comments on anonymous poetry and text passages that would in turn be commented on by Richards at the next session.²⁵ In this way, Richards wanted to examine principles of interpretation and combine them with appropriate language tenets for his classes. As Basic English was invented through the use of certain laws of language, the deployment of Basic English for instruction could „elucidate and display – not as theory, but automatically and inevitably in practice“²⁶ these fundamental conventions. In the published documentation and evaluation *Interpretation in Teaching* of his course 'PRACTICAL CRITICISM, PROSE' of 1935, which McLuhan attended,²⁷ Richards gives an insight into this automatic and practical way of both recognition and presentation. For example, Richards applies Basic English for a short exercise in translation to the word 'UNTRANSLATABLE.' The Basic English version of the word manifests logical contradictions and consequences of all translation: "'Untranslatable,' in Basic English, reads, 'not able to be put in other words with the same effect.'"²⁸ This exercise in translation provides an access point to McLuhan's notion of translation. The few Basic English words available compel the translator to execute side by side in a sequence what is comprised in only one or two words of conventional vocabulary. The sequence of simple words for only one complex word equals a spelling out of meaning of the ordinary word. The exercise is thus an explication.

Moreover, Richards's exercises in Basic English provide clarification for the problem of specialisation and amplification that any translation would engender, according to McLuhan. The lesson learned from translating 'untranslatable' is after all the meaning of the Basic message: it is not possible to state something in other words with the same effect. "No two things can be the same in all respects; unless they are different also they become not two but one," Richards comments.²⁹ Every translation, therefore, will always be only partial. And partial translations will always put emphasis on one part of the meaning of the original wording. Hence, other parts of the meaning are discarded. It is exactly this relation that McLuhan explains in his chapter about 'Media as Translators.' The text begins by observing the loss of stutter when stutterers talk in a foreign tongue.³⁰ The translation into foreign language thus explicates and amplifies certain characteristics of the nature of the stutterer: he gains

24. Cf. Ogden (1930, p 53).

25. For a description of the experimental form and the unconventional, scandalous results, see Gordon (1997, p 48).

26. Richards (1938, p 203).

27. Cf. Richards (1938, p 23) and McLuhan (1987, p 58).

28. Richards (1938, p 136).

29. Richards (1938, p 136).

30. Cf. McLuhan (2008, p 62).

in explicitness and he loses his stutter. The spelling out of all technologies, which is described by McLuhan, takes place literally. An explicit pronunciation replaces the fragmented or compressed sounds, resulting in a preferably exact sound representation of the phonetic alphabet.

The chapter 'Media as Translators' conceives of the spoken word, the mechanisation and the electrical media as translating forms of knowledge, experience and material into new, amplified and specialized forms.³¹ Thus the effects of spelling out and amplifying of the practice of translation derived from Ogden's and Richards's theory of language are conferred upon the effects of any technology. Then, words, tools and information systems can be considered as technologies based on the same fundamental principle: "The power of technology as dependent on alternately grasping and letting go in order to enlarge the scope of action has been observed as the power of higher arboreal apes as compared with those that are on the ground."³² The literal grasping and letting go of branches, which higher apes perform in trees to enlarge their area of operation, is paralleled here to the gain of explicitness and the loss of stutter during translation into a foreign language, a sort of grasping and letting go of words and sounds, figuratively spoken. The "grasping and letting go" of the alternating movement or of the processes of explicitness in translation therefore prove to be the basic principle of all technologies that results in the effect of an enlarged scope of action. For this reason, the epistemology of the practice of translation of Basic English can also be related directly to the thesis of media as extensions of organs and senses, not to say the theories of translation and of organic projection by virtue of their equal effects are readily translated into one another in the text of McLuhan.³³

The historical epistemology of translation offers a specification of the kind of transformation taking place in transmission processes by the term 'translates': "Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message." Whereas the discourse of transport discovered and described the transformation mainly in the surrounding structure of the means of transportation, now the discourse of translation from linguistic theory concerns the message itself, the item translated and displaced. The message will be another one in another language or in other words. It will be more explicit and accordingly amplified, which means in another respect that it will be less intelligible. A fundamental difference applies to all forms of transference. On account of this historical epistemology not only the sender and the receiver are transformed as Mumford, Geddes and Giedion pointed out, but rather the message itself has to be taken as transformed, translated.

4. "...the sender, the receiver, and the message."

Knowledge about forms of transport in the history of civilization and knowledge about linguistic processes of translation are finally interconnected with the instances of the conven-

31 Cf. McLuhan (2008, pp 62-64).

32 McLuhan (2008, p 62).

33 After all, " and " are often used synonymously in *Understanding Media*. See: "Having extended or translated our central nervous system..." or: "It is this extension and translation of the human organs into the village model..." McLuhan (2008, p 67 & 107).

tional model of communication of the 1950s and 1960s. McLuhan breaks with any idea of a lineal transaction in his peculiar alignment of the elements in his sentence. It is not a matter of the line of sender-message-receiver. It is a matter of a differential observation of sender, receiver and message in the process of communication.

McLuhan outlines this perspective explicitly in his *Report on Project in Understanding New Media* for the National Association of Educational Broadcasters in 1960, referring to the research of communication conducted by Harold Dwight Lasswell: "Correction for Lasswell formula – not who is speaking to whom, but what is speaking to whom. Lasswell ignores the media; but obviously if a person is speaking into a P.A. System or into a radio microphone, etc., the who and the what are profoundly transformed."³⁴ The sender is completely changed as soon as attention is focused on transference and channel. The receiver is profoundly transformed depending on the kind of medial transmission he is exposed to. Eventually, as in the case of the stutterer, the message is modified, the 'what' varies. The consideration of concepts of transaction brought forth by historians of civilization as well as the training of McLuhan in the linguistically grounded literary theory of Cambridge lead him astray of the lineal formula and its assumption that the elements could remain the same in the process of transference.³⁵

This notion of communication affects the central concept of self-identity of occidental philosophy.³⁶ Sender and receiver incessantly change their identities in the process of transmission which must always move in two ways, at least. The simple message that could be assigned unequivocally to a definite sender loses its simple, unequivocal and supposedly predictable response of a definite receiver, while the simple sense, the self-identity of the message, reveals itself as ambiguous. It is this interchanging of identities that media process in *Understanding Media*. The chapter 'Media as Translators' makes clear that media translate one kind of knowledge into another mode, one experience into new forms and one kind of material form into another.³⁷ In doing so, media conduct the transition from one philosophical category to the next and back again.

5. Conclusion: McLuhan as translator

The sentence "Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message," clearly attacks the lineal model of communication research. Media studies differs significantly from communication studies in its multi-dimensional outlook, its process-oriented observations and its circular conception of transference. McLuhan expresses this difference here by short-circuiting a discourse of transport to a knowl-

34 McLuhan (2003, p 510).

35 Of course, this turning away from the conventional notion was a collective one. See Darroch & Marchessault (2008). See also Schüttpelz (2002 & 2006) in this matter. Schüttpelz explains the collective aversion by the dichotomy of orality and literacy that guided research of the Toronto school during the beginning of media studies. In contrast to the isomorphic thoughts in communication studies this dichotomy introduces a fundamental difference between media and cultures. The research of orality can be traced back to the Sapir-Whorf-hypothesis drawn upon in the Toronto group. This field of cultural anthropology would be another research field to be followed for an historical epistemology of *Understanding Media*.

36 The philosophical consequences of this notion are elaborated in Serres (1980).

37 Cf. McLuhan (2008, pp 62-64).

edge of translation, applying it to the elements of the model of communication.

It is exactly this application that engenders the new academic object of study – ‘media’ – in *Understanding Media*. By constantly translating fields of knowledge and their objects into other fields of knowledge and their objects, McLuhan accomplishes a work of comparison among exclusive categories. By ‘media’ he appoints a new category, one quasi-superior to all established categories. The ‘media’ of *Understanding Media* differ from all existing categories by carrying the difference that McLuhan described for all transactions, material or informational.

After all, a notable feature occurs in McLuhan’s work of translation of divergent disciplines to found a new science and its object. McLuhan has to adjourn the effect of spelling out of all translation, or the process itself and the difference cannot remain in play. The spelled out is the effect of ‘media’, the result of translation, which necessarily erases the difference at the base of the process of mediality. For a description of this process the spelling out needs to be accompanied by re-translation or re-compression. McLuhan accomplishes this task by applying a particular linguistic strategy, which holds the translation in a realm of uncertainty. It is the method of the metaphor. In a constant alternation of literal and figurative meaning in *Understanding Media* the assignment of meaning remains deferred, the process emphasized. This can be observed in the sentence of investigation, where forms of transport have an impact on the elements of communication, the message equals a carried good, and a transposition is simultaneously a translation and a transformation.³⁸ The term ‘translate’ appears mostly between two technical complexes, two stages, two spheres or two times in McLuhan’s *WRITINGS*: “Each form of transport not only carries, but translates and transforms the sender, the receiver, and the message.” The appropriation of knowledge about processes of transference for a theory of media by McLuhan takes place in a mode of metaphorical reading and representation that translates the discourse of transport and its theory of space to the discourse of communication theory and its model. Transportation is not replaced by communication; both appear in the sentence of a theory of mediality before and after the term ‘translates.’ Translation’s outcome is not stated explicitly. The medial translation is an undetermined transference – it remains metaphorical.

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Caribbean Pirates or Robin Hood's crowd? Perceptions of Illegal Behaviors and warning signals in Internet seas and forests comparing American and Italian adolescents' perspective

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Introduction

A 2010 survey by Pew Internet and American Life Project shows that “nearly two-thirds of all Internet users – 65% – have paid to download or access some kind of online content from the Internet, ranging from music to games to news articles to adult material. Music, software, and apps are the most popular content that Internet users have paid to access or download, although the range of paid online content is quite varied and widespread.” (Jansen, 2010).

Media agenda, common sense and common use of Internet say that sharing and downloading files and programs, disregarding copyright rules and protection laws, is not sanctioned, and is not actually considered an offence or a crime. For example, the homepage of the 2006 Conference on Media Piracy and Intellectual Property in South East Asia (<http://www.asian-edition.org/>), explains:

“Many Filipinos still remember the “Asian Edition” - a scheme during the Marcos years, when American textbooks were reprinted locally and without paying royalties to the original publishers. Now, “Asian Edition” serves as title for a conference that will look at the phenomenon of media piracy in South East Asia today. Music, movie and software piracy is one of the most prominent media issues of the digital millennium. In the Philippines it has started a whole underground economy and currently seems to change the way movies and other media products are distributed and consumed products here and in other South East Asian countries.”

Nowadays, when we think about Internet or “cyberworld,” we represent something that is very much like our earthly world. It has highways (the World Wide Web), businesses (e-commerce), homes (homepages), schools, colleges, universities (distance learning, digital libraries, students' communities), and it has people who travel in it (by way of the Internet, mobile Internet, social networks).

Sonk et al. (2011) realized a survey by asking 25,000 European 9-16 year old internet users about their online activities, skills and self-efficacy. They concluded that ‘skills are unequal. Assuming it takes skill to undertake diverse online activities and that activities encourage

the development of further skills, we conclude that younger children, girls and those from lower SES homes are gaining fewer skills (because they do less online, for various possible reasons)'.

The EU Kids Online research group classified digital skills as instrumental (or basic or functional), informational (understanding, navigation, evaluation) and social (communication, self-disclosure, privacy). The eight skills included in the EU Kids Online survey focused on instrumental (mainly safety-related) and informational skills, and were asked of 11-16 year olds. To realize the empirical part of this project we maintained the same age population but we focused on two countries, Italy and US, and in particular on areas with similar economic and demographic features, the metropolitan area of Padua and Bologna in Italy and the borough of Brooklyn in the US.

Among these people, some commit deviant acts, but there are no police, highway patrol officers, and administrators of discipline to stop them, although authorities are beginning to pursue actively such criminals (Power 2000).

Moreover, in the Global Village boundaries are vanishing both among countries and between legal/illegal domains and there are not only pirates and deviants but also people playing Robin Hood as well as people unaware of these issues. From a cognitive point of view getting lost between online and offline framework is not easy (Drusian, 2010, *ibidem*, p. 63). According to Goffman (1974) people are always able to process information about the frame. Frames organize the experiences and guide action for the individual. According to Drusian (2010, *ivi*) getting lost is not easy also from a social point of view, because interaction rituals (Goffman 1967) to save 'face' and self are different in any frame and frame borders are easy to recognize. Drusian claims also that when we switch on any device to go online we clearly cross one of this borders and we have all the information we need to recognize this change of frame (2010, *ivi*). She acknowledges that sometimes youngster could lose the sense of time, but they recognize the frame. Are we sure? Most of the time we do not need to switch on anything to go online and our devices are always on. Moreover digital natives are socialized in a different way and among their agencies we need to include probably Internet and social media, especially considering sexual education. Both when Goffman (1974) distinguished between social framework and natural framework and when Boden & Molotch (1994) wrote about proximity and mobility Internet was not widespread and part of everyday life as it is now.

There are physiological or better cognitive reasons why it is difficult to imagine the ability to recognize signals of changing frame in this actual multitasking, multimedia and 'multi-frameworks' present. As highlighted for example in Broadbent's 'filter theory' (1958) when multiple messages arrive at one time, how can a listener separate out the meaningful ones from those that are non-meaningful? Broadbent's research on the problem, which began with studies of the effects of noise and of masking on speech soon made clear that the difficulties of perception were not simply peripheral but were central as well. As example he took ship operators that sometimes appeared to be overloaded with information rather than hindered by purely sensory factors. Using the (at Broadbent time) new technology of tape recording, separate messages could be delivered to each ear of a listener. Most ways of separating the messages spatially, even presenting stereo recordings with a message in each of the two channels, helped performance. Broadbent concluded that a selective mechanism was at work to reduce the information flow through a limited capacity perceiver. Changing framework and thinking about our topic, how could be sure that the same ability had been developed

naturally by digital natives in an environment that is both virtual but at the same time full of perceptible stimuli?

The question is particularly actual and interesting and to face the problem the research group decided to be multidisciplinary and to discuss both qualitative and quantitative data. The disciplines we involved face different aspects of the problem: experimental cognitive psychology permit to evaluate limits and abilities to distinguish between relevant and irrelevant content in any single participant, cultural anthropology permit to interpret the evolution of skills and attitudes and finally sociology and philosophy are necessary to not lose the sense of whole and to associate quantitative efforts with the thick description given by qualitative data.

Our research project focus on adolescents' representation of legal/illegal activities, roles, use and exchanging or downloading behaviors on the Internet. In particular, to supplement previous surveys realized both by European and American researchers we will investigate the level of knowledge of rules and laws, the general representation of legal and illegal actions and, also, the ability to detect signals, alerts and alarms in Internet context. Capitalizing on previous surveys focused on Internet use among adolescents, founded by European Community or Academic Research Centers a multidisciplinary research group, composed by sociologists, psychologists, and philosophers is evaluating available data and is preparing an online survey to deepen our knowledge of legality representation and detection of legality and illegality signals among adolescents.

Work in progress - survey method

Sample - At least 50 American and 50 Italian adolescents (11-16 years old) recruited in online social networks using a snowball method in February 2011.

Pilot online survey - Besides the five sections used by, for instance, Daniel (2005), i.e. 1) teens demographic characteristics 2) internet-related activities 3) teens perceptions of deviant behavior when using the Internet 4) teens perception of their peers deviant behavior when using the Internet 5) students ability to use computers, mobile devices and the Internet, we added specific questions to verify rule knowledge, level of agreement with known rules, and the ability to detect signals that could help correct an unintentional illegal or behavior or to avoid such risks.

We will also distinguish between cases in which Internet users violate national, local, state, and/or federal laws (such as, a violation of the intended use of the Internet or computer, and/or its intended purpose and goal, such as obscene activities, defined as entering a pornography website or selling pornography goods on the Internet; using the Internet or computer to violate copyrights laws or other contracts such as institutional or third party copyright, license agreements and other contracts, intentionally disrupting the Internet traffic by spreading a computer virus, spreading rumors about another person on the Internet, intimidating and frightening another person on the Internet) and cases in which there is an inappropriate use.

Expected results

We expect a strong inability in detecting warning signals and a strong ability in avoiding controls and finally correlations between actual behavior and perception of legality/illegality, appropriateness/inappropriateness and fairness/unfairness (all measured on Likert scales).

We may not find cultural differences in Internet use between Americans and Italians, or in awareness of what is legal and illegal, but we may find that awareness is insignificant for actual behavior. If cultural differences will emerge, we will continue this research investigating correlations between our target variables and cultural factors such as geographical position, socio-economic capital, national law, and education.

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Marshall McLuhan: A prophet before his global mirror

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1. Introduction

In this article I'll try to guess where some of the thoughts that make up the McLuhan mosaic could have come from, along with some of the relevant influences which I consider essential to explain his achievements. Although I'll be centring on some well-known aspects of his theories, I won't renounce daring to send some 'probes' into different coordinates to obtain more of a global, realistic vision, or 3D effect, as McLuhan taught many of us to try doing. Actually, all I'm going to do is peep through a crack in a mirror to try to see the real world that is hidden behind it. It won't be enough though, since we'll still be viewing in two restricting dimensions. We need to see reality in depth, the stereoscopic vision from at least two different points of view that can both be true at the same time (like two quantum particles that coexist in different universes of significance). This would mean having to end up totally breaking the mirror that is returning the cosy and perhaps beloved image of our everyday world. And what is it to see in depth? When we break that particular mirror, we will most likely enter that multi-dimensional world in which McLuhan lived for many of his hours. We will then realize that the mirror itself was not really reflecting the true image, but was precisely what was stopping us from seeing the reality beyond, like the wall it was hanging from.

2. Breaking the mirror

I can't imagine the astonishment that McLuhan produced before his audience, when he unabashedly rejected his most evident past by indicating that it was meaningless (ed. Stearn 1967, p. XVII):

*Goldman: How is it, Professor McLuhan, that you should
Be so concerned with media? Here you are the
Son of Baptist parents, convert to Catholicism,
A Canadian student of English literature, formerly
An engineering student and now.. .*

McLuhan: Oh, don't bother about that data.

Goldman: Why?

McLuhan: It's all wrong! And, in any case, quite unnecessary.

As we can see, back in 1966 McLuhan was already showing his audience how one has to go about 'breaking the mirror'. His first rule was to start at square one and just think seriously about what questions were to be asked and what answers could be given, without any preconceptions about the matter under discussion or the person being interrogated. Adorno gives us (as Hegel did before), a definition in his book *Terminología Filosófica I* about what it is to think profoundly, which I think suits perfectly McLuhan's way of thinking: Profundity is not to appeal to essences but rather is only what one thinks unyieldingly, without consideration, without obligations or commitments. (Adorno 1976, pp. 104-105)

Of course, with his way of thinking, McLuhan had his detractors in the academic circles. Many were the times that he was accused of not having enough depth in his discourse or train of thought. But in his search for answers, he looked for a concept of knowledge that wasn't conditioned by a reality given to us beforehand, nor one that was strictly identifiable; he thus went to an anti-systemic methodology, in short, to a 'negative dialectics' that goes against the pre-established schemes that identify knowledge with immovable patterns which give a general validity to the results of our thoughts.

In negative dialectics, we find as the primordial centre the possibility of considering different perspectives at the same time. Whoever uses this knows beforehand that whatever group of opinions or result reached should be considered provisional, since a definite result then closes the possibility of improving on the conclusions, thereby putting an end to the discussion. (Stamps 1995)

In fact, a fundamental characteristic of the negative dialectical method is to constantly ask what aspects of the topic in question have been ignored or not considered important. This was the question that McLuhan always asked in his chats with his students. What is it that we do not realize at this precise moment?

McLuhan as a gestaltic analyst was also interested in researching the unperceivable and fundamental relationships that get established in the complex sphere of global communication and that are generated by the simple fact of wanting to transmit any kind of content.

McLuhan's motivation to use the gestalt approach was probably due to his literary background from Cambridge acquired through his professors I.A. Richards, F.R. Leavis and M. Forbes, all of whom were exponents of the movement called New Criticism which had its roots in Kant's philosophy and also had the merit of starting a change of approach towards modernism that with time turned into a display of tendencies in literary criticism that would connect us directly with today's postmodern analysis of reality.

The New Criticism was the bond between I.A. Richards and his student McLuhan, and led both of them, though separately, to pioneer the new approach in the field of communication. So important was their work, that even the Encyclopaedia Britannica dedicated the entire introduction of the section on communication exclusively to the concepts established by both authors in this matter as a starting point for further studies in the field.

What were then the influences of the New Criticism that acted so decisively on the development of McLuhan's theories of the media?

If we look retrospectively it wouldn't be difficult to understand how our author used all his critical literary formation to set his objectives towards the study of the media. If words (the content of literature), weren't any more than an excuse to reach the desired effect in a determined context, quite often gestaltic, unconscious or subliminal, the same could be true with other media or machines like electricity, the mobile phone or 3D television nowadays.

McLuhan received such an intellectual push from the New Criticism paradigm in Cambridge,

that just as an example I would like to cite the following words from our author in a letter to the anthropologist Margaret Mead (February 2, 1973), referring to a congress of scientists and intellectuals in Delos: 'The participants of all such gatherings seek reassurance for their convictions rather than new awareness of their inadequacy. My own concern is with the exploration of ignorance rather than the shoring-up of existing knowledge.' (ed. Molinaro 1987, p. 464)

3. Old images reflected in the broken pieces

As we move on to the crux of this paper, we'll contemplate one of the most personal and hidden aspects of McLuhan, his concern with religious matters.

In McLuhan's approach to the Catholic religion, there were some aspects that exercised a considerable influence over him. I'd like to expound on the initial relationship of this influence, to which not many critics seem to have attributed the importance that it probably deserves with regard to his discoveries, but is what I consider could be the stem cell that along with many other early literary influences (authors like Chesterton and McLuhan's thesis on Nashe) could have been the catalyst that brought McLuhan to the academic path dedicated to the study of the media, and also to the declaration of his arch-famous statement 'The medium is the message.' Since declaring 'the medium is the message' could be equivalent to saying 'Marshall McLuhan and his approach', here is where my interest begins in investigating just what the influences could be that sparked the inspiration for his most well-known theories.

If, in fact, the medium is the message, McLuhan was receiving actively and passively, consciously and subconsciously, in his crisis of faith and catechist process of conversion to Catholicism and in later years of daily sermons, hundreds of messages with texts and religious thoughts similar to the following: Jesus Christ is the Messenger of God the Father; He is the One who was sent by God; the Son of God that comes to bring us the Message of the Father, etc. All these are variations of biblical statements that indicate that in the Christian religion, God has used Christ as a means of transmitting His Gospel, His Divine Message. The idea that Jesus is a Medium of God, the best and the most perfect that he could have ever chosen, stands clearly evident for the Christian in the daily liturgy. On the other hand, Jesus Christ at the same time is proclaimed as the Word of the Father, the Verb of God, the Message of God. All of these are different perceptions of the word 'message'.

We can also find in the New Testament: 'The Father and I [Christ] are the same thing' (Jo.10,28); this concept of the hypostatic union together with the locutions expressed in the above paragraph lead us to unite subconsciously without much difficulty and in a way of a syllogism that somehow Jesus is the medium, the messenger, the message, a man and also God. McLuhan could have obtained this very same equation: Jesus Christ = God = Medium = Message, but since the academic world at that time was still resonating with Heidegger's influence and Nietzsche's famous statement 'God is dead', McLuhan could have just kept the second part of the above equation with this simplification: 'medium = message' as a less controversial matter of study. That is to say, that if in the case of God it is true that the medium is the message, this could also be true to some extent in the universe of His creation and also in the rest of the living beings, within man who was created in God's image, and in the media that man has created as techno-evolutionary extensions or prolongations of himself. Eric McLuhan tells us about how Marshall interpreted Nietzsche in an annotation in his journal (ed. 1999, p. xxvi):

He pondered the popular slogan 'God is dead' when it was current and observed in his journal, 'Suddenly really got the "God is dead" message. They mean that the incarnation was His death because He became visible. Now in the non-visual time, the visual alienates them' (25 July 1967)

The field for experimentation of McLuhan's concept of the medium conditioning the message is overwhelming whether considered from a philosophical point of view, phylogenesis, or theories of evolution where we clearly perceive that indeed the medium conditions the message. This is to say that the evolutionary direction or message of species from micro organisms to the human being is also accumulated in man's ontogenical or embrionic development. Man carries written in his genes, all the phylogenetic mitochondrial code, his own history, millennium after millennium. Throughout the ages, the enormous amount of external influences within our environment has been forcing us unawares into a constant struggle to engrave and generate messages genetically directed towards adapting to our rapidly changing surroundings of the medium.

What has been implied in the above, is that the message is intrinsically tied to the medium. If the medium is constantly changing, then so is the message, which causes us to grow in such a way as to better understand and grasp the meaning of our condition. It doesn't make sense to think of the message as a closed, determinist system, as something finished, reported and given, in which case its only object would be the replication or copy of itself ad infinitum. The message of evolution is an open system, meaning a constant growth in the understanding of ourselves without being subject to the passage of time. There is no hurry. We have all of infinity to grow and develop and to keep up with the ever-changing and evolving message of our life's essence. A. J. Colom (1979, p. 39) tells us that we can conceive our environmental medium as the collection of all the objects that could influence the operating capacity of a system. Thus between the medium and the system there is a process or at least an attempt at continual adaptation, since a change in the environment would mean a variation in the system and vice versa.

McLuhan kept giving different dimensions of significance to his aphorism 'the medium is the message' till he constructed a complex mosaic of thoughts. 'On July 30, 1959, while visiting Alan Thomas's home in Vancouver, Marshall had first declared rhetorically: "The medium is the message." Marshall recognized this big breakthrough as the form of many fresh discoveries ...' (Nevitt 1994, p. 26).). This thought was a tool that he applied little by little to his particular hermeneutical approach to the study of the media. This aphorism meant globally that all the new systems of living, thinking and understanding reality along with their multiple circumstances and their inherent traits or characteristics had derived, in short, from the unperceivable effects of such media.

'The medium is the message' is a phrase with an evolutionary nuance for media in evolution and for a personality in constant modification like McLuhan's. He was always ready to change his point of view or any theories that could hold him back in his pursuit of new ideas. Not even death would stop him from evolving (if that were possible) as Carleton Williams reveals (Nevitte 1994, p. 289) when he tells us:

On the last night of 1980, Marshall McLuhan left history to enter eternity. In his end is a new beginning.

In sharing our playful Irish tradition, I once asked Marshall: 'If, on some fine day, you wake up and find out you're dead, what would you do?' He promptly replied:

'Plunge Ahead, Keep Plunging ahead!'

As McLuhan progressed in his investigations he found new relationships that fit in with his 'medium-message' idea. His famous phrase was like a tool that he kept persistently applying not only to his study of the media but also to his personal and interior dialectics. Thus his phrase also implies a way of thinking and of intuiting reality. McLuhan often used the approach of the French philosopher Henri-Louis Bergson, in which intuition played a more important role in investigation and understanding reality than rationalism. This is why McLuhan called 'percept' any 'concept' acquired through perception and intuition, rather than strictly logical reasoning.

But Bergson also appealed to McLuhan in other ways. According to Bergson (ed. Deleuze 1977, p. 150), only in mysticism could the contemporary human being find a 'supplement for the soul' that would counteract the increasing influence of mechanicism (meaning that when mechanics are brought to an extreme, they could turn against mysticism). Bergson goes on to say that mysticism has the effect of placing us in an intuitive contact with the force of life, with God himself. He writes that the mystical love of humanity coincides with the love of God for His creation, a love that has done all and that would give to whomever would know how to ask, the very secret of our creation. Under His direction, the force or impulse of life would be given to the privileged ones to transmit to the whole of humanity.

Ironically enough, McLuhan was not a great fan of technical media himself or of 'gadgets' in general. He would always stop to meditate in a nearby church on the way to where he was teaching at the time. Couldn't he have been trying to approach that mystic state, which Bergson suggested, in order to offset the effect of technology and retrieve a more spiritual communion with the 'message'?

Carleton Williams tells us an anecdote that reinforces this approach of McLuhan towards mysticism:

Marshall was always fascinated by dialogue but at one time he was almost obsessed with the idea, insisting it was at the root of all thought and imagination.

I contested this saying, 'How can you of all people speak of dialogue, when so much of what you accomplish comes from your thinking-aloud monologues and from your quiet times, when no one is near you?'

'Ah, but Carl,' he replied gently, 'one is always in dialogue with God.'
(Nevitt 1994, p. 288)

However, McLuhan told anthropologist Edward T. Hall, whose work he admired, that 'I deliberately keep Christianity out of all these discussions lest perception be diverted from structural processes by doctrinal sectarian passions... God is not accessible through the senses, even though He is expressible through analogical percepts.' (Gordon 1997, p. 239)

4. The discovery

Going back to the origin of his famous statement, some testimonies like the one of Carleton Williams continued to confirm that his declaration of the aphorism was just pure chance. Williams tells us:

I was present on the occasion when Marshall, leading a discussion on TV, standing beside the fireplace in the room the seminar used in St. Mike's, one arm on the mantelpiece and thoughtfully gesturing with the other, first said rather pensively, "Well, of course, really, the medium is the message." No blinding lights flashed, no one shouted "Eureka!" but everyone's attention was caught by this unusual if casually-made remark. ...The seminar then, was the launching pad from which Marshall began his famous "probes," and no spacecraft, no Voyager II ranged farther than he, nor discovered as much. (Nevitt 1994, p. 287).

It is hard to believe that McLuhan would manage to discover something so very important for communication just by chance. We could ask many of his collaborators about the matter, but the Canadian encyclopaedist John Robert Colombo already did so for us when he directly requested an answer from McLuhan about the origin of his famous aphorism on the medium. 'I took the direct approach and wrote to its originator. McLuhan telephoned to say that he could not remember when and where he had first said the five famous words.' (Nevitt 1994, p.128).

This is probably the same evasive way that McLuhan would have answered any other inquisitor if asked what gave him the idea that the medium is the message. I don't think he ever clearly revealed what it was. At this point we can only say that it was a chance occurrence. But as a matter of fact I have found a very unique sentence of McLuhan's, registered in tapes in the 1970s and later put in writing in 1977 in the last years of his life, and lost between piles of bibliography that bring us back to his years of youth at Cambridge where he suffered his crisis of faith: 'Precisely, in Jesus Christ, there wasn't any distance between the medium and the message: it is the only case in which we can say that the medium and the message are totally identified' (Babin 1980, p. 47). This quote is a personal translation into English from a Spanish edition of the original in French.

I must admit that it would have been fascinating to ask McLuhan what it was that gave him the clue for his special vision of the medium, and in this way discover what his secret influence was. But even so, his answer could have been unpredictable. On not a few occasions while I was immersed in his bibliography, I came across some partial solutions to my inquiry. I was expecting to find some clarifying and definite answer to what brought him to his discovery, but McLuhan leaves the task to us. He is not out to give answers, just to produce effects. In the following quotation that W.B. Key cites, McLuhan gives us a straightforward (but not complete) answer to how he came across the aphorism 'the medium is the message':

'The medium is the message' is a phrase that came to my mind during a conference of radio broadcasters in Vancouver in 1959. TV was threatening the radio world at that time and I wished merely to draw attention to the fact that each medium created its own public and set up a unique equilibrium in its users.

The idea that there can be an equilibrium or homeostasis among the components of any living system, individual or corporate, stems from the work of Claude Bernard (Le Milieu Intérieur) in the middle of the nineteenth century. Taken in a psychological or social context, any new component disturbs the balance of the entire system by requiring some kind of partial compensation for the new factor.

Gestalt or figure/ground considerations are natural accompaniments of any equilibrium theory, and in the phrase 'the medium is the message' there is an interplay of figure and ground in that the 'medium' can be figure and the 'message' can be ground, or vice versa... .' (Nevitt 1994, p.210).

5. A three-dimensional mirror

One of the most interesting aspects that I've found through my reading of the bibliography of McLuhan is the parallelism in certain concepts and terminology that exists between him and the anthropologist and palaeontologist Teilhard de Chardin. McLuhan's 'global village' is the necessary tool that we need to reach de Chardin's 'noosphera', which de Chardin defines as the collective result of millions of years of accumulated thought, and which he hopes humanity will reach one day (de Chardin 1967, p. 345). Of all the writers who influenced McLuhan, I believe that the most decisive was de Chardin, whom he cites on numerous occasions.

By way of example, I'll include some quotations to show how de Chardin is mentioned in the works and letters of McLuhan. In *Understanding Media*, McLuhan (1964, p. 218) states that "The tendency of electric media is to create a kind of organic interdependence among all the institutions of society, emphasizing de Chardin's view that the discovery of electromagnetism is to be regarded as "a prodigious biological event."

In one of his letters, McLuhan (ed. Molinaro 1987, p. 292) states:

That electro-magnetism as such is an extension of the central nervous system is a persistent theme of Teilhard de Chardin in his Phenomenon of Man. It is a concept familiar to biologists and psychologists alike. It has very much to do with the instant speed of electric structures and of the brain. Such speed makes inevitable the handling of vast quantities of information in a highly structured and, indeed, 'mythic' way.

In his book *The Gutenberg Galaxy*, McLuhan mentions the global village concept (1986, p. 31-32), by explaining that "...our new electric culture provides our lives again with a tribal base. There is available the lyrical testimony of a very Romantic biologist, Pierre Teilhard de Chardin, in his *Phenomenon of Man* (1967, p. 240) :

... their [human] minds...as though dilated upon themselves they each extended little by little the radius of their influence upon this earth which, by the same token, shrank steadily....Better still: thanks to the prodigious biological event represented by the discovery of electro-magnetic waves, each individual finds himself henceforth (actively and passively) simultaneously present, overland and sea, in every corner of the earth.'

McLuhan (1986, p. 32) goes on to say:

People of literary and critical bias find the shrill vehemence of de Chardin as disconcerting as his uncritical enthusiasm for the cosmic membrane that has been snapped round the globe by the electric dilation of our various senses. This externalization of our senses creates what de Chardin calls the "noosphere" or a technological brain for the world. Instead of tending towards a vast Alexandrian library the world has become a computer, an electronic brain, exactly as in an infantile piece of science fiction....

Here McLuhan is expounding on de Chardin's ideas, and will call his 'extensions of man' what de Chardin defines as 'their minds...as though dilated upon themselves,' and later 'this earth which, by the same token, shrank steadily' will become in McLuhan's terminology the 'global village'.

Both de Chardin and McLuhan foresee the problems of the new global world, the former in a general way and the latter in a more specific way. According to de Chardin, the bad, growing at the same rate as the good, will reach a state of paroxysm, the bad manifesting itself in a completely new form (1967, pp. 348-9). McLuhan with more detail tells us: 'And as our senses have gone outside us, Big Brother goes inside. So, unless aware of this dynamic, we shall at once move into a phase of panic terrors, exactly befitting a small world of tribal drums, total interdependence, and superimposed co-existence.. .' (1986, p.32).

6. Globaloma or the distorted image

Here, in these last lines of McLuhan we can see the onset of what we could call 'globaloma', which is to say, the downside of globalization if we are to apply McLuhan's tetradic system of media analysis (1988, p. 7); that is, the retrieval of the bad aspects of village living and the rendering obsolete of the good in it. Therefore, 'globaloma' would represent the negative interrelations derived from globalization that could be parasiting and preying on the development of a positive global social structure that would otherwise be caring for the welfare and education of the individual.

McLuhan also argues that 'The loss of individual and personal meaning via the electronic media ensures a corresponding and reciprocal violence from those so deprived of their identities; for violence, whether spiritual or physical, is a quest for identity and the meaningful. The less identity, the more violence.' (ed. Benedetti 1997, p. 82) See also "La Cultura es Nuestro Negocio" (p. 312) McLuhan adds that:

The electric surround of information that has tended to make man a superman at the same time reduces him into a pretty pitiable nobody by merging him with everybody. ...Violence on a colossal scale results from his feeling of impotence. The media tend to make everybody puny, while offering them the opportunity to be supermen (ed. Benedetti 1997, p. 85).

Now we are living in times of crisis. Many aspects we were somehow unaware of have caught us by surprise. A crisis is like a crack in the mirror that until now has reflected our own imagined reality in a global world, but not the real pattern behind it. As de Kerckhove (1995, p. 74) wrote: 'People often think that crises happen in a kind of fog, where you can't make head or tail of the situation. But more often than not, the crisis itself reveals the pattern. There is a fine account of breakdown leading to breakthrough in Edgar Allen Poe's "Descent into the Maelstrom."'

There is a new pattern in our 'global village' beginning to be visible and turning into a disconcerting image. There is the threat of loss of our identity as individuals or social groups, which can lead to the generating of violence, which would in turn feed the 'globaloma', this new disease that might be spreading rapidly in this newly worshipped Global Village. It functions as cancer does, like a kind of lymphoma that destroys the defence mechanisms of our immune system. This now distorted message that could be replicating and invading the medium may be spreading as fast as possible into the power structures, invading the nervous system of the world. Countries don't matter, people don't matter, just 'this' medium, just 'that' message. We could conjure up a monstrous vision of the fingers that hold the bread with which we feed our human condition being chopped off in a horrible bite that is devouring all edible substances which in

turn will create more 'globaloma' till the bitter dark end (if pressed to the extreme).

On the other hand, however, there is still such a thing as ethics, which are clear 'supranets' of positive information that could act as a vaccine to aid our global village. They were and could be the future of our human condition, the way to avoid any kind of brainless fraud and numbness that may be spreading. Nowadays, we shouldn't attribute to this term the old concept of the fight between good and evil; instead, by ethics we could understand the unforced and unenforceable actions that should be taken to accomplish a positive outcome for humanity as a whole and also for the individual in the global village.

7. Reconstructing a new mirror

In conclusion, ethics have been proposed in this article as a means of insuring a positive way of striving through the difficult times that we may be faced with. Education is also one of our most valuable tools to achieve this end. In the past, the objectives of progress were defined by static systems, and education had its goals very well defined by the dominant discourse. But at the speed we are moving, it is difficult to define in what direction we are going. Technology and also the breakthroughs in media give us a constantly changing perspective and seem to be directing the system in an aleatory way, in which we see ourselves disoriented and immersed in this sort of whirlpool. The following is a panoramic view with regard to the past and future role of education in our society:

We are living in a world that is rapidly changing. Modernity or bourgeois society that gave way to capitalism and communism is coming to an end at the same time that we are involved in a new period which we have agreed to call post-capitalism or postmodernity, which will perhaps bring to us a new Illustration fostered by technology, which is its real point of departure. Therefore, as in all changing historical situations when an emergent synergy occurs, originating in the new dominant position, it creates in the opposite direction a devaluation of the conditions that defined the preceding times. Modernity, in short, gives way to postmodernity, the Guttenberg galaxy to the computer era, liberating discourses to efficient decisions, and in the end education as an antisystem discourse, becomes that which actually orientates the system. (Colom 1994, p. 14)

The following quote was probably McLuhan's vision for the future of mankind:

McLuhan had a new version of the myth of Christianity. Paradise was lost in Eden; the Fall was completed in Babel when a multiplicity of tongues destroyed human communication. But with the arrival of the new media, Paradise is regained. [. . .] In McLuhan's vision, Babel is conquered by cybernetics; the communal world of the ancient villages is reconstructed through the global village that has been established by the media. The computer, said McLuhan 'promises by technology a Pentecostal condition of universal understanding and unity.' (Altschull 1990, p. 341)

Until McLuhan's time, practically all the images that our mirrors returned were bidimensional, which is why we concentrated more on the close-up shapes that they reflected rather than on the diffuse background forms that remained hidden behind. In any case, all these forms were reflections of the past. McLuhan simply taught us how to look correctly into the mirror. He

knew how to look towards the inside of his special 3D mirror, where he recognized at his back an explored and bygone world that looked real. McLuhan keeps encouraging us to be aware that the real global world, however, is actually operating beyond the limiting frame of our mirrors, and that much of it is yet to be explored.

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A Theory of Media as a History of Electricity

How McLuhans thoughts about mediation are thwarted by their negation

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The society of the 20th century, as McLuhan described “it, is a society of speed. Everyone – almost everyone – can transmit messages immediately from one end of the world by cable or satellite, thus being part of a *global village* as a “simultaneous field of relations”³⁹. “Ours is a brand-new world of allatonceness. ‘Time’ has ceased, ‘space’ has vanished. We now live in a global village... a simultaneous happening.”⁴⁰ “Electric is always instantaneous; there is no delay. That’s why you don’t have a body. Instantaneous communication is minus the body. So that began with the telegraph. The telegraph also has that built-in dimension of the instantaneous and it completely transformed news and information. The mere speed. Didn’t matter what was written; the fact that it went at the speed of light transformed everything.”⁴¹ These sentences may serve as a paraphrase of McLuhans ideas about electric speed in the modern age. But there is an aporia, a paradox or a contradiction situated at the heart of these sentences: if there is speed, then there is acceleration and delay. And when there is delay, immediacy and instantaneity are impossible. An instant time is no time. Immediacy means to neglect media – the media McLuhans theory wants to describe. How can McLuhan at the one hand perform a change of perspective from the message to the medium, and on the other obliterate the medium by describing it as immediate? If a transmission is immediate, it does not take any time and does not have a medium that could be its message. But McLuhan says exactly this: Electric speed is immediate and instant, and all of its effects on society, its transformation of figures without grounds to Gestalten, of *causa efficiens* to *causa formalis*, and of sense ratios, depend on its instantaneity. When it has a “built-in dimension of instantaneity”, there can be no not immediate electric medium. This idea immunises itself. The discursive function, the historical genealogy and the phantasmatic dimension of immediate media are the topic of my talk.

My talk is an attempt to take McLuhan as a symptom and not to use him or his thoughts as a tool to built up a new theory or to find out something about current media developments. I don’t want to take him as a content, but to historicise him. Media theory or Medienwissenschaft today, I think, is confronted with the need to write its own history to find new grounds. When media theory wants to be established as more than a fashionist way of thinking, it has to do a historiography of its own, and McLuhan is obviously part of this

39 McLuhan (1959, pp 169)

40 McLuhan & Fiore (2001, pp 63)

41 Voyager (1996)

history. But he also offered some parts of a toolbox or even a philosophical framework for the study of media. To historicise McLuhan for a media theorist means to historicise your own thought.

To take McLuhan as a symptom means to take him seriously as someone standing amidst many different discourses. He is constantly trying to balance them. He takes what he can get from everywhere his arms can reach. This was the most prominent feature of his books: to bring together formerly unrelated topics and to play with them, to combine them in new ways, some fruitful, some not so fruitful. By importing ideas from so many areas, McLuhan also imported some problems related to these ideas, maybe without recognizing it. But there are struggles between the discourses, confronting what may be called his theory with the aporia I already introduced.

As I said, there is a paradox at hand here: Media are not immediate. I am not sure if one can say that media are an opposite of immediacy, but certainly a medium is needed if there is a distance or a difference to be mediated between two separate elements. By saying that a medium is immediate, this difference is closed and unified. When there is unity between separate elements, there is no need for a medium, because there is no difference to be crossed and no abyss to be bridged.⁴² If two are one, there is no need for a third. And if there is mediation, there is a contradiction to the notion of instantaneity which results in what I want to call phantasms of immediacy. And I want to argue that these phantasms, up to today and all the time during the great days of electricity and telegraphy, were important to balance the imaginative economy of communication. These phantasms are working deep inside of McLuhans thought. I don't want to arouse the impression I wanted to replace one concept of media with another. I think that the notion of immediacy has an important function in McLuhans thought and that many of his ideas rely heavily on it. "Past, present and future merge into electric oneness."⁴³ This results in a tension that makes it impossible for him to fully grasp his own ideas. McLuhan does not recognize the potential of his own theory because he describes electricity as immediate and media not as a way to deal with differences but to produce unity and immediacy and thus efface itself. The global village is the most prominent manifestation of immediacy in his thought, but more important, his tools of thought are constructed on immediate grounds.

In the given time, I want to concentrate on one topic: his idea of electric speed. With this idea, which contours many of his other thoughts – acoustic space, formal cause, Gestalttheory, the resonant interval – it is possible to show that McLuhan described media as something that unifies. Media, electric media, are a means to gain immediacy, be it the global village or else. These ideas partly emerge from the ambivalent and phantasmagoric history electric research and telegraphy since 1730 and partly from his resisting Catholicism, which I want to take as a discursive figure and not as an individual belief. In his letters and in the essays and interviews published under the title *The Medium and the Light*, McLuhan offers an insight into some of the concepts that keep together his thoughts. They are all, if I may say so, infected by Catholicism. I will come back to this.

Not much has been said about one of the most prominent ideas of McLuhans work. Electricity and its role for McLuhans thinking has so far, as far as I can see, not been subject of a thorough investigation or even critique. Bob Hanke and Richard Cavell have done some

42 Peters (2000)

43 McLuhan & Nevitt (1973, pp 2)

pioneering work in this region.⁴⁴ Of course it is often said how important electricity was for McLuhan. But a discourse analysis of what this electricity is that McLuhan is talking about in every book since *The Gutenberg Galaxy* or a historical analysis of where it comes from is still missing. With my talk I want to give a brief outline of such an analysis without, for obvious reasons, being able to go into deeper detail. It is very important to note that such a history is not a history like, let's say, the history of television. Electricity, for McLuhan, is more than a topic or a technique or a special medium – it is a form of thought. Electricity is what allows media theory to emerge in the 1960ies. His thought not only broaches the issue of electricity but wants to show the influence of the structural changes induced by electricity onto this thought. One could say that electricity formats McLuhans thought. The change he located in the advent of electric media could not be bigger. Electricity recalls the “causes of things”⁴⁵. That is the reason why writing a genealogy of McLuhans electricity means to write a genealogy of media theory. McLuhans thought is only understandable, at least for himself, through electricity.

The idea that the medium is the message is formulated against the background of the idea of instant electric transmission. “All rigid distinctions between thinker and doer, observer and observed, object and subject are being eroded by the ‘rim-spin’ of electric media.”⁴⁶ Instant electricity has three main aspects: first, says McLuhan, it offers a way to perceive Gestalten, that means figures with grounds and not figures without grounds. By this, it is possible to describe media and not contents. The idea that the medium is the message is implicitly based on this assumption. Second, thinking electricity means thinking with *causa formalis*, that means, a tool of causality that does not refer to the linear one-after-one of the Gutenberg Galaxy. *Causa formalis* can deal with the allatonceness of acoustic and tactile space, which are the results of electric media. Third, electricity reenacts a balance between the senses by externalising man into global embrace. All three ideas rest on a immediate mediation which causes a lot of trouble underneath the thin skin of McLuhans ideas.

Let me at least give an impression of the historical backgrounds of these ideas, since they are mainly not of McLuhans origin. With the advent of electromagnetic telegraphy in the 1830'ies, a notion emerging from the history of the sciences of electricity in the 18th century diffused into popular knowledge: the instantaneous transmission of electric action. Ever since Stephen Gray, more an amateur than what we would call a scientist, explored the possibility of electric transmissions through copper wires in 1729, the speed of electricity was an item of interest and subject of several investigations. Speed, that means the possibility of non-speed, as instantaneity means to negate speed. Instantaneity means that transmission does not take any time. Electric action is present at both ends of the wire at the same instant, as Gray had experienced in his experiment. He touched one end of the wire with a rubbed tube of glass and in the same moment some brass gold on the other end began to move. He had no instrument to measure it and his senses were helpless. Electricity and telegraphy were described in such manner as timeless and thus having no speed. There is a small difference between slow speed and no speed, but this difference means everything to physics and to media. As no one was able to recognize any difference between the electric occurrences at both ends of a wire, they have been described as instantaneous, as having no difference and no mediation.

44 Hanke (2010) and Cavell (2002)

45 McLuhan (1964, pp 27)

46 McLuhan & Nevitt (1973, pp 1)

All electricians, whether physicists or engineers, knew very well that nothing could move with an instantaneous speed because action at a distance is impossible. This is due to physical and philosophical reasons: nothing can act where it is not. A longstanding debate, dating back to Aristotle deals with *actio in distans*. The common denominator of most arguments in this debate is a desire to de-paradoxize the absent presence or present absence an actio in distans brings into the world. These debates achieve a new significance with electric action. Nonetheless, when dealing with implementing their knowledge in techniques, electricians pondered about the immediacy of electricity and what it would offer to mankind. 'Immediacy' spread out and became a common denominator for many aspects related to electricity up to its common use in everyday life.

The rise of telegraphic communication raised the impression that speed was part of the process of modernization. Statements like the following give an account of the benefits electric transmission was supposed to offer to society. It describes a telegraphic meeting in the year 1850: "We publish the following novel and interesting account of a meeting of the employees of the American Telegraph Company on the 3d instant at – what place? That is the question – at no place, or at all places where there were Telegraph offices, within the circuit of seven hundred miles. A large room, that – seven hundred miles in diameter – for a meeting to convene... The members together in spirit – in communication, and yet in body seven hundred miles apart!"⁴⁷ McLuhan will say almost the same. The idea of an annihilation of space and time is also part of the history of media theory, because it deals with the paradox how something can be where it is not – one of the main aspects of the rephrasing of the term medium in the 19th century. But this discourse of near and far and speed is also part of the Hegelian, teleological legacy of media theory. The annihilation of time and space leads, it is said, to a global worldwide unity, to the global village. For example, Manuel Castells still deals with this confusion when he speaks of an "annihilation of space and time by electronic means"⁴⁸. His idea that the network society is a society "without reference to either past or future"⁴⁹ is analogous to McLuhans idea of an "electric nowness"⁵⁰ – disregarding the catholic implications, of course.

When Marshall McLuhan encountered the impacts of electric media he implicitly relied on these notions. He knew about the imaginary dimension of culture as a place for such phantasms. By conceptualizing electricity as the agent of all the changes he stated for 20th century culture, he actualized these phantasms. They speak through him.

With instant transmission the relation of speed and non-speed begins to shake. The instant speed of electricity is no acceleration, but a turning point. In an interview with Bruce Powers, McLuhan compares the situation of someone or something moving faster than light with an absolute speed to a scene from *Star Wars*: " [...]At the exact moment [Han] Solo puts his spaceship into warp speed all those pinpoints of light stand still. He's travelling faster than the speed of light and thus the space freighter becomes simultaneous and everywhere at once – the properties of acoustic space."⁵¹ Warpspeed, of course, is not part of *Star Wars* but of ***Star Trek***. When instantaneity leads to allatonceness and thus to equilibrium, speed and

47 Anonymus 1857, 'Telegraphic Meeting' quoted in Sconce (2005, pp 21)

48 Castells (1998, pp 379)

49 Castells (1998, pp 386)

50 McLuhan & Nevitt (1973, pp 2)

51 McLuhan & Powers (1992, pp 134)

acceleration are erased. This universe has no borders. It has no place for otherness. Transmission, which would take time from a physical point of view, implodes to the *global village* of instantaneity. This instantaneity is faster than light. McLuhan, and this is no joke, imagines a medium that could be faster than light,⁵² thus forming the “simultaneous field of relations.”⁵³, which is the seedbed of the *global village*.

In such a space, relations need to be described in a new manner: immediate, unrelated, everywhere at once. Its simultaneity is faster than the fastest speed. Everyone and everything is everywhere at every time. This is the catholic dream of a unity, a *corpus mysticum*, as it was phrased throughout Christian history. “Electric man is a ‘super angel’”⁵⁴. For McLuhan, media theory must lead to this idea. Even more: because media theory is only possible under the instant action of electric media, and because this instantaneity “evoke[s] the presence of Christ immediately via the ear”⁵⁵, only a catholic can truly understand media theory.

Let me underline that this is not a minor inconsistency but a paradoxical framework. McLuhan says that media theory as a change of perspective from the message to the medium is only possible under the reign of instant electricity. To see media as figures with grounds means to see figures and grounds at the same time, and this is a benefit of electric speed. Instantaneity is a necessary condition for his idea of media theory. And so to use McLuhan today makes it necessary to historicise him. Without writing the history of his thought, which is the history of our own thought, we will be trapped in all the impossibilities to think an immediate medium or we will end up in a questionable political utopia like the global village which has no outside and no other because of its instantaneity. We will never be able to describe difference. There would be no place for critique. There would be only a catholic utopia.

Please let me finish with a more or less political statement. For McLuhan, as for his disciples Eric McLuhan, Derrick de Kerckhove or Paul Virilio, media theory is a catholic project, and only a catholic can truly understand what media theory is about. Only a catholic can join the heaven of media theory. We should refuse this occupation because of two reasons, and not simply because of religious matters, which I have nothing to do with. As I have described, McLuhans theory of media is oriented towards unity, even though his ideas that the medium is the message or that every medium is content of another medium lead to a differential analysis. But McLuhan never applied this dimension. It is not a theory of difference. Thus it is exclusive. The second reason is related to a danger articulated by Gottfried Wilhelm Leibniz in 1716. In his dialogue with the Newtonian Samuel Clarke Leibniz remarks that Newton, when confronted with phenomena he could not explain, tends to introduce media to explain the unexplainable. These media were ethers, gravitational forces or just media. Newton uses, says Leibniz, media as wonders instead of arguments or descriptions. It is possible to allude this critique on current problems: Media theory is always threatened by the attempt to use wonders instead of media. That is what McLuhans electricity is about. And this is the reason why McLuhan, at least this is my impression, never fully grasped that his sentence The Medium is the Message means that the medium makes a difference. He never thought about media as differences, but as immediate. Only if we are able to write a critical

52 McLuhan (1987, pp 466)

53 McLuhan (1959, pp 169)

54 McLuhan (1999a, pp 50)

55 McLuhan (1999b, pp 148)

history of McLuhans thought, for which I wanted to offer some minor inspirations, we can free his heritage from his own occupation and use his tools as a matter of difference, that means the way they were intended: to change perspectives.

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Media images of the automotive industry for consumption: the world of work through the glance of advertising communication

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1. Introduction

In his reflections about advertising in the book *Understanding Media*, McLuhan warned that someday historians and archaeologists would discover that the advertisements were the richest and most faithful reflections a society could conceive to portray its activity sectors. In this study, we investigate how the language of advertising allows us to analyze the update of the mythologies surrounding automobiles in the 21st century, when multinational corporations in the automotive sector conceive their communication at the intersection of global and local aspects. The meaning of the global village is articulated in advertising and boosts the formation of imagined communities (Anderson, 2006) [1] around brands and products. Through the campaigns of automobile brands selected for this study, we highlight the representation strategies of the universe of work as a way to build connections with consumer's everyday life, the experience of labor and its overcoming by means of the playful and dream-like universe supported by advertising. The inclusion in media production of the experience of the public confirms a trend pointed by McLuhan. It has been confirmed and deepened over time, especially when we consider the Internet as a support for the inclusion of consumers in collaborative processes related to products, services and the very development of the media communication that shapes the mediatic aesthetics of the goods.

Advertising, as social glasses that mediate how we look at life, at relations between individuals and between subjects and objects, constantly turns itself to the world of work. Production systems, workers, and the origin of goods are fertile ground for advertising creativity, which develops playful, dreamlike, comic and poetic versions of the products development according to the symbolic universe of its brands. In this work, we turn our focus to the advertising communication of the automotive industry, to analyze the meanings of the translation of productive sphere and work with the purpose to serve the strategies of persuasion and seduction of global brands. According to John Berger (1990) [2], advertising is “the process of producing fascination.” Our interest in this theme is based on the question: how the fascination generated by advertising retrieves, translates and surrounds with magic and imagination a sphere as complex as the world of work, to the point of transforming it into a reason for the consumption of goods?

With the division of labor and the commoditization of the worker in the context of modern capitalism, this sphere of human activity, according to Marx, has generated the distancing between producer and product. Thus, the work—which potentially is a form of realiza-

tion of deeper human capacities and production of subjectivity—, due to the application of methods of business administration at work, such as Taylor's and Ford's, becomes "estranged labor" (Marx, 2004) [3], well exemplified by Charles Chaplin in his film "Modern Times" (1936). Contemporarily, intensification of work, competition, pressures and demands around employee's performance are the causes of a series of ailments that affect men nowadays. Even though work may also express desires and dreams of portions of subjects, there is a "heavy" aura around the human professional activity. Taking into account this context, the function of translation and re-reading of the advertising language has greater relevance for understanding the symbolic processes that surround consumption in our society. It is through persuasive communication addressed to the consumer that the productive context of the automotive industry, the first place where the production line in the manner designed by Henry Ford was installed, can become a place where desires and seduction awaken.

This study is based on the theoretical framework about the world of work and consumption, McLuhan's theories about media, and the methodology of discourse analysis of French line, specifically with regard to the study of discursive ethos proposed by Dominique Maingueneau (2001) [4].

2. The Global Village and the Editing of the World by Advertising

The processes of mediatization of corporations find in advertising a language that organizes the things in the world, editing them in function of the presence of the advertiser and of the signifiers associated with him. This way are formed imagined communities (Anderson, 2006) [1] that, different from the sense of nation studied by Anderson, are constituted by identifications through taste and consumption practices. The consumers of goods produced by multinational corporations are aligned, by means of advertising, with lifestyles that have direct connection with the "spirit" of the advertised goods.

The automobiles are among the most important consumer goods that have this characteristic of responding to global strategies of production and communication. We may comprehend the thought of McLuhan about the automobile both considering its insertion in culture, by means of its consumption that may be translated in an extension of men with specific characteristics, and considering its relation to the transformations of the productive chain the author predicted would exist in a near future. We will discuss in the next pages these two points that make the automobile one of the consumer goods that more often appears in the work of the author.

In his work *Understanding Media*, McLuhan associates the automobile to a piece of clothing, a human extension that would represent a "carapace, the protective and aggressive shell, of urban and suburban man" (1994, p.254) [5]. The author's view of the automobile and its relation to people, especially those living in cities, is shaped by the conception that technology expands the senses and the reach of human actions. In this view, the automobile would be a form of mediation between the individual and the things of the world or other people, a mediator that promotes a different form of interaction with space. If the media, as thought by McLuhan, have as characteristic the transformation of men's perception, the very means through which our senses are rubbed and a new sensorium stimulated, then the automobile

can also be considered a mediatization of human experience. Besides the sense of protection, there is a remodeling of city spaces and organization engendered by the use of the car, a projection of men on the urban context that is, ultimately, the establishment of new parameters in the relation among subjects, time and space. We want here to bring together the reflections of McLuhan and the inquires that pervade the theories of Walter Benjamin (1991) [6] related to the Universal Exhibitions, to the arcades and to the mechanical reproduction of art (specifically the cinematographic one), in short, to the visual culture that gets established in the 19th century and that engenders new human sensibilities related to the ways of seeing. McLuhan theories amplify the scope of the human transformation since the advent of the information technology. In his readings, the author casts the human experience in ambiances of continuous affectation that will result in new mental structures. The being immersed in the global village and stimulated by media of McLuhan will generate other characteristics to the new *sensorium* discussed by Benjamin.

The second aspect refers to the order of production that, according to McLuhan, would be in the verge of a big revolution, marked by the production of “the unique and custom-built at assembly-line speed and cheapness” (1994, p.251) [5]. The theoretical context of this prediction can be located in the author’s consideration that consumer society was heading to an era in which the consumer would be encouraged to participate in the production processes as co-producer. In this aspect, McLuhan’s prediction is consonant both with the flexibilization of systems and production chains, intensified in the 21st century, and with the imaginary pervading an era in which the consumption is central and the consumer is rhetorically constructed as having controlling power and decisively influencing the processes ranging from production to consumption. As defines Appadurai (1990) [7] in his re-reading of Marx’s concept of “commodity fetishism”, there is both the production fetish, which builds the aura that unbinds the product from its productive sphere and casts it to the mythical plane, where the value moves away from the use and gain new levels of exchange value thanks to the symbolic layers covering the commodity; and the consumption fetish, in which the consumer is fed with the imaginary of being in control, while having, in fact, a choice gamut limited to what the productive sphere offers. We understand that digital networks allow individuals to elaborate their content production more freely than before, and in this instance, in which cooperative systems gain space, also co-habit structures older than those broader processes of flexibilization and interactivization. We refer to the presence of multinational corporations that work perhaps as hard as they never had before during all the history of capitalism to establish a dialogue with the consumers, but there is also a form of production that places the consumer in a planned chain of production, in cooperative networks of higher complexity fed by communication that takes the consumer’s position as the imaginary starting point to everything else, as the very reason of the existence of organizations. The rhetoric of satisfying consumer desires and wants conceals the ambition of profit and capital expansion.

Following this thought, McLuhan discusses the world of work that, being decisively affected by the progressive automatization and by new forms of bonding between individuals and production, is disseminated both through paid and unpaid activities, through roles that range from the producer connected to specific corporation or productive system to professional mediators whose function is to establish communicative connections with users, suppliers and a myriad of publics (from services aggregated to commodities to cool hunter roles and consumer behavior consultants that analyze the behavior of groups, communities and especially of youth culture), and even to consumers that assume the role of co-producers,

prosumers, inserted in the productive process as collaborators. This variety of possibilities of comprehending the relations between producers and consumers, including the exchanging, intersectioning and overlapping of roles, is a point highlighted by McLuhan in his reading of the consumer society based on progressive computerization and on the space-time compression due to the convergences today consolidated around the digital media.

3 Advertising, Consumption and Work, According to McLuhan

In his reading of modern advertising, McLuhan builds on the meaning of the symbolic consumption that transcends the commodity. The mode of inserting products in complex systems of meaning, which brings them closer to human affection and leaves in second plane their functions, is in part result of the images with which advertising frames what is advertised. It follows that the progressive replacement of products by advertising that McLuhan (2005, p.134) [8] wrote about, rather than being taken literally, should be interpreted based on the idea that advertising consumption acquires some autonomy in the contemporary scene; the values, lifestyles, and action incitements from publicity mean something to consumers, independently of the buying act. The effects stimulated by advertising are amplified, and the function of commodity shifts to that of a mood trigger, an affection mobilizer, a link between individuals. A classic example of this would be the *Mastercard* advertising campaign named "Priceless", in which the priceless moment is achieved by means of a "semantization" of acts that are related to products but that do not depend on them entirely. The human dimension of consumption, in the reading of this advertising, is supported by a language that is a commodity in itself.

McLuhan goes beyond this reasoning when he affirms that "This kind of environment that we have, an information environment, electrically programmed, turns the entire planet into a teaching machine, and it's a man-made teaching machine" (2005, p.180) [8]. The author points out to an idea of cooperative production that would generate new senses of community: in this environment built by men, the mediatic consumer feeds back the system with his reading, presence or learning. The men built world benefits from this congregation of knowledge and daily practices around technologies and goods that transform the human senses and that are themselves continually changing, being sometimes replaced by new technological apparatus. In this environment, the consumer is shaped through a double bonding logic: in the consciousness of inclusion he develops, there exist, simultaneously, a private sense of belonging and also a tribal, collective one. Baudrillard (2006) [9] develops similar reasoning through the concept of a "collective pretension" which each act of consumption presupposes: the good consumed in the private sphere is also loaded of meanings of symbolic connections to a specific group, a tribe, to the sharing of tastes and lifestyles identified with the commodity. However, Baudrillard uses as a starting point some much delimited roles related to the spheres of consumption and production. McLuhan identifies in the incorporation of the public as co-producer a transformation of function: from passive consumers to *work force*. The conception of the world of work developed by McLuhan takes into account the current tendency of the employment being replaced by the attachment to roles and projects that, ultimately, would figure as a blend of labor and leisure: to defend this thesis, McLuhan

makes use of the image of the artist, who “is never working. He’s doing what he wants to do. He’s playing and he’s at leisure at all times, especially when he’s working hardest” (McLuhan, 2005, p.183) [8]. This same atmosphere of the artistic work, transposed to the contemporary scene, is now grounded in a culture fostered around media and leisure industry, discussed by Morin (2006) [10]. The author develops his thought rescaling the diagnosis of Frankfurt School Critical Theory about the impacts of the cultural industry on society. He defends that the social imaginary fostered by this mass culture stimulates the individuals to pursue objectives and dreams that are not predetermined by social or economic structures; the complex combination of fiction and reality in the daily life shapes individuals that are not built homogeneously, but instead are particularized in their manners of consuming and making use of cultural industry stimuli. In this state of the relation between work and leisure, real and imaginary, the consumer takes on the role of producer and sees his activity as something playful, related to pleasure and to his private likings. We will come back to this discussion during the case analysis of *Fiat Mio* project of cooperative production. Fiat Mio is an “automobile of the future” model that had the internet as the main platform of the communicative process through which the productive dialogue took place.

In short: the role of co-producer becomes a communicational strategy, a way of strategically thinking the place of the consumer as part of the conception of something that is designed for him. The advertising language “semantizes” these poles of production and consumption in intersection, in reversibility and in overlapping, as we are going to analyze below looking at advertisings and commodities divulgation strategies of the automobile industry.

4. On Methodology Applied to the Material Selected for Analysis

The analytic glance we cast at automobile advertising is based on French Discourse Analysis. The world views, the values, the ideological categories that support the world shaped by advertising language are on the focus of French Discourse Analysis methodology. The emphasis on the materiality of language gives shape to our understanding of cultural texts and of how they relate to their social environments. The zeitgeist permeates the products derived from it, and in the case of advertising, we can notice tensions among discourses from the sociocultural scene that gives meaning to the communication. The sliding of meanings, the assumptions and the implied, the intertextual and interdiscursive relations, are elements based on the dialogic character of language, as defined by Bakhtin (1999) [11]. According to the author, every discourse establishes its dialogism with other discourses that have preceded it, because discourses are structured from the already-said speeches of a culture, they make use of pre-constructed elements to mobilize the social memory and to support a communal repertoire with its public; the dialogue with contemporary discourses is perceived in the tissue of language, because the individuals in charge of the linguistic production are also active consumers of the discourses permeating the social context into which they belong, as do their interlocutors; messages can only establish connection with future discourses because they seek to anticipate answers, make a projection of future actions, because they want to be assimilated by their consumers and, thus, to transform the other, to produce affections consistent with its speech project.

In this way, the study of the discursive ethos, in which Dominique Maingueneau is an exponent, gives support to the analysis based on the interlocution projected by the analyzed communication, even if isolated from its process, that implicates in the reception of new speeches derived from it – a continuous process, not circumscribed to determined time and space and disseminated along the social tissue. The advertising message projects the image of the enunciator in traits of character and body, in other words, it builds an image of the agent of enunciation that has a specific tone, psychological profile and body, grasped by the *ways of saying*. This image produced by discourse is also based on affections, passions invested in language that have an implication in the form in which that image is inserted in the communication; in other words, the interlocutor is projected by the message aimed at him. This comes close to the ideas of André Gorz (2005) [12] when he defends that productive systems include what he calls “consumer production”. The communication is part of the productive process and goes beyond it as it mediates the relation between the productive process and individuals that are in turn stimulated as consumers of a speech project that includes their future action (be it the adhesion to a brand’s symbolic universe, to an ideology, to the acquisition of a new product).

From this frame of reference, we find that advertising communication works as an aesthetic layer that is inseparable from the automobile as commodity, since it is based on advertising that the consumer will be able to situate the commodity in the middle of a dynamic system of values present in society, and to situate himself in relation to market offerings. The design elements present in the materiality of the automobile may suggest characteristics such as “youthfulness”, “adventure”, “elegance”, among others, but it is the discursive positioning of commodity advertising that will amplify the reach of design sensorial appeal to compose more complex systems of ideas. In the following paragraphs, we will discuss these elements using as basis the communication of automotive industry that has as specificity the explicit reference to the very productive processes as a metalinguistic strategy that transpose automobile production to the logic of consumption. Roland Barthes (1987) [13] states that “the myth is a speech”; by the means of advertising language we will reflect about the myth-logic that gives meaning to the automobiles of our time.

5. Analysis of automotive industry advertizing in the 21th century

As we pointed above, were selected for this study advertising messages with one common characteristic: they contain representations of the automobile productive process and of the world of work it entails. Not aiming at a quantitative analysis, we have chosen advertisements that allow us to perceive a broad range of communication strategies that correspond to categories identified in the collected material, composed by automobile advertisements that ran in the first decade of the 21th century. The three categories that encompasses all the pieces selected for this study are based on the character on the interaction proposed by the communication by the forms of giving meaning to the roles of producer and consumer. Those categorizations are inspired by the problems posed by McLuhan as discussed above. We present below each one of these categories and the movies associated to them, their particularities and shared characteristics.

a) The Production in the Service of Particularized Consumption

As characteristic of this category, we identified movies that present views of automotive production with very restrained roles for the productive sphere and for the consumer, to whose tastes, desires and particularized wants the production seeks to attend, as noticed by Baudrillard (2006) [9] in his analysis of an Airborne armchair advertisement. In order to do this, the production rebuilds itself as a spectacle for consumption. That is what happens in the movie "Cake" (United Kingdom, 2007) produced for the launching of the *New Fabia*, a Skoda brand automobile. The automotive factory is recreated in the allegory of a bakery or confectionery in which employees make a cake and huge amounts of fillings. Everything is done with artisanal attention; the human presence overwhelms the machines and automatization. The rhythm is dictated by an old music that provides an intertextual marking: "My favourite things" (Rodgers and Hammerstein), original soundtrack to the classic Julie Andrews film "The Sound Of Music" (Robert Wise, 1965). The sweet voice of Julie Andrews framed by an orchestra melody gives a light and delicate tone to the advertisement. This voice lists its owner favorite things: nature, animals, kinds of foods, praising the happiness derived from daily experience and the small details of daily life as antidote for sadness. In the middle of frames made of cake dough, shells made of sweet toppings, lights made of jelly, chocolate as lubricant, among other candies that are transformed into the automobile, lies the meaning of the slogan in the end of the movie: "The new Fabia. Full of lovely stuff. Skoda. Manufacturer of happy drivers". The advertisement has connection with the imaginary surrounding "Charlie and the Chocolate Factory", literary work with two cinematographic versions, the latest one directed by Tim Burton (2005). The production transcends the function of the automobile to get to the effects: it takes up the role of producing "happy drivers", representing a system that places the consumer in the center of a whole process designed for his happiness, to the satisfaction of his desires. The pleasure and the flavor of childhood associated to the candies serve as connotations related to the automobile. The light tone of the movie brings up the sense of a delicate corporality, feminine, that highlights the imaginary of the thoroughness of the production associated to handcraftsmanship and to the unconditional love Julie Andrew's character offer to children in *The sound of music*. The consumer is derived from those affections, shaped as an individual whose desires must be satisfied, and encouraged to assume in this system the role of the child cuddled by the tender mother. The corporation is humanized and the consumption of the automobile equated to pleasure.

The Toyota movie called "Made with a human touch" (Denmark, 2008) can also be placed in this category because it transforms the production into a seduction spectacle, with passing images lead by the soundtrack, the song "Heart of glass" (1978), from the band Blondie. The seductive tone of the feminine vocal of Debbie Harry, associated with the dancing beat of the music, dictate the rhythm of the work, in simultaneous production processes of different models of the brand, that alternate themselves in the images. The aesthetics of the environment is futuristic with several combinations of the brand colors – white, red and black. Productive moments that build the appealing character of the Toyota brand: beautiful women with tight clothes, dancing sensually while they paint a car shell; workers moving in synchrony in front of an assembly line; a road in which the circling automobile maneuvers are shown in slow motion; the acrobatic leap of a man, jumping from a platform to test the airbags on the ground below. The climax of the movie is the moment in which hundreds of red butterflies, responding to the press of a button, fully cover the shell of the Prius model in the air.

In the Toyota movie, the “human touch” combines the sense of handcraftsmanship and the serial production in the charge of humans that are almost automatons; the ethos derived from this communication has a seductive tone that associates technological traits to the human mark. The allegory of production seeks to convey the effects of consumption, and in order to do this, covers itself with the aesthetics of spectacle, of fashion, of acrobatic plastic, of domesticated nature – elements in convergence that are unified around the concept of the piece, that highlights the human presence. The production once more points to the consumer senses and gives him the role of the beneficiary of the system, in an individualistic plane.

b) The Production in the Service of Collective Consumption and of Social Causes

The characteristic element of this category is the determination of giving meaning to the producer and consumer roles by making them part of a bigger social process; both consumers and producers are identified in the cooperative process of constructing an ideal scenario, of a collective issue, of a social cause. The advertising builds thesis about today’s world and about the future, taking for granted shared functions of the roles that must be assumed to grant the well being of the collectivity.

To represent this category, we have selected the movie produced for the launching of Fiat 500 in the Brazilian market, in the year of 2009. An old model from Fiat (its first version appeared during the 1950s, a popular car that gained importance in the scene of post world war two Italian reconstructions) that was upgraded to the current model in 2007: its lines got modernized and some advanced technological components were added. The mentioned advertisement is wholly produced using animation and shows a futuristic scenario that has on automatization its main characteristic. The soundtrack is a version of the song *Obladi Obladá*, originally recorded by the Beatles in the classic *White album* (1968). The tone is happy, fun, warmly human, and adds complexity to the reading of a technology dominated world. The car image appears as a light sphere in the midst of two oversized hands in the sky, leading us to associate it with a divine work. Moving initially across a desert, the Fiat 500 reaches the idealized technological and futuristic urban space. At the roadside, mechanic daisies equipped with cams survey the passing automobile. The verbal discourse of the locution marks the represented future as a scenario being dreamed in the current time: “this is a new time. A time in which all of us can feel freer, breathe better”.

The automobile is fueled by a gas pump fastened on a mechanic arm – just one drop of fuel is placed in the tank, hyperbolically suggesting the economic consumption of Fiat 500. The locution synchronized with this image makes it appear as a very meaningful small gesture: “A time in which we share not only dreams, but also the planet we live on, the space we walk in, the travels we make”. A spaceship takes off; the automobile veers to outrun giant robots walking along the road and then goes through a tunnel full of colorful geometrical shapes: “a time in which you rule technology and not the other way around”. In a sort of futuristic carwash, the Fiat 500 is prepared by machines and monsters covered by fur, both serving the production together with the mechanical arm, in a scene accompanied by the following text: “this time unites us and make us more alike, at the same time it differentiates us and make each of us unique, special”. Returning to the road scenario, all the passing automobiles are of only one model, the one advertised, and they stop in front of a crosswalk to let a group of robots resem-

bling an adult followed by several kinds cross the road. Then appears the slogan: "Fiat 500. The car of our time".

And what time is this shown in the advertisement? A time in which the automotive production appears as the fabrication of a new world. A future transposed to the present, in which the technology is used to make people free at the same time that it promotes the standardization of goods and actions, the automatization of production, the worker's disappearance. A time in which the utopia of a better world is projected in small gestures of consumption, like that of saving fuel. A dream time based on the harmony between production and consumption, both of them having sometimes specific roles and other times roles that overlap in the construction of an idealized scenario. The community imagined by advertising is supported by an utopist ethos with technological corporality and humanistic spirit – the last associated to the sharing of ideals between producers and consumers. Nothing could be more paradoxical, if we consider that, ultimately, the popular automobile is a private solution to the problem of collective transportation at the big cities of the world. In contraposition to the tendency pointed by McLuhan about the destiny of the automobile, that would, according to him, be replaced by other technologies, we see the recreation of the automobile by advertising, that boosts it to the future, to a world that dissolves utopias to make their consumption easier and more comfortable.

c) The Production in Cooperation with the Consumer

The third category has a more intimate relation to the marketing tendencies pointed by McLuhan: the incorporation of the consumer in the automotive productive process is the theme of *Fiat Mi* project. The action begins with the development of the Fiat Concept Car III (FCC-III). A website (www.fiatmio.cc) was created by means of which the consumers could express their opinions about how the automobile of the future should look like. The process was extended along all the year of 2010, resulting in the production of the prototype presented at the Automotive Hall of São Paulo, in October of the same year. The slogan of the TV advertisement made reference to the website and built the tone of the initiative: "Fiat invites you to build a car. A car to call your own". We have highlighted the communicative aspects of the project Fiat Mio since it has as important characteristic a strategy of expanding traditional advertising format. The consumer's immersion in the role of co-producer is achieved through the development of ideas: the numbers presented by Fiat are grand in this sense. The project, that has started in the Brazilian division of the Italian assembler, has 17.000 people from 160 different countries signed up at the website and received 10.666 ideas until the 11th of April of 2011 (data available at the website). The consumer is classified in his performance, rated by the amount of ideas shared and comments made about his interventions by means of a rating system defined by the project coordinators. One of the most interesting aspects is that the productive system, defined as shared, is revealed without its meanings through the speech of Fiat workers, at the making of published at Youtube. From February 2010 until January 2011 were produced 16 backstage movies that have as main characters the designers, engineers and other workers from Fiat enrolled in the Mio project. They indicate that the users' ideas have served as a starting point, but that they had to judge which ones they liked more, which ones were feasible, or had even to elaborate interpretation of what were "behind" the consumers' opinions. Only in two movies the co-producers appear: when the prototype is presented at the São Paulo Automotive Hall and in the movie that records the occasion of the visit of some collaborators to the factory

and a dinner offered by the assembler in recognitions to their services. We have, thus, a reality show of production that builds the mythical image of Fiat producers, symbolically consecrated by their heroic mission: transposing the consumer yearnings, opinions and “needs” into technological refinement to be applied in a future project. The happiness achieved through labor is expressed by the smiling faces and by the enthusiastic, motivated and emotive speeches.

The incorporation of the consumer as co-producer turned into a trend: the non-paid work is sucked by the productive process, which gains a legitimate aura for being supported by the opinions and approvals of consumers. Those, during the last stages, are asked to make a choice among limited options given by the production. Fiat flexible ethos, built upon the voices of producers and consumers in a dialogic form, reveals in the making of, the reality show of their own work, its humble but at the same time heroic character, able to fascinate individuals that dream about the future supported by corporative strategies.

6. Conclusions

Marshall McLuhan, in his discussions about advertising and about automobiles, points to the senses of human extensions that surround the consumption and its rhetoric. We brought closer to these themes a third one, also present in the author’s works: the world of work and productive sector trends. Through the analysis of advertising discourse, we have comprehended some elements composing the imaginary fostered by automotive industry in the 21st century. We sought to identify the myth-logics that give meaning to the consumption and production spheres by means of a categorization supported by a previous reading of the material selected for analysis and by the exemplification of each category in the analysis of four distinct strategies. We found different levels of interaction between producers and consumers that are projected by communication either as playing restrained roles or playing intersected roles. The production shapes itself to the logic of consumption by being represented as spectacle; particularized forms of attention to consumer desires and “needs” and constructions based on collective and utopist ideals are distinct ways of placing the consumer as a part of the productive system. Projects for the future and immediate experience unite to conquer publics consonant with the symbolic universe of the brand. The strategy of incorporating the consumer as producer reaches its peak with the Fiat Mio project that presents interesting innovations pointing to the future of the corporative culture but also reveals forms of alienation of the work force by means of seduction, playful aspects, small rewards and new senses given to old market practices, for instance, market research, raised to the status of cooperative production.

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Ground-making: the Medium as Environment

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Introduction

The medium is regarded here as a heuristic concept, namely a notion allowing the analyses of the world's complexity. Such an approach began with the social analyses of McLuhan starting in the late 50's, where he brought the electrical side of the era of information into focus. Other scholars and intellectuals from different disciplines have continued his research, like De Kerckhove (1991), Ong (1982) and many others. The work of McLuhan enlightens the connections between different fields of research, from literature to technology. I try to show how his conceptualization of the communication could provide a new cultural framework in which it is fundamental the rethinking of the role played by ecological feature over the variety of human spaces.

In this paper I will explore the media concept as a theoretical device allowing to solve part of the puzzles of contemporary life and propose a theoretical approach to world's complexity from an environmental point of view, in opposition to a technological or individual angle. I'm looking for an account of the media concept which include a good understanding of technology in its role to produce cultural artifacts and communication environments. In this enquiry it is necessary to assume a ecological perspective to embrace the general aspects over the large area of human enterprise, because 'an increasing number of activities occur in a context of an ecology of communication' (Altheide 1994).

McLuhan's ideas were developed after the WWII during the period of Cold War, when the new medium was the television. So McLuhan faced a different media landscape, however he understood the direction of phenomena. Nevertheless, as Levinson noticed, we can use as a conceptual tool the McLuhan analysis of the media universe because 'the digital age is both well explained by McLuhan and helps bring McLuhan's ideas into sharper focus' (Levinson 1999, p. 43).

The rise of a new planetary culture on the explosion of internet-based networks gives us a new land for exploring human interactions. Not just a new media, but a new macro-environment challenging old communications with its ubiquitous and instantaneous character, so well caught by the Canadian theorist.

In the first section I analyze the media starting from the McLuhan's account, underlying what I consider the most significant instances and considering the possible field of influence of the extension's effect, which I located on a social and collective level. In the second chapter I'm going to explain the environmental side of media concept, and its importance for a new kind of ecologic perspective where the environment created by media activity is the fundamental level of analysis. In the third section I try to figured out some notions (Hybridization, Psychoecology and the Ground) explaining the actual behavior of media environments and the role they play in communication, imagination and the cognitive processes.

1. Critic of the Media Concept

It's possible to find a simple and clear theoretical core in the first section of *Understanding Media*. In the first chapter, *Medium is the message*, two propositions are claimed:

- a) 'the "content" of any medium is always another medium' (McLuhan 1964, p. 23);
- b) 'the "message" of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs' (McLuhan 1964, p. 24).

These two propositions explain the specific approach of McLuhan's account of media. They offer a high-level interpretation of a multiplicity of social and technological facts, permitting to distinguish two levels of reception, the first is the local level, and the second is the consequences of its systematic use in a community.

This kind of analysis is the product of the recording technology because 'It is much easier to see what a medium does—the possibilities inherent in the material form of an art—when the same expressive or communicative contents are transposed from one medium into another' (Guillory 2010, p. 324).

The media are conditions of possibility for more complex forms of human aggregation. The medium is not embodied in a concrete object as its support, but it can be developed as a conceptual device that allows us to grasp the dynamics of the use of special artifacts within the community.

So, theory of media is a *meta-theory* of communication because it studies the environments created by the interactions in the media system.

There are different areas that build analysis: i) the local level of the medium: this is the level of the analysis of how the medium works, its working requirements, and its proper organization. These theories concern particular communications: they describe a specific kind of medium (theory of literature, art, game studies, etc.). However, the theory of media exploits further aspects, two types of interactions: ii) a particular medium versus society; iii) one particular medium versus another media.

While the disciplines of local media regard the analysis of the history of specific cultural and artistic forms, media theory deals with all of these together but from another perspective. Media theory elucidates the interactions between a medium and the other media in a particular context and the interaction of media with the social body.

Some notions overlap their meaning to the media one. They are the notion of technique and technology. A medium, at the most general level, is what stands between individual and community or between community and the environment, and of course between individual and environment. It's a mediation device. Media here is a general concept but mediation is an abstract process involving a conflict factor: 'If we think of mediation as a process whereby two different realms, persons, objects, or terms are brought into relation, the necessity for mediation implies that these realms, persons, objects, or terms resist a direct relation and perhaps have come into conflict' (Guillory 2010, p. 342).

The media are seen as communication technologies. It is not correct, however, to identify the medium as a species of the genus technology. The concept of media is wider and it's hard to circumscribe it to a limited field of studies. Under different labels, it is possible to address issues specific to different disciplines and formulating various theoretical interpretations. However the aim of my reflection is that the media theory should be understood as a clear account of technology developed from the point of view of media, and not considered as an account of the media concept in a technological perspective. Now I explore briefly the conceptual differences between notions.

A technique is a way through which we can manipulate the rough natural environment. Technology is a family of techniques. Technology puts technique's products on the same level of the natural resources. In a technological society the artifacts of technique invade the natural environment. This process modify the relationship between human activity and the environment that people inhabit. Indeed, a medium could be seen as the environment created by a technology which is used by a community.

The complex situation of the media communications set the problem of how the new environment affects the form of aggregation. It has been argued that the community has been liberated "from its local roots" (Wellman 1979, pg 1207). So through mass self-communication (Castells 2007) we face the ubiquitous counter-environment of electric communication that gives us the possibility to act beyond our territorial limits.

What is strongly emphasized in the McLuhan's view is that what interests the student of media are the forms of human association. In this sense the media are placed as a guideline to understanding some social processes. According to this theoretical proposal a medium contains, as vehicle, another medium, in the meantime it reconfigures the system of communication and the social habits. This type of methodological approach towards the media gives us the tools to understand that 'it is the medium that shapes and controls the scale and form of human association and action. The content or uses of such media are as diverse as they are ineffectual in shaping the form of human association' (McLuhan 1964, p. 24). It is noted that particular type of content can be transmitted first in the older media, then in the new one. This change of context makes clear the differences between the models that technology imposes directly on collective behavior. This influence may manifests itself in the capabilities or faculties that a given media process tends to stimulate or inhibit.

McLuhan's aim is to create educational strategies to provide tools to understand and act on a social sphere, a field of influence that transcends the individuals. Summarizing, from my perspective the medium can be considered: a) a theoretical proposal that explains the effects of technology on the social body; b) a space of communication becoming environment and, as such, can be experienced, occupied and changed. The point of technology is understanding how to manipulate the environment, indeed the point of media theory is the disclosure of how the entire environment reacts to the new artifacts.

It's necessary to specify that my interpretation of the medium as extension suggests that the media influence is social and environmental. Some extreme interpretation of McLuhan, instead, seems to suggest the obsolescence of human body or some kind of technological overcoming of the human nature. In *Technology recapitulates Phylogeny*, Rinaldo reports a claim made by Sterlac in his CD-ROM *Metabody*:

It is time to question whether a bipedal, breathing body with binocular vision and a 1400cc brain is an adequate biological form. It cannot cope with the quantity, complexity and quality of information it has accumulated.... it is only when the body becomes aware of its present position that it can map its post-evolutionary strategies. (Rinaldo 1998, p. 373)

I claim that the nature of the single human being does not change under the effect of intense media activity. What changes is the background of society, and it can change very quickly and many times. The enhancement we experience is demographic and relational. It is difficult for the individual to accept being part of the ground, not the figure.

I prefer to interpret the extension's instance not as a modification of the individual, but

as an enhancement of possibilities offered to individuals by a larger range of new activities. A medium appears with the choice, implicit or explicit, of a shared protocol. The medium is an enhancement of environment, not of the individual person. The biology of people does not change, for now.

2. The Medium as Environment

Modern society doubtless faces a more complex environment than in the past; the members of humankind are the same about the quality and many more about the quantity, as a result what we broke is the equilibrium of our relationship with the natural environment.

Technology creates new collective shared environments, opens new spaces and demands the destruction of old ones. A place that react is clever, is an environment. There is an inside and there is an outside of the media activity, the former regards the rules of working of the technology, the latter is the collateral effect on the social body or the environment.

The word 'ecosystem', from its first appearance, is a 'label for studies of relations of organisms to the organic and inorganic conditions of their existence'. And a 'human ecology' is 'the study of ecosystems that involves humans' (Catton 1994, p. 77). These ecosystems

may be tremendously diverse. We can think of their diversity as spanning at least three broad categories. First, there are ecosystems in which humans are a very dependent part; the study of environmental influences on human behavior and social institutions in such ecosystems has been a concern of ecological anthropology (...). Second, there are ecosystems dominated by humans in varying degrees. Human ecology (even as pursued by sociologists) ought to concern itself with the full range of this variation in human dominance (...). Third, there may be ecosystems (or fragments of ecosystems, such as cities) so strongly human dominated that they can easily be misperceived as instances of outright human autonomy and self-sufficiency. (Catton 1994, p. 78)

Can we consider the environments produced by the media activity as ecosystem? Following the argumentations above I think it is possible to respond positively. Perhaps an actual media environment is not completely natural, not producing itself spontaneously, but when it is in action it behaves as an ecology. David Altheide proposes the 'sensitizing' concept of 'ecology of communication' to explain 'how social activities are joined interactively in a communication environment' (Altheide 1994). He characterizes his notion as made up of three dimensions: an information technology; a communication format; a social activity (Altheide 1994, p. 667). The meaning of the first and the third is well-known and 'communication format'

refers to the selection, organization, and presentation of experience and information. Every medium of communication and the information technologies used to shape and transmit information does this through certain patterns, shapes, looks and these we refer to as formats. Changes in the nature, impact and preference of formats implicitly is an instance of social change. (Altheide 1994, p. 668)

There are different phases in the construction of a new human environment: discovery or creation of the environment; modification for needs and ends; occupation by communities. The traditional ecology of print communication has been modified by electricity, so technol-

ogy, as well as a different format, could modify existing activities or create new activities. A media theory explores the environment 'in which information technology has been integrated into some activities, while providing opportunities for the development of entirely different activities and perspectives(...). The key idea is that an increasing number of activities occur in a context of an ecology of communication.' (Altheide 1994, p. 668)

So, a technology is not yet considered as medium without a particular community adopting it and, through it, creating new kinds of activities. The forms of human agency have a very close relationship with the structural properties of the environment in which they are developed.

When we face a new media landscape we have to ask ourselves which are the demands of a media system, its requirements of work. This involves three factors: demands of the technology, demands of the individuals, demands of the environment. The demands of the individuals are, obviously, selfish. The demands of the technology could be dangerous for the environment. The environment's demand are the most useful to examine. They involves the sustainability and the equilibrium of the environment. The only occasion in which we can ignore the environment's demand is when we want to destroy the environment itself.

The uniqueness of man lies in changing their environment rather than adapt to it. Advanced technological tools can create environment that humans could occupy, like a sea platform or a space station. We expanded our ecological limits during the history, always looking for new territories of expansion. A new medium provides to translate old activities and transfer them in the new space created by the media activity. In a second moment communities discover the proper character of the medium. When users' community find the grammar, we see the creation of new activities specific of the new environment.

We wish to perceive the media as a coherent system; however, we can face them only as a living system. The distinction of natural and artificial is not useful in the perspective I adopt. Since Hobbes we consider the state as an artificial instance, as a big social production rather than thinking to large scale human events as natural facts. The natural and the artificial were two different area of interest. We thought that what is created by man it's under his control.

Hannah Arendt explains how we changed our relationship with technology. She explains how man was used to produce new separated object through his activity. These objects was artificial. But now automation is a process rather than a product.

However we have channeled the natural forces, like electric and nuclear energy, into the human world of artifact which is no more separated from nature. 'Electricity (...) determines the present stage of technical development'(Arendt 1958, p.148):

we changed and denaturalized nature for our own worldly ends, so that the human world or artifice on one hand and nature on the other remained two distinctly separate entities.

Today we have begun to "create," as it were, that is, to unchain natural processes of our own which would never have happened without us, and instead of carefully surrounding the human artifice with defenses against nature's elementary forces, keeping them as far as possible outside the man-made world, we have channeled these forces, along with their elementary power, into the world itself. (Arendt 1958, pp. 148-149)

So we put back nature in our artifice. The electric technology give the animation to our communication system, so they become environments, media environments.

3. Hybridization

The medium unveils its structure when interacts with other media. It is difficult to understand clearly the medium characteristics because its occurrences are never pure, but always mixed in a social activity. But now the different technology can talk themselves. There is a struggle in the media landscape between artifacts and formats. Each media activity now fights to find its role in the ecology of communication. New practices are emerging.

Hybridization is 'the interpenetration of one medium by another'(McLuhan 1964, p. 59). The meeting or collision between different media is a phenomenon of adaptation: 'whenever two cultures, or two events, or two ideas are set in proximity to one another, an interplay takes place, a sort of magical change. The more unlike the interface, the greater the tension of the interchange' (McLuhan 1989, p. 4). The phenomena by which the community chooses its media applications are a very complex social behavior calculating the benefits or risks of hybridizing processes. The appearance of new environments is still difficult to predict and does not seem possible to provide some deterministic explanation of their emergence. The Hybridization of media is essentially a not deterministic process. However, we must acquire the appropriate knowledge of these processes for developing new strategies of ecological manipulation. We have to consider the social sphere as being composed of living matter, organic, not yet definitively individualized, an area in which the potential for many new configurations creates new formats, artifacts and forms of aggregation. Roy Ascott identifies in the media activity 'the convergence of technology and biology', this field of interaction provides 'the 21st-century substrate for art –moistmedia- the integration of silicon-dry computer systems and wet, living biology.'(Ascott 2004, p. 111) He explains this substrate as follows: 'Moistmedia arises from the convergence of bits, atoms, neurons and genes'(Ascott 2004, p. 114). Ascott refers to an hybrid substrate that is produced by the electrical side of media. So, we define the phenomenon of electric hybridization as the invasion of traditional environment by electric technologies. This is not a word-revolution as the alphabet or the print, but a reorganization of the forms of social living and communication. Electric hybridization make clear the ecological approach to our technology.

The discovery of electricity and the implementation of any kind of electric technology on the social body had deeply changed the relationship with nature. The relationship between media and instrumentality involves all ends of existence and highlights some prerogatives of humans. The environment as a whole is involved in the analysis. The aim of first intervention of the electric media of communication is just a media translation of many of the processes essential to our everyday lives. The natural environment was finally replaced by technology and a technological environment based on mechanical technologies and literacy is profoundly different from the same place once it has been invaded and pervaded by the electrical energy and electromagnetic waves.

McLuhan emphasizes the role of hybrid process in clarifying our sight of the media landscape:

It has now been explained that media, or the extensions of man, are "make happen" agents, but not "make aware" agents. The hybridizing or compounding of these agents offers an especially favorable opportunity to notice their structural components and properties. (McLuhan 1964, p. 57)

So hybridization makes us aware of the relevant aspects of the media. Becoming aware of

the mechanisms of the media means to distinguish the factor of the media as holder and the factor of the content of each human activity. This can explain a whole series of theoretical general concept, but can also encourage the reflection on consequences on social body and the environment. The space opened by media activity is not a separated instance, like cyberspace, but an integrated dimension, an augmented environment. Everyday space is changed under the force of the hybridization of computer networks and mobile devices. The communication space is alive. This symbiotic union between individual activity and operational schemes offered by the various media is of the most importance for the construction of social spaces. The evolution and progress, seen as changes in the relationship between man and environment, are not continuous and uniform, but they could generate large collapses in some parts of the media system and its forced reorganization. This restructuring takes place through adaptation and successful hybridizations between the different components. The area in which media exchange flows of informations or energy is a zone that looks like a resonating interval, a metaphorical border where two different media are amalgamating their routines. This area of interface between media is a second interface in addition to the one which occurs between the medium and the user: 'The hybrid or the meeting of two media is a moment of truth and revelation from which new form is born (...). The moment of the meeting of media is a moment of freedom and release from the ordinary trance and numbness imposed by them on our senses.' (McLuhan 1964, p.63)

In order to act within the media system, it is necessary to conform individual practice to the operations of medium and electrical environments require unprecedented coordination of responses of the individual and the interface. Part of the work is made by the individual, while the other part is made somewhere in the environment. We give an aesthetic response to the media. We can change the configuration of our behavior and perception in a functional sense. Camouflage means being indistinguishable from the background environment, so camouflage becomes a strategy involving some molecularization acts. The molecularization due to the media ubiquity represents the sharing of the routines on many different levels and different interfaces: to act in a media environment means to coordinate the responses of the perception with the appropriate behavior.

Since the appearance of the first photo of Earth from space (De Kerckhove 1991), we are experiencing a new kind of emotions: planetary emotions.

Castells in Communication Power find three level of global consciousness shaping the global culture:

*First, for a small but influential minority of people, there is the consciousness of the shared destiny of the planet we inhabit, be it in terms of the environment, human rights, moral principles, global economic interdependency, or geopolitical security. This is the principle of cosmopolitanism (...)
Secondly, there is a multicultural global culture characterized by the hybridization and remix of cultures from different origins, as in the diffusion of hip hop music in adapted versions throughout the world or the remixed videos that populate YouTube. Thirdly, what is perhaps the most fundamental layer of cultural globalization is the culture of consumerism, directly related to the formation of a global capitalist market.(Castells 2009, p. 118)*

I think the second instance is the most important: the hybridization of media creates a sensitive landscape for communication. Mixing cultures and hybridizing media is the substrate of the rising of many communities involved in the process of globalization. The different ways in

which these communities are creating their values and practices are all laboratories to face the next mutation in the media landscape.

McLuhan introduces the ground concept from the dichotomy figure-ground, taking it from the Gestalt analysis of vision (McLuhan 1989). So we do not interpret the ground as an implicit knowledge - the semantic context of discourse- or as a kind of foundation's argument, but, as McLuhan suggests

the ground of every technologies is both the situation that gives rise to it as well as the whole environment (medium) of services and disservices that the technology brings with it. These are the side effects, and they imposes themselves haphazardly as a new form of culture. (McLuhan 1989, p. 6)

The ground is a concept exploited by McLuhan in the environmental analysis of media. I interpret the ground as the inner dimension of the media activity. While we try to communicate with each other through the massive naive use of communication media, each medium communicates and hybridizes with the others. There is a struggle between technology and the ecosystem. The media act on other media and the ground is what remains when we focus on something. The ground is a subliminal instance. The environment is the embodiment of the ground because every act is put into a context, thus we cannot isolate the message of a certain technology from its own genealogy in a specific context.

The ground is latent information, it is continuous and not linear. The aim of the ground is to build a horizon for a human activities, hence is not simply an ideal concept. There is a very trivial aspect in the ground, its materiality. Cables, tubes and water system, like a telephone network. Like streets and highways.

According to McLuhan, use of a medium does not make us aware of the working requirements of the artifact. When the artifact interacts with older media habits, this process creates a break in the ground. A change of rhythm. So we can face the ground of our own media activity.

We have to face on a variety of levels, trying to put together the informations that come from different interfaces. We have to act on reality that has lost the reference coordinates. The world is now more than just a physical environment, a "nature" transformed by the presence of human artifacts. It consists of a variety of levels that intersect each other. Actors can inhabit simultaneously different levels, but it is not possible to establish a hierarchy where a level (for example, the material one) is more helpful in foundation than others (Caronia 2001). We face a labyrinthine environment where new possibilities are added by electric media:

To drive to another city, we navigate roads through space and time, but in our journeys across the World Wide Web, intelligent assistants transport us through invisible byways and intangible junctions. We are unaware of the material composition of the infrastructure and move through it almost as if it were not there. The emergence of ubiquitous computing signals the disappearance of transparent technology into our living environment. (Binkley 1995, p. 431)

A community of people and an environment with its ground create a psycho-ecology populated by intelligent actors. As De Kerckhove psycho-technology, a psycho-ecology is an intelligent environment that behaves as a whole, manifesting a psychic depth. Electricity is a pure ground making the characteristic animation of our daily psycho-ecology possible. The wide-spread use of electric media produced a planetary culture:

Consciousness is the great mysterium that entices artists and scientists alike to enter its domain. It is the ultimate frontier of research in many fields, and probably only a truly transdisciplinary approach will allow us to close the explanatory gap, or, in our terms as artists, to navigate its many levels, to reframe our perceptions and experience. It is within consciousness that our imagination is at work, and it is in imagination that we first mix the realities of the actual and the virtual (Ascott 2004, p. 112)

Reality becomes a blurred concept controlled by communication devices. Freedom in this type of environment is connected with the freedom offered by the interfaces.

Conclusion

I suggest to consider the media as extensions of the human environments, not of the man itself. The technology is not an extension of our faculties but a special area where we can express them.

We have different plug-ins through which we can participate to a wider social environment. A media perspective cannot consider human beings as a product of some technology. Man is not an artifact.

In fact, a multiplicity of linguistic and technological layers are melted together and perceived in different ways according to local culture. It follows that political activity represents an important layer in the system of media, in which there is a continued renegotiation of our freedom. Although communication is a social phenomenon and the public sphere cannot be seen as deterministic and dependent on the structure and functioning of the media, these fields are precondition of the exercise of human will. Furthermore the level of freedom is a good element of the characterization of subjects in the more complex media environment. In this more intricate situation, individuals have different possibilities to operate on different levels. The freedom to choose how to operate in the media environment is the most important individual commodity.

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The impact of McLuhan's thoughts on the context of the Communication research in Brazil

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1. Introduction

The aim of this research is an attempt do to discuss and point out some aspects of the impact that the work of the Canadian theorist Marshall McLuhan had on the research of Communication in Brazil. The translation into Portuguese and the publication of the author's main works in Brazil – such as “Understanding Media” and “The Medium is the Massage: An Inventory of Effect” – happened in the 60s, only a few years after the original publications. Undoubtedly, those quick translations, especially considering the historical context at that time (the military dictatorship), were due to the big fascination this relevant author caused worldwide.

In Brazil, as in other countries which embraced McLuhan's production in their universities, the approximation to his thoughts provoked some effects which surely helped understand the course taken by Communication research in this country.

To understand the impact of McLuhan's work in Brazil we believe it is crucial to rescue not only the background of research in Communication but also the social, political and economic context of the Brazilian nation. Thus, in this article we show three phases which explain the influence of McLuhan's thought in Brazilian research: ambiguity, silence and appropriation.

McLuhan's production brought a relevant change in the course of Communication research in the worldwide. If we rescue the Lasswellian Scheme (Lasswell 1948), we can observe that until the 60s we had as privileged aspects of Communication research the interest in the studies about the message's effects and content. Up to that decade the world scenario pointed towards a polarization between North America and Europe in terms of Communication studies. Or, more precisely, between Communication Research and Critical Theory, which shared, whether openly or not, the same desire to understand the frightening effects of the media.

[e]mpirical research on mass communications has traditionally been divided into three areas: public study, study content and study of effects. Such division actually enhances the studies of effects. Certainly, the content research comes from the rhetoric of message or the size of audience reached, but it also leads to the problem of the effects (Katz 1999, p. 01).

McLuhan's work opened a new phase in the research of Communication: the concern with the media. The study on the effects, so privileged throughout the history of research in the area until the 60's, gives some room to think and understand the main message within the mediated communication process: the media (McLuhan 1964).

The 60s also brought another important question to the research on Communication. It is precisely at that time that the polarization between North America and Europe started to wear down. Little by little the world began to embrace those studies and open new and complex fronts of research (Miège 2000). It is in this context that the research of Communication in Latin America starts.

The initial research in Latin America in the 60s revealed some cultural and political aspects of that time. The preference for the effects and content was easily replaced by a research engaged with denouncing the cultural imperialism and the Latin dictatorships massacres, openly supported by the United States.

The beginning of the research in Communication in Brazil was marked by the interest for popular culture and its manifestations – folkcommunications. The great exponent of that time was the researcher Luiz Beltrão, who inspired many other scholars. However, this line of research was interrupted by other challenges. The Brazilian military dictatorship, which lasted from 1964 to 1985, gave a new approach to the academic and scientific production. At that time the researchers aimed their focus at revealing the manipulation which the communications media and their messages could cause. The delicate political moment gave political outline to the Communication research.

The selection of the three moments of McLuhan's thought in Brazil, which will be developed throughout this work, is the result of a research that has been developing for a couple of years. The initial interest of the authors in the work of this exciting researcher took them to immerse themselves in reading several Brazilian commentators of McLuhan's work. In this sense, articles, books, and dictionaries of Communication have been our main source of consultation. The analysis of these texts led us to consider that certain time periods were marked by quite similar ways of research and use of opinions about McLuhan's work. This allowed the creation of these three stages, which aim to observe little closer and raise questions about the history and impact of McLuhan's thought in Communication research in Brazil.

2 Ambiguity: McLuhan, love him or leave him

Antonio Hohlfeldt and Maria Cristina Gobbi, two eminent researchers in Brazil, released an important work in 2004 that reflects the history of the Communication research in Brazil. This unique and distinguished work presents three main phases of Brazilian Communication thought - the pioneering generation, the renewal generation and the innovative generation. This is actually the thought of leading researchers in Brazil who had their work awarded and recognized. The first two stages date from soon after the Second World War until approximately the 1980s, which coincides almost completely with the time of the first phase of McLuhan's thought: ambiguity.

According to Gobbi (2004), the Brazilian Communicational thought begins with the emergence of schools of journalism in the country. It was only consolidated in the 60s with the expansion of courses in Communication (Cinema, Advertising, Public Relation and others). Studies of the first generation, as we already commented in this paper, focused on folk-communication and popular communication. This period, prior to the establishment of military dictatorship, was marked by economic growth, although it was also marked by political instability.

As of the decade of the 1960, national and world stages changed considerably. Such changes concerned Communication research, with an increase not only of thematic perspective, but of countries and researchers involved in this research. However, the political scenario in the world also changed, especially in Latin America, where military dictatorships spread as virulent and bloodthirsty pests.

It is in this background that the work of McLuhan comes to Brazil after the military coup of 1964. The publication of McLuhan's works happened at a decade marked by repression and dark persecution. Thus, the acceptance of McLuhan's thought in Brazil reflected the instability of the moment. Therefore, the first phase was marked by strong ambiguity which divided some national authors. McLuhan was seen by some Brazilian theorists as conservative and reactionary as he chose to study a technological issue. Those authors pointed out and made criticism about the determinist aspects in the production of the Canadian author and resented the absence of political debate.

Luiz Costa Lima, a leading Communication thinker from the 60s and 70s, published in 1969, a well-known work on the theory of mass culture. This book had few texts of the major Communication theorists and commentaries about them. In this universe of 12 selected texts, McLuhan appeared as one of the most important Communication authors, but in the commenting of the author's thought, Lima (1969) argues that McLuhan was old-fashioned and evolutionary and attacked his thesis, which considered little defensible.

[i]f theoretically, therefore, McLuhan seems does not exist, his work, however, on the other hand, has at least one sensible quality: against the prevailing direction in the sociology of mass media, he insist on the decisive character of the analysis about and from the language, about and from the medium that the message is formulated (Costa 1969, p. 144).

These decades of the 70s and 80s are marked by denouncing research, for example, Cultural Imperialism – notably played by the United States against the countries of Latin America – the use of media by the State and foreign capital in the Brazilian media. On the other hand, that period is also of economic prosperity and growth of the media in Brazil. This scenario gives a tone of creative tension in which the research increases as a reaction to the military regime and also to the national technological development.

[t]hus, one can say that between one generation and another (pioneering and renewal) there are nearly two decades in which the panorama of Brazilian research especially in the communication area, suffered significant change, extending and deepening itself. This was due not only to the immense growth of communication networks and the need for critical reflection that was imposed. As a consequence, we can observe that most of the texts selected here are still concerned about historical perspectives, survey and assessment data, next to the theoretical reflection (Hohlfeldt 2004, p. 12).

Certainly there were also some other researchers who were enchanted by McLuhan's work and could see the revolutionary and almost magic side of his aphorisms. So that in 1969 three of his books were translated into Portuguese: Understanding Media, The Medium is the Massage and The Gutenberg Galaxy.

Even with the complicated political landscape, it was impossible to pass unscathed by the

popularization of television from the 60s and 70s. This mass phenomenon also impressed the nation and the Brazilian researchers by its fast popularization and adherence among the Brazilians to the lineup of this media. The ability of McLuhan to speak about the impact of the media and speak through them, of course, delighted many researchers and created resistance in most conservative ones.

[s]uch presence is found in radio, television and cultural supplements of the newspapers that will transform the issues of academic texts into best sellers and their authors into stars, familiar late afternoon TV news viewers. Marshall McLuhan is one of the pioneers of this new stardom, ending a tradition marked by the slight and even timid figure of the intellectual, as Walter Benjamin. McLuhan is the son of the media, which will be the first major patriotic, but will also be the first major academic star (Gastal 2003, p. 47).

The ambiguity we have outlined in this first phase of McLuhan's thought in Brazil is also marked by an ambiguity in the area, which brings up the impact of this new vector of analysis – the media – in the politics, economy, culture and behavior of Brazilians (which now dedicate much of their time to the television audience).

To have an idea of the voices that hailed McLuhan's thoughts, Anísio Teixeira, a leading Brazilian researcher responsible for several national projects on Education, was invited to write the foreword of the book "The Gutenberg Galaxy: The Making of Typographic Man", released in Portuguese in 1972.

Anísio Teixeira's introduction to the work of McLuhan was exciting. Right in the first paragraph he praises the author uniqueness in his imagination and insight. He says that McLuhan is one of the most discussed thinkers of the 60s and that the differential is the new angle he created to uncover the reasons why the modern spirit was formed.

[f]or the new era of civilization that is arguably the advertising itself, reading and seeking to penetrate on the complex, new and original McLuhan's thought is not only a high and rare delight, but the duty and necessity of each one of us who suffers the perplexities and uncertainties of huge transition (Teixeira 1972).

Certainly, this citation from Teixeira is emblematic of the fascination that McLuhan's aphorisms caused in Brazil. The oracle McLuhan (Tremblay 2003) divided opinions, sometimes radically, but certainly did not go unnoticed in Brazil. In a moment of extreme and radical decisions, as were the 70s and 80s to the Brazilian people, McLuhan was not perceived as a peacemaker, but as a great provoker.

3. Silence: it is better not to talk about this anymore

The early years of the 80's were remarked, in the country, by exhaustion of the economic model adopted during the military regimen. The Brazilian foreign debt had been exacerbated with the international crisis, the attempts of negotiation were continuously rejected, the inflation increased, the unemployment was growing and the country was plunging into recession. Creation of the Labor Party and the Campaign for the Direct Elections represented

the political resistance in a scenario of major social unbalance. The indirect election of Tancredo Neves, a civilian, for the presidency of the Republic, in 1985, represented the rescue of hope. His death before being vested into the office, on April 21, 1985, and vesting of the Vice-President, José Sarney, were not enough to hold back the demand for a National Constituent Meeting. Three years later, in 1988, a new Constitution was enacted, nicknamed as the "Citizen Constitution".

According to data from the IBGE (Brazilian Institute of Geography and Statistics), in 1980, 25% of the Brazilian population was illiterate. If the semi-illiteracy was considered, the rate would reach 60%. Misery, unemployment and the highest foreign debt in history contributed for the negative balance of the Military Regimen. However, some undeniable advancement was also registered, mainly in the energy sector, infrastructure, aviation industry, communications. The two Brazils – the one of the exclusion and the one of the development – coexisted through difficulties.

During the military dictatorship, a silent, but very expressive movement was evidenced, the development of the private higher education in the country. From 1965 to 1980, an increase in the number of places was seen, mainly predominant with private colleges focused, moreover, in education, with few or no investment into research and extension. Those small institutions witness diversification of courses and audiences with access to higher education. The Communication courses in the country, mainly dated from the decade of 1960, were multiplied and expanded also outside the capital cities.

The new Communication courses present large theoretical and methodological diversity. The private education, as a result of the need for the student's fast inclusion into the market and the not very renowned profile of its structures are characterized by dominance of technical and professional contents. In a scenario where colleges adopted several theories but do not dedicate deep analysis of the theoretical knowledge, the Frankfurt School is no more hegemonic. Upon weakening of the dictatorship and the democratization movement, the communication media are no more seen as part of a manipulative system in the capitalist regimen. Other themes start to be analyzed. Among them, the one which becomes hegemonic in the country, the research on reception.

The McLuhan's thought become known, but still bearing some isolation, for its original character. If, during the golden years of the dictatorship a refusal to accept McLuhan was observed, as the Canadian author did not accept the negative perspective about the Communication media, nor endorsed the concern with the subtleness of the messages, during the subsequent years, the media studies competes with the reception studies. McLuhan is the sided class, the displaced seminar, the specific chapter, without continuity, "exotic". The author continues to be labeled as politically conservative and theoretically naive.

To have an idea, in the 80s and 90s the best known book of Communication Theory used in Brazilian Communication schools, called "Teorias da Comunicação", written by the Italian Mauro Wolf, does not mention the Toronto School. This book was a very intensive history about the Communication Theory and was translated to Portuguese in the beginning of the 80s. Wolf (1985) in a footnote explained that, even though the brilliancy of McLuhan works, he did not belong to the Communication research:

[i]t can be enrolled in this category (Culturological Perspective) a very fruitful and famous author in the literature of mass media, whose work – beyond the passionate polemics and tenderly speeches – left, however, few traces in the research. This is McLuhan, essayist whose brilliant

approach can be classified as Culturological Perspective. In fact, for this author, the interest by the media – understood in a very broad sense - is essentially linked to the anthropological transformations introduced by each communicative innovation, through arrangements perception that are intrinsic to every mass media technology (Wolf 1985, p. 94).

But there were resistance. The schools that have more intensely adopted the Canadian author in their syllabus, during the years 80-90, benefited from the strong opportunity of his thoughts. After all, the development of the new technologies started to challenge intellectuals and militants to consider the Communication media in their specificity. In a democratization scenario, where two Brazils tried to get closer to each other, it was important to understand how the television, the radio, the press, etc. could cooperate. By displacing the media analysis of the communication media influence over the public opinion to the discussion of the cognition possibilities stimulated by the media, McLuhan enables very fertile dialogues between Communication and Education. And the Internet had not yet shown its power.

4. Appropriation: beyond love and hate

The third phase of McLuhan's thought in Brazil is marked by an intense rescue of his work. This time things are different The country, with its restored democracy and strong economic growth, consolidated in the decade of 1990, opens and strengthens its scientific research and extends graduate and postgraduate courses in Communication. The more stable economic context also allows heavy investment in communication technologies. Communication conglomerates appeared in Brazil and the 90s is certainly the dawn of a new cycle for the nation.

This revival of McLuhan's thesis in Brazil is the result of the sweeping changes brought by the 90s, and especially by the 2000s. As stated above, the 90s brought not only the consolidation of democracy, but also the expansion of the Communication research. New objects of research come into focus and the technology gains a privileged place certainly because of this national context of investment in science and technology.

In this scenario of perspectives expansion, the Communication research looks carefully at other objects, such as the internet. The interest in this area helped the consolidation of the third phase of the repercussion of McLuhan's work in Brazil. The theorist, now seen in another way, is appropriated, revisited and recollected. Virtual social networks, blogs, cyber culture, cyber sociality, internet pages are some of the alibis for the rescue of McLuhan's thought in the Communication research in Brazil.

According to Hohlfeldt (2004), the innovative generation of Brazilian researchers, which emerged in the 90s, comes under the aegis of the internet and other media that, among other possibilities, allow and encourage the diversity of research in the area:

(...) it was necessary the increasing and deepening of the discussions and researches, as the consequent variety of concerns. Thus, we already find an extremely diverse set of perspectives, covering many fields in which the Social Communication is manifested, by crossing with different disciplines and levels of knowledge (Hohlfeldt 2004, p. 13).

This broadening of research perspectives and the more favorable context of Communication research released the authors from the embarrassment of the study on the subject of technology. The 90s and the beginning of this new millennium bring a new reaction to Marshall McLuhan's work. It is indeed possible that, as in Brazil, the same phenomenon of re-approximation of this theorist's work by researchers in the field of Communication has happened in other countries in these last two decades.

In fact, the debate over the medium of communication can only flourish in Brazil during this period, which explains the re-approximation with McLuhan's work. Talking about media and not evoking the name of this author, even if the voices are discordant, may now be a serious mistake. To have an idea of the strong reference that the author has become, if one looks for the entry "medium of communication" in the best-known dictionary of communication⁵⁶ of the country, one will find an important reference to McLuhan's work.

Brought by the hand of the technologies, such as McLuhan's "wave" doesn't stay solely in this aspect of the debate. Several theories of the researcher are often rescued and readapted in an attempt to discuss beyond the secondary hypothesis to the core of McLuhan's thought and, certainly, also of Harold Adams Innis's thought⁵⁷. As evidence, a lot of his arguments are evoked when it comes to the phenomena of the internet, even without McLuhan having ever written a single line about the World Wide Web.

Luiz Claudio Martino (2008), a preeminent Brazilian epistemologist of the Communication area, argues that the core of the work of Innis and McLuhan is more than a theory of the Communication field, they actually founded this area of research while they focus on a genuinely communicative aspect: the media:

[h]owever, the important thing now is to point out that Innis and McLuhan, unlike other authors and thesis, normally imported into the Communication field, regardless of any assessment that we have, leave no doubt as to the belonging to the Communication field in the strict sense, since they emphasize and develop approaches in which the media have a central role (Martino 2008, p. 139).

The centrality that these authors give to the medium of communication is, according to Martino (2008), the determining allowance so that Communication has a unique and genuine contribution in the scope of Social Sciences. Martino (2008) argues that the studies of Innis and McLuhan caused much controversy and were assessed as weak and inconsistent, from the theoretical and methodological points of view, because the researchers have held to the secondary hypotheses, which often brought misguided and ill-prepared examples. However, when it comes to the central point of argument of these authors, the core – which can be summarized in two main McLuhan aphorisms "The Medium is the Message" and "media as extensions of man" – which brings the media as explanatory vectors and not as elements of the communication process, the scenario changes:

56 This dictionary of communication is now in 11th edition and was written by two Brazilian researchers Gustavo Barbosa and Alberto Rabaça (2001).

57 Undoubtedly, McLuhan and Innis are the best-known researchers of Toronto School of Communication in Brazil. McLuhan is the most debated, but especially in these last two decades (the 90s to the present), Innis's work has gained enough prominence in Brazil and he tends to be recognized as the pioneer of the media studies (Martino 2008).

[a]s explanatory matrix, the centrality of the media corresponds to a theory, in the strong sense that can be given to the term. On the other hand, in addition to that plan, which links the speech to the reality to be explained, it is replaced by an epistemological value. The thesis has such germinating and pedagogical virtue, present in the work of the great classics, as it not only gives an account of a particular reality (as any theory should do), the centrality of the media provides a way of approach and lines of research to be followed assuming paradigmatic value (Martino 2008, p. 142).

The statute that Martino (2008) gives to Innis and McLuhan's thought goes far beyond a simple visit and reappropriation of some thesis, for the author states that their work is indistinguishable from the actual object of Communication study. That is, they faced the heart of the Communication problem. Such fact, according to Martino, even generations of researchers could not do because they were seduced by the content of the media and have looked around contextual research that pointed to circumstantial and temporary scenarios that little helped the building of a more comprehensive and analytical landscape of the mediated communication process.

Therefore, we can say that this last and most recent phase of McLuhan's thought in Brazil is not exactly a re-appropriation, but certainly an appropriation of the work of this author, insofar that this way of recovering his work is new, deeper, less concerned with the controversial figure of McLuhan and more concentrated on the understanding of his thesis.

5. Final Considerations

Undoubtedly, McLuhan figures as one of the most cited Communication authors in the world. The work of the theorist has traveled around the world throughout the continents and, at the start of the first decade of this new millennium, it was translated into more than twenty languages (Gastal 2003). The fame of the "Communication Oracle" also came to Brazil and marked the Communication research in this country.

The arrival of McLuhan's works in Brazil caused much controversy. In part, because the subject of his research brought an aspect of the mediated communication process that the nation was not ready to receive. This happened because the country was in a political disturbed time which influenced the course of research at that moment. But also in part because McLuhan broke with the profile of researchers/scholars of the time - more shy and reserved - and showed himself with a great capacity to speak of the media and through them. His outstanding personality certainly caused discomfort among Brazilian researchers who easily identified and refuted the problems of the secondary hypothesis.

The 80s and part of 90s, previously pointed out as the second phase of McLuhan's thought, were marked by the arrival and consolidation of Brazilian democracy and a long silence regarding the debate over his work. The recent political and economic stability of the country has brought to Communication research subjects which were still preoccupied with the political, social and economic development. In this sense, playing the emphasis on technology was not yet a concern by Communication researchers in Brazil.

Finally, the third and most recent phase of the impact of McLuhan's thought in Brazil is marked by a real appropriation of his works. On the one hand, the striking innovations of the

communications field awaken the interest of researchers who are increasingly concerned with the phenomenon of the technology impact. On the other hand, the effort of some authors, like Luiz Claudio Martino, is notorious to understand McLuhan beyond his secondary thesis, as to dive into the core of his work.

The centenary of McLuhan's birth is also celebrated in Brazil in the graduate and post-graduate programs in Communication studies. Such vibrant personality has deeply marked Brazilian Communication thought and definitely brought the media issue for Communication research. However, it is not possible to finish this article stating that McLuhan's thought became a unanimity to Brazilian researchers. In fact, it would be hasty and inconsistent to say that anyone has reached that plateau since the vocation of science is the maintenance of the debate. But surely we can say that McLuhan's thought has never been so present in Brazil.

The phases described here do not presume to conclude the debate on the impact of McLuhan's thought in Brazil. In fact, they form a strategy to try to understand the history of his thought within Communication research in the country, since in order to review more than 40 years of the entrance of McLuhan's work in Brazil has not proved an easy task. Whilst understanding the limits of categorization, the lack of time and the huge repercussion of his work demanded that effort, which was an attempt to group common voices, but also to understand when the discordant statements appear.

The proposal of this article is to foster and deepen the debate. Three decades after the McLuhan's death, what we can be sure of is that there will still be other phases of appropriation of his thought in Brazilian Communication research.

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Facebook: McLuhan's global village?

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1. All Media Work Us Over Completely

All media work us over completely. They are so pervasive in their personal, political, economic, aesthetic, psychological, moral, ethical, and social consequences that they leave no part of us untouched, unaffected, unaltered. The medium is the message. Any understanding of social and cultural change is impossible without a knowledge of the way media work as environments. All media are extensions of some human faculty, psychic or physical.

McLuhan, Fiore, 2001

With the conversion of Broadband (Internet and mobile telephones) into the most relevant technological platform, some theories that had begun to slowly diminish in popularity are experiencing a strong comeback, thus demonstrating the vitality that they have always possessed. If there is a body of theoretical work that exemplifies this situation, it is that of Marshall McLuhan.

At least two of his central concepts have returned to the forefront and are now being more seriously debated than when they were originally formulated: the impact of the media on cognizance and the idea of the global village, the latter brought about by the undeniable process of economic, social and cultural globalization.

And although some of McLuhan's hypotheses are still controversial, many contemporary authors have been inspired by them.

One of his most ambitious affirmations is that related to the connection between the electronic media and change in cognizance, that is to say, the way in which we learn reality.

Electric circuitry, an extension of the central nervous system. Media, by altering the environment, evoke in us unique ratios of sense perceptions. The extension of any one sense alters the way we think and act, the way we perceive the world. When these ratios change, men change.

McLuhan, Fiore, 2001

In the context of the Cold War⁵⁸, the proposition that societies could be changed more by the nature of their particular communications media than by their content seemed extravagant because, for conservatives, liberals and revolutionaries alike, one of the pillars of the conflict, especially concerning social change, was the doctrine debate, to which technology played only a secondary role unless it was of great propagandistic value⁵⁹.

With the decline of the classical concept of modernity, McLuhan's vision takes on another

58 The first edition of the book *The Medium is the Message. An Inventory of Effects* dates from 1967.

59 An example of this is the "space race".

dimension, although it cannot easily be ascribed to the postmodern perspective. It is in the consolidation of the Internet and broad band that the author's ideas attain their fullest significance.

As pointed out by Carlos A. Scolari, if we replaced the word "television" with "World Wide Web" in the texts of McLuhan, we would find ourselves in the 1960s with an excellent description of the digitalization process and its consequences that would take place thirty years later. (Scolari, 2010:24)

Electric circuitry has overthrown the regime of "time" and "space" and pours upon us instantly and continuously the concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism. The old civic, state, and national groupings have become unworkable. McLuhan, Fiore, 2001

In recent times, when Manuel Castells describes the characteristics of the Web Society, he points out the spaces of flow and atemporal time (Castells, 2009:62). The connection between the two authors does not end with this example, despite the fact that in the latter term the theoretical affinity between the two is not fluid. Nevertheless, like McLuhan, Castells advances the idea that cerebral functions are conditioned by the communications factor. In this respect, McLuhan made a drastic statement by saying that western man thinks with only a single part of his brain and freezes the rest when this bypasses the culture of hearing for which his capacity of conceptualization is merely linear. (McLuhan, Powers, 1990:51)

At the same time, Castells states that individuals frame communication, selecting specific associations between language and experience based on the map of the brain. But, for this Spanish sociologist, the structures of the frameworks are not arbitrary since they stem from the social organization that defines roles in a culture and are later incorporated in the brains circuits. (Castells, 2009:198)

At present, adding to the influence of McLuhan's proposition is a fierce debate as to whether youths socialized in the context of digital technologies show new behaviors in their way of knowledge building and in their understanding of reality, or to put it another way: are digital natives the bearers of a new cognizance?

Beyond the fact that the controversy has not been settled and that there has been a proliferation of research in the field attempting to disprove some of the possible manifestations of cognitive change (Ophira, Nass, Wagner, 2009:15583) (Pashler, 1994:241), it is evident that there is a before and after in the development of ICTs, and the classrooms of the educational system are a manifestation of this.

It is interesting to note that in the 1950s Edward T. Hall, who carried on an important exchange of ideas with McLuhan at a time when the latter had begun to develop his principal hypotheses, had already coined the term "polychronicity" to describe the ability of some individuals, and more importantly some cultures, to attend to various tasks at the same time as opposed to sequential performance of tasks (Hall: 1959). Hall's typology, which up to the present has had great success in the field of management, makes reference to what is currently known as multitasking - one of the main qualities attributed to so-called digital natives.

Alessandro Baricco seems to take the consequences of the new cognizance to extremes when he states that "Google is the Barbarian camp in the nomad territory of the Internet" when referring to digital natives (Baricco, 2006:112). The essayist and novelist calls them the

new barbarians because they are destined, as a consequence of their appropriation of ICTs, to dismantle all the mental tools inherited from nineteenth century romantic bourgeois culture. The superficial in place of the profound, speed in place of reflection, sequences in place of analysis, web surfing in place of depth, communication in place of expression, multitasking in place of specialization, pleasure in place of effort (Baricco, 2006:2009) flow in place of space, the suppression of time...the triumph of electrical circuitry over typographical culture.

2. With Yesterday's Concepts

Imnumerable confusions and a profound feeling of despair invariably emerge in periods of great technological and cultural transitions. Our "Age of Anxiety" is, in great part, the result of trying to do today's job with yesterday's tools, with yesterday's concepts.

McLuhan, Fiore, 2001

As pointed out above in reference to Scolari, McLuhan's theoretical framework had not touched upon computers in general and the Internet in particular while focusing on other electronic media, from the telegraph to television.

Today, much more so than almost three decades ago when McLuhan first coined the term, we indeed live in a global village, one interconnected by the Internet. So McLuhan was prophetic about the global village, although he did not anticipate the communication medium (the Internet) through which it would occur.

Rogers, 2000:129

In reality, McLuhan didn't foresee the importance that computers would acquire as a means of communication, probably because at the stage of development that computers had reached in McLuhan's time they were basically considered as a system for processing data. In 1978, in response to questions from Bruce Powers, he stated that the greatest benefit that a non-specialized user connected to Internet could obtain would be home information services (ordering food, machine parts, home security items, specialty items and even doing telework from home). From a more general perspective the computer could be used as a research and communication instrument for the massive recuperation and organization of libraries, owing to its data processing quality. Another virtue of computers would be their potential as time saving devices, generating more free time that would allow for greater development of the individual's personality. (McLuhan, Powers, 1990:43)

He also gave timely acknowledgments to the computer's contribution to industrial automation. (McLuhan, 1994:351)

However, it must be taken into account that McLuhan died in 1980 when the most extended domestic applications were electronic mail and bulletin boards. The Apple II was launched on the market in 1977 and the IBM PC in 1981. The World Wide Web wouldn't be established until 1989 and the Internet was popularized in developed countries a year later. The First book that would publically call attention to the social aspects of the Web, *The Virtual Community: Homesteading on the Electronic Frontier* by Howard Rheingold, was published as recently as 1993.

Neil Postman, who in many aspects is a disciple of McLuhan – albeit a critical disciple, partially contributes to the latter's vision concerning computers when he states that computers are highly oriented towards processing the technological aspects of communication, but not its context:

With the exception of the electric light, there never has been a technology that better exemplifies Marshall McLuhan's aphorism "The medium is the message." The computer is almost all process... Postman, 1993:118

In 2000, this author's inability to see the potential the Internet already had as a communications medium made his position even more vulnerable:

Obviously, the Internet does that and we must give all due praise for its efficiency. But it does not help us, neither does television or any other 19th- or 20th-century medium (except perhaps the telephone), to solve the problem of what is significant information. As far as I can tell, the new media have made us into a nation of information junkies; that is to say, our 170-year efforts have turned information into a form of garbage. My own answer to the question concerning access to information is that, at least for now, the speed, volume, and variety of available information serve as a distraction and a moral deficit; we are deluded into thinking that the serious social problems of our time would be solved if only we had more information, and still more information. Postman, 2000:10

But surely Postman's lack of perspective is less a consequence of McLuhan's influence on his viewpoint concerning computer technology than a result of the American communicologist's valuative attitude towards the media, a position that McLuhan never held at the academic level, which leads him to view the written text (books in particular) as almost the sole support of progress and rationalism - which would basically explain his rejection of computer technology.

Authors of the Toronto School, of which McLuhan was a founder, later ascribed a particularly important role to the Internet. Such is the case of Derrick de Kerkhove, who has suggested that the Web is a new step in human evolution – due to its impact on cognizance – much as the alphabet was in its time (1995).

In reality, one of the most controversial aspects of McLuhan's theoretical framework continues to be his idea of technological determinism. (Rogers, 2000:126)

Castells argues against technological determinism by stating that the social history of technology demonstrates that the relevance of a determined technology and its acceptance by people in general is not a product of the technology itself, but of how individuals and collectives appropriate it to satisfy their needs and the needs of their cultures (Castells, 2009:470). Without denying the impact that technology has on society, Castells, in contrast to McLuhan, centers his analysis on the Web society – a society that, in this author's opinion, characterizes the early 21st century, and which is a social structure built around (but not pre-determined by) digital communication networks (Castells, 2009:24).

This debate always resurfaces explosively with the emergence of a new technology that rapidly becomes hegemonic. It happened with the introduction of television and was reborn with the rise of Internet. The striking thing is that many of the determinists' arguments

are recycled versions of Harold Lasswell's "Hypodermic Needle" or "Magic Bullet"⁶⁰ theories (Lasswell, 1971), although they fall short of McLuhan's idea of the corporeal extension.

3 With Tribal Drums

Certainly the electro-magnetic discoveries have recreated the simultaneous 'field' in all human affairs so that the human family now exists under conditions of a 'global village.' We live in a single constricted space resonant with tribal drums.

McLuhan 1962: 31⁶¹

One of the greatest examples of digital technology's capacity for impacting on society is the social site known as Facebook, which is perhaps the unanticipated global village of the 21st century.

But Facebook, like other similar sites, is above all an interactive web of social networks, and the precise determining factor of its success is its adaptation to the needs of its users.

Facebook unifies almost all known computer driven personal intercommunication platforms in a single space. On Facebook it is possible to participate in a renewed, and almost random, version of the old news forums (or bulletin boards), view and post photographs or videos, converse in real or virtual time, download and view video clips, play videogames individually or collaboratively, send and receive e-mail, make purchases or sales on-line and access chat rooms.

All this in a single interactive space with mobile frontiers in which the idea of time and space seems to dissolve.

The social sites combine the gregarious nature of the species with a type of communications technology that is unprecedented in history. McLuhan describes this new reality with a definition that could very well be that of the global village:

The circuited city of the future will not be the huge hunk of concentrated real estate created by the railway, It will take on a totally new meaning under conditions of very rapid movement. It will be an information megalopolis.

McLuhan, Fiore, 2001

Isn't Facebook in some way an information megalopolis? There are other platforms that also allow for interpersonal communications in real time and that conform to a social network whose center is the user⁶². A good example of these platforms is Instant Messenger. But the networks created on the base of this platform are characterized by their homogeneity; they are networks of contacts whose attributes are similar to those of the central user. Similar

60 The first edition of the book *Propaganda Techniques in the World War I* dates from 1927.

61 Rogers, Everett M. (2000) *The Extensions of Men: The Correspondence of Marshall McLuhan and Edward T. Hall*, *Mass Communication & Society*, 3(1), 117–135, Routledge.

62 Regarding this characteristic, Barry Wellman coined the idea of *collective individual or networked individualism*, one of the pillars of his theoretical conception (2000:38).

age, similar economic, social and cultural capital. In fact, most of the people on the Instant Messenger lists of contacts also interact face to face or have interacted at one time or another. The lists very rarely include people that have never been met in person (Gascue, 2009:151).

Contrarily, in the networks generated by Facebook the number of contacts of which the user has never met in person is significantly higher. (Boyd, 2006:3) (West, Lewis, Curie, 2009:619)

In reference to another social site, Myspace, Danah Boyd points out:

By having a loose definition of Friendship, it is easy to end up having hundreds of Friends. While Collectors on MySpace have thousands and sometimes millions of Friends, many active users have hundreds. Because of how these sites function, there is no distinction between siblings, lovers, schoolmates, and strangers. They are all lumped under one category: Friends
Boyd, 2006:10

In Facebook's networks of contacts there are friends, family members (paradoxically with restrictions) and mere acquaintances, but there are also many unknown people.

Quite often in Facebook the affinity between individuals is more important than geographical proximity. Contacts are not accepted or added to the list simply because they are known in person, but because they are deemed to be part of a group that transcends local boundaries; they are all inhabitants of the global village.

The global village has no geographical boundaries and, due to the universalization of English, a diminishing number of linguistic boundaries. Although there are other boundaries, such as age, socio-economic status or occupation, they are probably weaker than the same types of boundaries that exist in face to face interaction or in other Internet platforms.

To give an example of the above statements, a gay teenager living in a small rural town is not alone. Via Facebook he is part of a network that allows him to express his singularity and receive emotional support from his peers... and all in real time! In his little town he might be considered a "freak", but he will never be a "freak" in the global village. This vital experience was, at least in Latin America, almost impossible as recently as fifteen years ago and could be applied to any locally segregated minority.

If Facebook is symbolically McLuhan's unanticipated global village, then tweets are its tribal drums.

Some authors have stated that blogs are already outdated due to saturation (Pardo Kuklinski, 2010:90) or because of the appearance of nano or microblogs for producing minimal messaging, which never exceed 140 characters and circulate through cyberspace at a rate of tens of thousands per hour. These miniarticles can be sent through e-mail or by mobile phone, or appear on the user's wall on Facebook⁶³. From the perspective of interpersonal communication, the narrators/personalities invariably deal with a crucial topic: What are you doing at the moment? Twitter attracted five hundred thousand enthusiastic users in the first few months of its life thanks to the sales pitch: Enjoy an intimate virtual presence, always connected, with colleagues and friends. The trend seems clear – at least in these arenas: accounts about users tend to be more and more instantaneous, present, brief and explicit. (Sibilia, 2008:157)

José Pazo Espinosa claims that the result of these practices is the oralization of writing. In his opinion writing is adopting the traits of speaking: immediacy, acceptance of error (ana-

63 Currently, it is also possible to access the Facebook wall from Microsoft Instant Messenger.

colution in oral language), predominance of synthesis and simplification and inclusion of affective aspects (intonation in speaking, emoticons in writing). (Pazo Espinosa, 2009)

The success of the tweets' 140 characters, as would be obvious to expect, fed speculations as to the emergence of a new type of cognizance, a topic that was referred to at the beginning of this paper. For years hypertextuality, and now the walls of Facebook and tweets, has seemed to be at the same time both consequence and cause of this new mode of learning reality:

As McLuhan suggested, media aren't just channels of information. They supply the stuff of thought, but they also shape the process of thought. And what the Net seems to be doing is chipping away my capacity for concentration and contemplation. Whether I'm online or not, my mind now expects to take in information the way the Net distributes it: in a swiftly moving stream of particles. Once I was a scuba diver in the sea of words. Now I zip along the surface like a guy on a Jet Ski. Maybe I am an aberration, an outlier. But it doesn't seem that way. When I mention my troubles with reading to friends, many say they're suffering from similar afflictions.

Carr, 2010:8

The inhabitants of Facebook and its Short Message Service (Twitter) have superseded the paradigm of classical modernity and their perception of the public and the private is no longer that of bourgeois society. Digital natives, although they are by no means the only ones, exhibit their lives with a perseverance that has not been seen since the time of the Sun King, Louis XIV - democratizing the ceremonies of representation that had formerly been the exclusive privilege of the nobility, or more recently of the jet set. This strays very far from the intimacy peculiar to industrial capitalism.

4. It Is a Relation in Depth

Many analysts have been misled by electric media because of the seeming ability of these media to extend man's spatial powers of organization. Electric media, however, abolish the spatial dimension, rather than enlarge it. By electricity, we everywhere resume person to person relations as if on the smallest village scale. It is a relation in depth, and without delegation of functions or powers.

McLuhan, 1994:256

McLuhan saw that one of the main consequences of globalization is cultural homogenization, particularly among sectors fully integrated in the information and communication society. As Marshal Berman pointed out, Marx, in the Communist Manifesto, had already revealed this universalist tendency of capitalism and its consequences: production, consumption and human needs would increasingly become international and Cosmopolitan, and the sphere of human desires and demands would expand well beyond the capacities of local industries, which as a consequence would flounder. The scale of communications would become global, and technologically sophisticated means of mass communication would play a relevant role in this new reality (Berman, 1982:85). When Marx referred to the media he was referring to transportation media, but also to the telegraph – the medium (the social hormone) to which McLuhan would give a special place in his concept of the electrical age.

The World is currently learning of a type of conflict that is not far from the logic that,

from his own perspective, McLuhan formulated:

Our speed-out today is not a slow explosion outward from center to margins, but an instant implosion and an interfusion of space and functions. Our specialist and fragmented civilization of center – margin structure is suddenly experiencing an instantaneous reassembling of all its mechanized bits into an organic whole. This is the new world of the global village.

McLuhan, 1994:93

From a macro perspective, recent events in the Middle East and North Africa are not alien to McLuhan's reasoning. Global media and instant communications have erased the borders between the center and the margins. For that reason it is not surprising that social groups, especially young people, rose up in rebellion in the hope of obtaining the homogenization of their societies with the central societies (or at least part of their societies). It is evident that the leaders are highly educated, but feel that they have been left at the margins of the information society, not only as consumers or citizens, but as full human beings. Broadband sustained media played a leading role in the events, but not simply because these media are within the reach of many people; they played this role because some people are aware of their potential⁶⁴. This is not without precedence (elections in Korea in 2002, Spain in 2004, the United States in 2008, civil uprisings in the Philippines in 2001, Ecuador and Ukraine in 2005, Nepal in 2007).

With the diffusion of Internet there has risen a new form of interactive communication characterized by the capacity to send messages to many people in real or virtual time, and with the possibility of point to point communication. Castells calls this historically new form of communication mass autocommunication. The three forms of communication (interpersonal, mass communication and mass autocommunication) coexist, interact, and, rather than substituting each other, they complement each other (Castells, 2009:88).

But the reaction of governments has never been as explicit as those in the Middle East and North Africa, who tried to totally suppress Internet and mobile telephones with the same determination as in the launch of physical repression. This attempt failed in the case of broadband, because in the scenario of the global village it is no longer possible to block the flow of communication, especially the flow of computer driven communication given that mass autocommunication provides new opportunities for social change in a society that is organized, in all fields of activity, around a meta-network of electronic communication networks. Reprogramming of communication networks presents a considerable change in the exercise of power (Castells, 2009:531).

Added to this was the interrelation of Facebook and Twitter with the Al Jazeera television network, which at decisive moments allowed for the continuity of communication⁶⁵.

The latest events in these regions of the world are still in progress and we don't know their long term consequences, and once again referring to Castells, being that not all movements are progressive in nature – there are also movements of identity and resistance (Castells, 1998:30); opposed to the homogenization of the margins, to use McLuhan's terms; an-

⁶⁴ An illustrative example of this is the case of Wael Ghonim, a senior executive at Google, who turned into one of the leaders of the rebellion in Egypt.

⁶⁵ The studios of Al Jazeera received telephone calls from protesters asking that they continue broadcasting from Tahir Plaza as a safeguard against repression.

chored in the Middle Ages even though their integrants make use of smartphones and blogs, and circulate videos over global television.

As seen from this vantage point, the global village is not only a social network of individuals, but one of individuals that communicate with each other, that generate their own messages, and that receive messages from the media with the ability to resend them. They can express themselves in oral, written and visual form.

Facebook and Twitter have proven to be highly effective in this function.

In any case, it does not cease to be an unsettling paradox that these platforms are private, that is to say their administration - according to the government line of reasoning that we are developing - is in the hands of private businesses that have the last word concerning inclusion or exclusion of people and topics⁶⁶. This is no insignificant matter and is an object of reflection for civil society as well as governments.

5. Conclusions

The passing of time, far from wearing away at McLuhan's theoretical frame work, has strengthened it, making this author essential for understanding the role of the most technologically advance media of our era. It is of no minor consideration that in 1964 McLuhan defined our era as the age of information and communication (McLuhan, 1994:248), almost two decades before Yoneji Masuda or Castells.

As to another of his central concepts, although the social sites are not the global village in themselves, they are its best symbolic expression. Members of Facebook have unintentionally refuted Thoreau⁶⁷, being that the inhabitants of "Maine" now speak on a daily basis to those in "Texas" (and we can even know what they are talking about) and we no longer doubt that there are users who exchange comments about a "princess' whooping cough" in real time between continents.

It is a fact that members of Internet sustained social networks tend to group themselves more along lines of affinity than of geographical proximity.

At present, diverse platforms capable of sustaining networks of personal interaction are associating with and complementing each other in a way heretofore unknown.

This complementarity is not solely due to a development strategy of the businesses that created these platforms, but also to the demands of users who, through clicks on a mouse, determine the success of a platform. The high level of porosity in the boundaries between the platforms says much about the users...and about the relevance of McLuhan.

⁶⁶ In many cases this is done at the request of the users themselves, although it is doubtful as to whether this is a form of democracy.

⁶⁷ Thoreau, H.D., 1854, Walden: "We are in great haste to construct a magnetic telegraph from Maine to Texas, but Maine and Texas, it may be, have nothing important to communicate... We are eager to tunnel under the Atlantic... but perchance the first news that will leak through the broad, flapping American ear will be that the Princess Adelaide has the whooping cough."

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The Brazilian Production of Television Fiction Serial

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1. Introduction

In a transnational world, where communication becomes a machine to connect and disconnect a variety of information circulating in an unlimited time and space, television stands out as a media device because it provides an audiovisual resource that offers a wide range of heterogeneous products, which are built in accordance with the modes of subjectivity a particular society expresses itself. For the creation of its content, television covers a large number of actors and institutions, involving political, economic and social agents. On this line of thought, the term *television industry* might be understood as a technological device and as a socio-cultural phenomenon.

In 1947, Adorno and Horkheimer, Frankfurt School's most active scholars, when formulating the concept of "cultural industry", would criticize television, accusing it of being a structured vehicle built around the vision of the ruling class, which, when exploring the standardized entertainment forms, limited individuals within an ideology created by the common sense of Western capitalism, a "mass culture". In the 1960s, due to computers' and telecommunications' technological revolution, Marshal McLuhan chose television as a mass medium, and that new form of seeing it generated numerous academic studies on the understanding of its effects on contemporary imagery.

What interests us to reveal through the investigations of the historical processes of identity formation and affirmation of the TV has, with no doubt, contributed to legitimize it as an audiovisual device, equipped with the latest technologies in the field of sound and image, with significant penetration in everyday life, through which a certain culture expresses itself in its various forms.

In the contemporary time, it is undeniable that television, through of their products, is the vehicle that more effectively transmit the cultural expression of a people. Unlike news and popular programs, televisions shows, the television fictional stories, through their dialogues, settings and characters, reflects the way of life in each people's respective countries, acting as an existential mediator between the individual and the world.

The phrase "Narrating the nation: an imagined community," in the opening chapter of a book by Stuart Hall, brings together the ability of fictional narratives - both the literary and the visual aids ones - to create a symbolic space of representation of identity processes:

A national culture is a discourse - a way of constructing meanings which influences and organizes both our actions and the conception we have of ourselves. National cultures, by producing mean-

ings about "the nation", senses with which we can identify, build identities. These meanings are contained in stories that are told about the nation, memories which connect its present with the past and that her images are constructed. As Benedict Anderson argues (1983), national identity is an "imagined community" (Stuart Hall, 1998, p. 50).

Television programs, be it soap opera, talk show, series, guarantee conversation in social media, discussions and disputes of knowledge, working as an essential factor in the cultural universe of the individual. The television would then be thought of as a mediator between society and the receiver, which produces aggregation social and cultural integration, as well as being responsible for the introduction of new socialites, making it an element of the regulatory function of social system.

2. The fictional narrative television

One of many reasons why I think art is an interesting area to study is because it represents a type of social organization that operates much more non-planned and often lawless than we would like things to work in our society (Becker, 1977, p.25).

The essays on the concept of fiction, based mainly on literary and cinematic tradition, sought to question the boundaries between the real and imaginary, between conception and representation.

Transcending the boundaries of each medium, the impossibility of capturing the extent and complexity of each language, the study of narrative fiction as discursive organization derives from the need of investigating the dynamics of approach and communication gap between the objective world and the subjective world. What was at stake does not depend on reality or unreality of the object represented, but on the form of representation-staging of the world. Nowadays, we discuss the ways fictional narratives, be they literary cinematic or artistic media, refer to its impact on the construction of identity and social order.

In the case of television, the original form of television fiction was based on the formula that marked the melodramatic structure of the novel-pamphlet, which has its origin in the evolution of the media of mass circulation of newspapers in Europe from 1830 on. The urgency to address to a mass of newly literate readers, and having the intention to democratize the literary text, brought about the need to create a fragmented narrative, considering that each chapter published in a day should incite the reader's curiosity and prompt him or her to consume the next edition of the journal. The novel-pamphlet marks the industrialization of the literature and the establishment of a text with a dramatic plot and sensational appeals.

The formula of melodrama concentrates certain principles that correspond to the aspirations of bourgeois society in the second half of the nineteenth century: love, personal fulfillment and happiness (COSTA, 2000, p.33), indicating the possibility of living dreams and fantasies. The issues discussed revolved around the emotional dilemmas, conflicts generated by social discrimination, the victory of good over evil. T

The theorists of the Cultural Industry would point out that this kind of entertainment was aimed at the imitation of reality, generating in the receiver a sensation of comfort and

identification, putting him in a passive and depoliticized position.

The German philosopher Jürgen Habermas would review the concepts of the effects of the media as producers of structured symbolic codes on the logic of the commodity, admitting that cultural products, to make public representations identified, allowed the individual to make a reflection on what he was getting. In the wake of this thought, Leonardo Avritzer proposes “to replace the idea of cultural industry by a conception of reflexivity provoked by cultural production in relation to conceptions of life inherited or transmitted in the traditional manner” (Avritzer, 1999, p.168).

The introduction of the concept of reflexivity, in the case of fictional stories on television, would introduce the idea of a not so passive receiver, who would be endowed with the possibility of interpretation and experimentation. Among the various components that exist on the subject for our study, it is worth mentioning the concept of Thompson when he says:

An individual who reads a novel or watches a soap opera is not simply consuming a fantasy, he is exploring possibilities, imagining alternatives, experimenting with the design of the self.’
(Thompson, 1998, p. 202).

Reflexivity studied by Antony Giddens, in his book *Modernity and Identity* (Giddens, 2002). Giddens asserts that in the high modernity – as he classifies the arrival of the twenty-first century - the influence of distant events on upcoming events, on the intimacies of the self, becomes increasingly common, and highlights the importance of the media in this process.

As daily life becomes subjected to greater speed and access to a plurality of information, is being reconstituted in the realm of the dialectic of local and global, public and private, individuals become forced to choose a lifestyle based on a variety of options that pass to constitute their own identity. In today’s world, characterized by the breaking with the traditions, practices and principles already pre-established, as Giddens points out, it becomes necessary for individuals to establish a self structure that direct his or her position in relation to the world. With each new situation, each new information received, the individual is forced to reorganize his or her life.

In the wake of this thought, the fictional stories on television, instead of taming the identities, help in the process of testing news experiences in the identity construction. In mediated contact with different realities and experiences presented by the characters, individuals are encouraged to reassess their values, their own life trajectory.

This thought permeates the notion that “social construction of reality” (Berger and Luckmann, 1995) is the constant interaction of the individual in communication with another, and with the universe. This universe, situated in a particular place and in a certain historical time, consists of a set of values, standards, references, modes of action and habits that guide the actions of the individual and is susceptible to changes and updates from the approaches and ruptures, recognition and strangeness in the broader framework of values that constitute it.

(...) situate the cultural texts in their social context implies drawing the joints by which societies produce culture and how culture, in turn, conform to society through its influence on individuals and groups. (Kellner, 2001, p.39).

The understanding, analysis and interpretation of the various discourses produced in one

culture contribute to the transformation processes inherent in every society, seeking its reorganization.

The fictional television stories work, thus, as a mediator between different realities and experiences, helping to shape the creative process of identity construction, which can be considered as elements of ramming and structuring of individual and social conflicts.

... images of other lifestyles are a resource that individuals have to judge critically their own living conditions. (...) The mediated experience is an experience of another, it cultivates the faculty of imagination of the individual, which becomes increasingly able to see yourself in another's place, in a new situation radically different. (Thompson, 1998, p.157 and 167).

Therefore, we would be admitting that the fiction narratives, whether they be literary, audiovisual or medium, by the artifice of narrating a story, to entertain, would be assisting the receptors in the production of new meanings for his conception of the world and about themselves.

3. The Brazilian soap opera

What has made the soap opera a strategic enclave for audio visual production in Brazil is its weight in the TV market and the role it plays in the production and reproduction of the images that Brazilians do on their own, and through which they recognize themselves. This fact alone would be enough to make it indispensable to reflect on the different meanings of the soap opera at the national level. However, we cannot ignore there was also its regional and transnational importance. (Lopes, 2004, p. 17)

The Brazilian soap opera still occupies a hegemonic place when it comes to fictional narratives. With a specific structure, whose origin mixes the literary feuilleton and the broadsheet newspaper, the narratives of soap operas are essentially melodramatic. They reproduce daily relations, with easy popular acceptance, and in a language that absorbs the speech and the customs of the Brazilian different social classes. Dialogues and scenarios are built to show the concerns, values and the dramas that pervade the daily lives of viewers.

What has been pointed out by researchers of soap opera is just the close relationship between soap opera and society, between fiction and reality.

In Brazil, the first attempt at a sequential history was in 1951, *His Life Belongs to Me*, by Walter Forster, broadcasted on Tuesday and Thursdays live. But the daily soap opera has only emerged in 1963 with *2-5499 Busy*, aired by TV Excelsior. In 1965, *The Right to be Born*, presented by TV Tupi, achieved such a great success with the public that the networks began to produce soap operas systematically.

Built in 1965, *Globo TV*, *Globo Organizations*, soon the station accomplished the position of the most capped in the field of soap opera, becoming it his most popular and profitable product. (Lopes, 2005). Therefore, when referring to the production of soap opera in the country, have, inevitably, the *Globo TV* as a reference. Although it is presenting a new framework for other broadcast television networks - specifically TV Record – with other proposals for narrative, we can not consider this new framework as a representative of the standard soap opera in Brazil.

The contents of the soap opera plots are constructed upon popular dramas which are considered of easy acceptance since they re-interpreted the viewer's daily lives. Actually, these plots are so successful because they work as an exercise whose purpose is for the people to identify immediately with the characters and situations presented, rather than to question or to argue the introduction of new values. On average, the plot of the soap opera is composed of central conflicts and secondary conflicts with several groups of characters and places to be rolled out over an average of 160 chapters, presented daily. The plot follows a linear narrative structure, in which each chapter is a variation of at least two stops is interrupted at least twice for the entry of commercials of products, services or of other programs from the same network, the so-called breaks, implying the need for the script to create a mechanism for this arrest not to interfere in the development of the story, and also to stimulate the viewer's interest for him not to leave the front of the screen. The end of each chapter presents a thriller that will "tie" the viewer, arousing one's curiosity in such a way that one will be again sitting in front of the TV set the next day, on the same channel, at the same time. Lasting about eight months, only the last chapter presents the solutions for all the disputes submitted during so many months.

The narratives embrace standard themes in a melodramatic line, that includes topics such as social mobility, children who are unaware of their true origin, love stories shaped by conflict and sentimentality, socially constructed interests which correspond to a symbolic appeal, this in a cultural context mediated by the popular taste, the common sense. The assembly of the conflict is based on dialectical basics: villain and victim, and poor and rich. Social issues are highlighted, as the rise or fall of class, which is always a factor present in these narratives. On the other hand, political issues rarely appear in the plot.

The cast is generally composed of 50 to 100 actors/characters and the story is constructed with one principal conflict and others secondary. The secondary conflicts are used to entertain the viewer with issues that insert dialogues of little consistency in situations that are repeated as a resource for maintaining the people's interest in the story for the 160 chapters.

Generally, the author of a soap opera counts on a team to support the daily work, writing with him throughout the journey. The screenplay is originally built within a basic structure, which is subject to change by public acceptance. Sometimes there is an actor that is not pleasing, or it is the character and then, as there is a need to keep the audience, the author is impelled by the soap opera television network to modify the plot in order to satisfy the public taste. We have a process of dilution of authorship, i.e., the novel does not fully represent the fiction directed by the author, but a fiction that is driven by the need of involving the audience as much as possible. Often, when the end of the novel is near, the outcome of the conflicts is resolved in accordance with the measurement of the audience.

Given these characteristics, the matters discussed in the narrative will 'belong' to the cultural universe of the viewers, will bring about work how a materials for conversation with peers, for discussions, for social interaction. Moreover, the soap opera is responsible for introducing new forms of sociability, making it an element in the regulatory function of the social system.

This is why I say the television as a vital social connection. In a society where individuals are often isolated and sometimes lonely. (...) offers a new instance of social relationships in an individualistic society of masses. Also, television is the only activity that establishes the link between rich and poor, young and old, rural and urban. (...) Everyone watches television, everyone is talking about television. Is there an other activity that is today so cross about television? (Wolton, 1994, p.64).

For these relations, the soap opera is a product that has the responsibility to meet the needs of a broad and diverse audience hence its content tends to gather standardized collective dramas.

With its popularity in recent times, the production of soap operas has been engaged in introducing subjects still perceived as prejudiced, outside the standards of common sense, like such as alcoholism, homosexuality, racial prejudice, and the new patterns of contemporary family structures, always based on a research that measures public acceptance. In the exhibition of controversial issues, it is felt that the language used in the narrative of soap operas is always didactic, intended to facilitate understanding. These themes are still hard to accept because the public morals are more conservative. Nevertheless, these topics have been introduced in soap operas because they are having media visibility, which requires that the fictional stories show a product in agreement with the current culture.

We know that TV fiction is a strategic market for audiovisual of Latin American, with the paper to produce images that these countries make of him self and through which they recognize themselves culturally. In Latin America, the production of soap operas provoked the formation of *Obitel - Centre Ibero-American Television Fiction*, an international research project with member countries as Brazil, Mexico, Venezuela, Colombia, Chile, Argentina, Portugal, Spain and the United States (Hispanic speakers).

Brazil made history with the export of soap operas produced by *Globo TV* such as *Slave Isaura*, *Dancing Days*, *Roque Santeiro* and *Terra Nostra*. These programs have achieved notable levels of audience in many countries throughout Europe and Asia- Recently, the increasing co-productions between Latin American and Iberian countries and the entry of Latin American soap operas in the global audiovisual market, certainly shows the level of development achieved by the television industry in these countries and, to some extent, it also means the disruption of the line demarcation between north and south, between countries destined be producers and those expected to be exclusively for consumers. While *Globo TV* is associated with *Telemundo*, the second network and the U.S. Hispanic arm of Sony Pictures Entertainment to co-productions intended solely for the domestic market, the *SBT TV*, other private television in Brazil is also trying to co-produce with Univision in the United States which is associated with the Mexican *Televisa*, that concentrates more Latin America and U.S. Hispanic audience, which has achieved enormous success with *The Rich Also Cry* and *Simply Maria*.

One factor to be considered is the spread of digital and mobile technology. In this new universe where the audience becomes not only the receiver and starts to produce and transmit knowledge, television had to revise their logic not only as marketing strategies, as well as the reconfiguration of its contents. Noting the entertainment industry, Henry Jenkins (2009), media researcher who studies the important cultural transformations that are occurring around the new media, appointed the denomination *transmedia storytelling* to the narratives that unfold across multiple platforms, appearing to each in a different way, often with different texts, thus magnifying the fictional universe.

With the implementation of the new Brazilian system of digital broadcasting in December 2007, available in 26 regions, reaching over 60 million, allowing for for portability and mobility and interactivity, the viewer now has direct participation in television programs, creating new spaces communication and socialization. Today, soap operas and miniseries have a site with sections on characters, chapters, racks and even with access to the blogs of authors and characters themselves.

As an example of transmedia, we would emphasize the soap opera *Passage to In-*

dia, shown in 2009 in prime time (9 p.m.), at TV Globo, written by Gloria Perez, who won the International Emmy Awards, prize that recognizes television productions made outside the United States. The website created for this soap opera, and provided for navigation synopses of the chapters, interviews with actors, polls, and has also posted the invitation to other platforms, like mobile phone, email, twitter and blogs linked to the plot. These blogs have become a permit interactivity with the viewer, allowing comments on the outcome of the plot, and that creates a new interactive strategy by encouraging “creative hearings” (Castells, 2009).

4. The Brazilian Television Fiction in the Global Market

When Marshall McLuhan proclaimed that technological progress would transform the planet into a village, he could not scale where he was getting at. Now, with the development of digital technologies and the intensification of transnational media flow, this concept proves entirely consistent with the current reality.

These new arrangements have led to transformations in television, not only with regard to its technological support as well as with its role in contemporary society.

The advent of cable TV, which began in the United States of America in the 40s as a way to provide small communities with good quality signals picked up by a cable, would expand the possibilities regarding the transmission of signals from conventional channels of broadcast television, ushering in the most efficient means of dissemination of information. Since this mechanism, it was established that to pay for having better and more exclusive TV programs was beneficial, and that led to other means of distribution besides cable (coaxial or fiber optic), as the satellite (DBS / DTH) and the radio spectrum, microwave (UHF and MMDS). This is actually a communications service that offers viewers, through any of these facilities, selected programs by paying a membership fee and monthly fee including the cost of the converter or decoder connected to the TV responsible for the free reception of the signal.

Technological advances in the area - improving the means of distribution of signals, such as *Direct Broadcast Satellite*, satellites equipped with *C-band* signals that transmit directly to ground stations placed in homes and buildings; *Direct to Home*, which runs through digital signals from satellites equipped with so-called Ku-band high power for direct reception by domestic small size antenna (about 45 cm in diameter), the *Multichannel Multipoint Distribution Service* which, through multidirectional microwave frequencies, generated by a turret, is capable of achieving multiple channels in several different spots, fiber optics and digitization of signals. This has resulted in a significant expansion of the channels and extended the possibility of reach of cable TV.

In U.S., the growth of pay TV made some of Hollywood movie studios to invest in creating branch canals. Among them we can highlight in the entertainment industry: the Fox (20th Century Fox Film Corporation), the channel MTV (Viacom-Paramount Pictures), the channel Sony (Sony Pictures Entertainment), Universal (NBC Universal), Warner and HBO channels (Warner Bros. Entertainment), and the channel Walt Disney (Buena Vista Motion Pictures Group at The Walt Disney Company).

Cable television in Brazil had its beginning in 1958. However, due to communication policies and economic policies, its implementation it just took place from started only in

1989. In 1991, major media groups have joined the sector, but allowed the *Globo TV* to make the largest volume of investments by creating a greater number of channels of cable TV.

The pay TV market in Brazil has grown considerably. In 2000, there were 3.4 million registered subscribers. However, due to the economic stability that Brazil has been experiencing since 2002, classes C and D started to have access to the use of pay TV. Currently, Brazil has around 10 million cable TV subscribers, making it the largest pay TV market in Latin America, surpassing Mexico, who used to hold occupying that position. The estimated number by BTG Pactual bank, presented in Congress on subscription TV in 2010, implies that the penetration of pay TV market could jump from the current 15% to 40% by 2014, reaching 18 million subscribers. At best, the bank executives believe that this penetration could reach 26 million subscribers, or 45% of the nation population. It is believed there is a market of 26 million households in classes A, B and C with the potential for pay-TV.

In the current scenario of globalization, the growth of pay-TV would increase the flow of import-export of television fictional narratives. In the United States, from the 80s on, there was a boom in production of series. Universal Channel, AXN, HBO, Fox, Warner, and Sony offer a huge range of options ranging from realistic dramas, sitcoms, to criminal action, serving a diverse audience, and following the different age groups. There are sitcoms that achieve audience of more than 10 million viewers, as it was the case of *Friends* (1996), *Sexy and the City* (1998), *The Sopranos* (1999, production of HBO), *Lost* (2004), *House*(2004) and *Heroes* (2006).

In the field of Brazilian audiovisual industry, there is a significant change in the soap operas TV market,, which now has to compete for audience with products made by cable TV channels - mostly American sitcoms.

This fact shows us a television fictional narrative crisis in Brazil, which has been making attempts to create new formats and languages to re-capture the audience lost.

According to the Professor of Drama School of Communications and Arts (ECA) of USP, Renata Pallottino, soap operas have suffered direct competition with cable TV and the Internet. "There are more alternatives now," said Renata Pallottino. According to Renata, the quality of the texts of soap operas needs to be reviewed.

It was witnessed in the last two years, for example, a massive investment of *Globo TV* in producing serials and miniseries as an attempt to seek new formats and new languages in line with the aspirations of society of the XXI century.

In 2009, it was produced 41 television fictional narratives and that of 41, 31 were made by *Globo TV*. Of the 31 productions, 15 were series and miniseries which pointed to a new perspective on activity of the largest issuer open TV in Brazil. This fact demonstrates the willingness to try new formats and new content to test public acceptance. However, the soaps operas are still the product of that attract bigger audience.

Among the series worth mentioning in Brazilian TV, there is *The Great Family*, which has been on display for ten years, as standing as the most ancient series on television. It is considered the highest-rated due to the approach – with humor portrays of the relations of a middle class family in Rio de Janeiro. One of the reasons that contributed for the success of this series is the cast of actors, who has been able to seamlessly incorporate the speech of the characters, thus definitely gaining public sympathy.

In 2010, *Globo TV* continued to invest in new series with diverse contents, using topics as cops (*Task Force of the Law and Na form*), behavioral (*Separation and Life of Others*), mysticism (*The Cure*), and one set in hospital (*Emergency SOS*) However, the audience has not been

satisfactory.

In view of the challenge that has suffered the Brazilian television industry has to face in relation to their fictional products, and supported by the School of Communication, *Federal University of Rio de Janeiro*, and *FAPERJ -Research Support Foundation of Rio de Janeiro*, the project I have been developing aims to outline parameters of verification in order to organize studies so far largely fragmented, and work with a focus on production and receipt of that field.

To delineate a framework, as a methodological tool, for designing a profile model for the units recorded, chip analysis will be applied to collect observation variables entered in their respective fictional television productions. This tool is meant to identify the representations through which the identity resources are built. The aspects to be considered relate to the content (themes, the epoch, the social composition of the context), on the production (display format, filming, scenery, actors), on the aspects of storytelling (plot, story line, characters, actions, discursive language) and on the moral and ethical meanings.

It is believed that with this methodology an important contribution will be made to the discussion on the production of Brazilian television fiction and its interference in the global market. It is hoped that this material may stimulate academic institutions to think of the possibility of creating a discipline in the schools of communication studies.

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Education beyond the book

‘Everything About the Past’: Wikipedia and History Education

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1. Introduction

In a 2006 article under the title ‘Can History Be Open Source? *Wikipedia* and the Future of the Past’, historian Roy Rosenzweig (2006) reflects about the challenges *Wikipedia* poses to professional historians and tries to answer the question whether history could be open source. One of his points is that *Wikipedia*, despite some factual errors and issues of style due to the multiplicity of authors, is a valuable source of historical information. Rosenzweig (2006, pp. 126-127) notes that in the area of biographies of historical figures, *Wikipedia* competes with the classical and commercial rivals, and scores better than many of them in terms of coverage. He then wonders: ‘Why should we care?’ before providing his own answer: ‘One reason professional historians need to pay attention to *Wikipedia* is because our students do’ (*Ibid.*, p. 136). In this paper, I want to discuss *Wikipedia* as it was used by 13-14 year-old pupils during their history classes at two schools I observed for a period of six months in the Netherlands. One central point I was interested in was the claim that the World Wide Web has given access to a variety of sources. What follows is mostly based on the analysis of written assignments in those classes, where *Wikipedia* appeared as the first and most cited source of historical information. For each class, I will discuss the significance and place of *Wikipedia* in the learners’ opinion and/or based on its actual use in the assignments. In the end, I will suggest that *Wikipedia* has emerged as an ideal convergence platform for conventional and unconventional sources of historical information.

2. Case Study I

The first class I observed from April – June and then from September –November 2010 was at the Helen Parkhurst Daltonschool [HPDS], located in Almere, a few miles northeast of Amsterdam. As the school name indicates, the class applied the Dalton Plan, the teaching and learning approach initiated and developed by American reformist Helen Parkhurst [1886 - 1973] in the early 1900s. This approach is based on a number key principles, namely *freedom*, *self-regulation*, and *cooperation* (Van der Ploeg 2010, pp. 124-132; see also Parkhurst [1922] 1924, p. 16; Parkhurst 1951, p. xvii; Bokhorst 1924, pp. 19-20 & 33). Using their freedom of choice, the pupils chose assignments among four options: writing a fictional story about a child of their age in the Middle Ages, drawing a map showing the routes of the United East-Indies Company

[VOC] and of the West-Indies Company [WIC], and a WebQuest. I will only discuss the latter because it was the only one that clearly instructed the pupils to list, justify and then evaluate the online sources they used. The WebQuest could be defined as a Web-based assignment about a specific topic with specific guidelines and instructions on steps to be followed.

Among the WebQuests,⁶⁸ the pupils had to choose to work either on seventeenth-century Dutch painters or on the VOC. The various WebQuests had two parts: the *pre-research* part, and the *research-proper* part.⁶⁹ In the pre-research part, the pupils were requested to list their sources, and to indicate their relevance for the assignment, as well as the level of their reliability. In the research-proper part, the pupils had to write a piece of text with some illustrations. Following these instructions, the pupils had to 'collect data for each aspect about the painter [or the VOC]', and to 'make a good selection, so that the one viewing your poster can have an image of the painter [or the VOC] that is as precise as possible'. All the 8 WebQuests that were returned, including two jointly done by two pupils [which represented 10 pupils in a class of 26], were short summaries on different aspects – early and later lives, paintings, VOC birth, its aims, its history, *etc.*, and none of them contained quotations.

The most interesting part for the purpose of this paper is the pre-research one, which contained a list of online sources, a rating for and a short comment about each of them. As Table 1 shows, all the websites used for the WebQuest assignment could be classified into eleven categories, ranging from Wikipedia and the government-sponsored Historical Canon of the Netherlands, to academic, news, and personal sites:

Table 1: Categories of Web sources used for WebQuest assignments

		Pup 1	Pup 2	Pup 3	Pup 4	Pup 5	Pup 6	Duo 1	Duo 2
Wikipedia		1	1	2	?	1	1	2	1
Personal sites		1	1		?			1	2
Heritage sites	<i>Heritage Inst.</i>		1	1	?	1			2
	<i>Others</i>	1	1		?		1		
Commercial sites			1	1	?		1	1	
Educ. sites		1	1		?	1	1		
Official sites					?	2			1
News Media sites				2	?		1		
Canon of the NL		1			?		1		
General Info sites			1		?	1			
Academic sites		1			?				

The categories in this table appear in the order of frequency of use. The figures in each Pupil or Duo column correspond to the times each category was used for one WebQuest. Pupil 4 certainly used the online sources for her assignment on Rembrandt but failed to mention which ones.

⁶⁸ All WebQuests were taken from *Histoforum*, a website for 'ICT and History' run by retired history teacher Albert van der Kaap. <http://histoforum.digischool.nl/> (Viewed 21 January 2011).

⁶⁹ See the example of *Schilders uit de Gouden Eeuw* [Painters of the Golden Century] <http://histoforum.digischool.nl/lesmateriaal/internetgids5.htm> (Viewed 21 January 2011)

2.1 The 'first' source

Of all the ten categories of Web sources used, Wikipedia emerged as the most popular. All the pupils used it, at least once, except for Pupil 4 for whom uncertainty persists due to the lack of references. In all cases, the Wikipedia pages were the ones dedicated specifically to the subject, that is, to the painters or the VOC. For instance, Pupil 1 and Pupil 6 both worked on the VOC and cited the Wikipedia page on the VOC⁷⁰ as the first and second source, respectively. Pupil 3 worked on the same subject and cited Wikipedia twice, providing the following comment: 'For my own research I used the following sites: www.wikipedia.nl [and] www.geschiedenis.vpro.nl'. Then he provided the sites from which he had downloaded pictures, which included another Wikipedia page.⁷¹

A close analysis of another assignment on Rembrandt shows that essential details were taken from two Wikipedia pages - the English one and the Dutch one - on that painter. The left column of Table 2 shows the first four sentences from biographic texts from the four Web pages used as sources, while the right column shows the duo's summary that emanated from them:

Table 2: Example of the use of the Web as a source of raw material [left column] for pupils' multiple-source summaries [left column].

<p>Wikipedia.nl: 'Rembrandt van Rijn was born on 15 July 1606 in Leiden on the Weddesteeg, as the ninth child of a miller, Herman Gerritsz and Neeltje van Zuytbrouck, a daughter of a well-established baker. Rembrandt attended the Latin school and was about 14 years when his parents registered him at the University of Leiden. Obviously the venture stopped there because Rembrandt had indicated that he wanted rather to become a painter. By 1619 he was already an apprentice of the Leiden-based history-painter Jacob van Swanenburgh'.¹</p>	<p>Rembrandt van Rijn was born in Leiden [<i>sic!</i>], he was the son of a miller Harmen [<i>sic!</i>] Gerritsz van Rijn. Rembrandt had short school experiences in Amsterdam and Leiden, and at the time he went to settle in Leiden in 1625. There he became a painter. In 1632, he moved to Amsterdam, and lived a long time at arts trader Hendrik's.</p>
<p>People.zeelandnet.nl/acoomens: 'The Dutch most famous artist was born in 1606 in Leiden to Hermen [<i>sic!</i>] Gerritsz van Rijn, a well-established miller. After a few short experiences as student in Leiden and Amsterdam, he settled in 1625 in Leiden as an independent painter. In 1632 he moved to Amsterdam, where he stayed at arts trader Hendrik van Uylenburgh's. One year later Rembrandt got married with Saskia, the niece of his host'.²</p>	
<p>Wikipedia.org: 'Rembrandt Harmenszoon van Rijn was born on July 15, 1606 in Leiden, in the Dutch Republic, nowadays the Netherlands. He was the ninth child born to Harmen Gerritszoon van Rijn and Neeltgen Willemsdochter van Zuytbrouck. His family was quite well-to-do; his father was a miller and his mother was a baker's daughter. As a boy he attended Latin school and was enrolled at the University of Leiden, although according to a contemporary he had a greater inclination towards painting; he was soon apprenticed to a Leiden history painter, Jacob van Swanenburgh, with whom he spent three years'.³</p>	
<p>Spreekbeurt.info: 'Rembrandt was born on 15 July 1606 in Leiden, Rembrandt his father [<i>sic!</i>] was owner of a mill. This mill was not suitable as a residence. Their house was near the mill, on the Weddesteeg. Rembrandt his parents [<i>sic!</i>] were not rich but also not poor'.⁴</p>	

⁷⁰ Wikipedia, 'Vereenigde Oostindische Compagnie'.
http://nl.wikipedia.org/wiki/Vereenigde_Oostindische_Compagnie (Viewed 25 January 2011).

⁷¹ Wikipedia, 'Handelsposten van de VOC in het Midden-Oosten'.
http://nl.wikipedia.org/wiki/Handelsposten_van_de_VOC_in_het_Midden-Oosten
 (Viewed 25 January 2011).

A comparison among these 20 sentences shows that each of the sources in the left column provided an element that the duo used for the summary in the right column. All the sources mentioned the date and place of birth, and thus made the duo confident to repeat the same information, although in a less detailed way. The Dutch and English Wikipedia pages seemed to offer so many details, which the duo has shortened. For instance, instead of mentioning that Rembrandt became a confirmed painter after a three-year period of apprenticeship with Jacob van Swanenburgh, they just mentioned that 'he went to settle in Leiden in 1625. There he became a painter'. The wording of the statement about Rembrandt's short school experiences was inspired by the text from [People.zeelandnet.nl/acoomens](http://people.zeelandnet.nl/acoomens), while the formulation - There he became a painter – summarised the two Wikipedia texts that suggest that he had to stop his studies because he was more inclined to become a painter.⁷²

As Table 2 shows, Wikipedia seemed to have relegated conventional sources to the second-category zone. None of the conventional references on Rembrandt and his work – The Rembrandt House Museum, the Rijksmuseum, the Canon of the Netherlands, to mention a few – do not appear in this assignment. Where they appear, they almost always come as second or third on the list. For example, Duo 2 used 6 sources in this order: 1- the Dutch Wikipedia page on Rembrandt;⁷³ 2- Toon Oomens' personal website;⁷⁴ 3- the Rijksmuseum;⁷⁵ 4- Cultuurwijs [Culturewise];⁷⁶ 5- Rembrandt400-Leiden [Jubileum site];⁷⁷ and 6- a personal site by someone called Corosa.⁷⁸ As this listing shows, the conventional sources appear only on the third, fourth and fifth places. For the pupils, Wikipedia contained *everything*, and if something was not there, it was probably because it did not exist or was not worthy knowing. One WebQuest comment summarised the dominant view among pupils: '...The 2nd [best site after Wikipedia] was entoen.nu [The Historical Canon of the Netherlands], *which is also a sort of Wikipedia* but much less known. You can also find everything here' [Italicisation is mine]. This means that Wikipedia is becoming a reference against which conventional sources are judged and evaluated.

72 By moving to and forth among various sources of information and selecting details from each source, the pupils were performing what Jenkins and colleagues (2009:85-85) called 'Transmedia Navigation', consisting in 'The ability to follow the flow stories and information across multiple modalities'. They were 'hunters and gatherers' encountering 'the same information, the same stories, the same characters and worlds across multiple modes of representation'.

73 Wikipedia, 'Rembrandt van Rijn'

http://nl.wikipedia.org/wiki/Rembrandt_van_Rijn (Viewed 24 January 2011)

74 Toon Oomens, 'Rembrandt Harmensz van Rijn (1606 - 1669)'.

<http://people.zeelandnet.nl/acoomens/rembrand.htm> (Viewed 24 January 2011).

75 'Rembrandt van Rijn (1606-1969)'

<http://www.cultuurwijs.nl/nwc.rijksmuseumamsterdam/cultuurwijs.nl/i000072.html>

(Both viewed 25 January 2011).

76 cultuurwijs.nl: 'Rembrandt van Rijn (1606-1969)'

<http://www.cultuurwijs.nl/nwc.rijksmuseumamsterdam/cultuurwijs.nl/i000072.html>

(Both viewed 25 January 2011).

77 Rembrandt400-Leiden, 'Wie was Rembrandt van Rijn'

http://www.rembrandt400-leiden.nl/nl/wie_was_rembrandt/ (Viewed 12 April 2011).

78 Corosa, 'Rembrandt Harmensz. van Rijn: schilder, tekenaar en etser 1606 - 1669'

<http://home.tiscali.nl/~corosa/rembrandt/> (Viewed 12 April 2011).

2.2 The 'best' source

Generally speaking, Wikipedia prompted much more enthusiasm among the pupils. Pupil 1 rated Wikipedia's information on VOC with an 8/10 and commented in these terms: '[It provides] Much information about its history'. The Historical Canon of the Netherlands, which he also used, received an 8/10 too, with a different comment: '[It discusses] How the VOC expanded'. As for Duo 1, who used both the Dutch and English Wikipedia pages on Rembrandt, they rated both with a 5/5, with these comments: '[Information] About his life and his paintings' for the Dutch page, and '[It tells] Everything about Rembrandt van Rijn' for the English page. Toon Oomens' personal website⁷⁹ received a 4/5, with this comment: '[It tells] A little bit about his [Rembrandt's] life, but more about his work'. These few comments and ratings, which could be generalised for the WebQuest assignments, show that the pupils highly valued Wikipedia. Of all, Pupil 6 was the most eloquent about Wikipedia:

As almost always, Wikipedia is the best, [because] there is always very much information. It seems as if all professors have written their information there. The 2nd [best site] was entoen.nu [Canon of the Netherlands], which is also a sort of Wikipedia but much less known. You can also find everything here. There are other useful sites as well but these are not as elaborated as the 1st [Wikipedia] and the 2nd [The Canon]. I judged these sites simply by typing 'The VOC, the United East Indies Company' in Google.

This comment infers that Wikipedia is beyond any possible comparison. It also implies that the information is 'almost always' reliable and authoritative, as it seems to be emanating from 'professors'. The 'almost always' pushes to think that the pupil has some reservations, but these are overwhelmed by the amount and authority of information found on Wikipedia. Unlike Pupil 6 and most of other pupils, Pupil 2 is both enthusiastic and critical about Wikipedia. For her,

Wikipedia is often clear but sometimes a little bit difficult. It is mostly reliable but everyone can publish something. The site is well structured and you can choose what you want (such as history, arts, biography, etc.) [Italicisation is mine].

The *is...but...* reasoning shows that Pupil 2 knows how Wikipedia works, especially that everyone, including credentialed and non-credentialed authors, could publish and edit articles. She appears to be more enthusiastic than critical, because, her last *is* [well structured and you can choose what you want] did not call for a *but*. Her general feeling is that the site is 'mostly reliable'. As Table 2 has shown, these reservations seemed to have been compensated for by other websites. When the same information kept coming up on various sites, it was deemed reliable and taken into account in the summaries.

⁷⁹ Toon Oomens, 'Rembrandt Harmensz van Rijn (1606 - 1669)'.
<http://people.zeelandnet.nl/acoomens/rembrand.htm> (Viewed 24 January 2011).

3. Case Study II

The second class I observed, from January-June 2010, was located at Het Baarnsch Lyceum, in Baarn, in the central part of the Netherlands. Like in the other case study, the pupils were aged 13-14. Unlike the HPDS class, this one was much more traditional, with a teacher most of the time standing in front of the class and imparting knowledge. To understand and then map the use of online sources by pupils, I collected their written assignments on 'The Netherlands in the 17th century'. In a document sent to the pupils, the teacher wanted them 'to write an article about one development in "The Netherlands in the 17th century"...' and indicated the types of sources they should use. It was mandatory to use at least four sorts of books -and at least five sorts of websites. In the books category, the pupils had to use the *text-book* to check the 'aspects', the 'major lines' and some 'details'; a *general Dutch history book*; an *encyclopedia* for specific concepts, figures, and situations; and a *specific book on your main subject*. In the Web category, they had to use *specific [Canon] 'windows'* and similar windows from *other 'canon sites'* including *regional canon websites*; a website of choice with an overview of *Dutch history*; *Wikipedia* for specific concepts, figures, and situations; and *online exercises/educational websites*. The pupils had to form groups of two [duos] based on their affinities. Table 3 shows the figures of online and analogue sources used for this assignment:

Table 3: Web and print sources used for written class assignment.

	Duo 1	Duo 2	Duo 3	Duo 4	Duo 5	Duo 6	Duo 7	Duo 8	Duo 9	Duo 10	Duo 11	Duo 12	Duo 13
Web	20	3	1	5	6	24	10	6	12	8	10	5	6
Print	1	6	9	3	4	6	10	4	4	2	5	4	0

Remark: Duo 3 mentioned *The Dutch Memory* as the source of 32 images they used.

One major point emerges from Table 3: Web sources outnumber analogue counterparts. For the purpose of this paper, I will only focus on Web sources to examine the place Wikipedia occupied. As Table 4 shows, all the Web sources the pupils used could be divided into 11 categories, namely, 1-*Canons*, both the Canon of the Netherlands and regional canons; 2-*Wikipedia*; 3-*Educational sites*; 4-*Heritage sites* including both those of heritage institutions or run by other non-heritage organisations; 5- *Commercial sites*; 6- *Personal or family sites*; 7- *Blogs*; 8- *General information sites*; 9-*Religious sites*; 10-*Academic sites*, that is, those run by, and containing contents emanating from, academic research institutes; and 11-*Newspaper sites*. Wikipedia and the Canon appear *ex aequo* to be the most recurrent, as 11 out of 13 duos cited or used material from each of them at least once.

Table 4: Sorts of Web sources used for class written assignments

		Duo 1	Duo 2	Duo 3	Duo 4	Duo 5	Duo 6	Duo 7	Duo 8	Duo 9	Duo 10	Duo 11	Duo 12	Duo 13
Canons	<i>Canon of the NL</i>	2	1		2		4	2	3	5	3	1	2	3
	<i>Reg. Canons</i>						1	1		2				1
Wikipedia		4	1		2	2	9	4	3	2	4		2	1
Educ. sites		8	1		1							4		1
Heritage sites	<i>Heritage Inst.</i>			1			1	1		1	1	2		
	<i>Others</i>	2				1	4	1		1		1		
Pers./fam. sites		3				2	2	1					1	
Commercial sites						1				1				
Blogs							1							
General Info sites		1										1		
Religious sites							1							
Academic sites												1		
Newspaper sites							1							

The equality in numbers of duos who used both Wikipedia and the Canon should not blind one to the fact that Wikipedia largely surpasses the Canon if one considers the frequency of use. In this respect, Wikipedia was cited 35 times, while the Canon of the Netherlands and the Regional Canons were cited 28 and 5 times respectively. These figures lead to the same conclusion drawn for the first case study, namely that the pupils are rather enthusiastic about, and actually already engaged in, the convergence of conventional and unconventional sources.

4. Convergence

The categories of Web-based sources listed in Table 1 and Table 4 could be further divided into opposed groups, taking into account the following perspectives, among others: authoritative-versus-non-authoritative sources; conventional-versus-unconventional sources; and official-versus-unofficial sources. In this paper, I will not engage in the authoritative-versus-non-authoritative debate, which has been, and continues to be, extensively discussed (see for instance Kress 2004, pp. 33 & 34; Bruns 2009, p. 200; David 2007, pp. 179-180; Anderson 2006, pp. 66-67 & 69; Keen 2007, pp. 95-96; among others). Instead, I would like to focus on the much less explored

one about the conventionality or unconventionality of sources. Conventional sources are those that emanate from traditionally recognised content providers and brokers such as educational publishers, official organs, cultural heritage institutions, and their likes. Unlike them, unconventional sources come from people or organisations with no officially or traditionally established authority to provide educational or pedagogic contents. In this respect, I classified Wikipedia as unconventional because the principle behind it – every one is author, every one is editor, whether credentialed or not – is the opposite of the way conventional contents come into being. As for the Canon of the Netherlands, I classified it as a conventional source for the history class, because it originated from the Ministry of Education, Culture and Science, more specifically from the scholars and experts whom it appointed for that educationally oriented project. In the film, entertainment, or broadcast industries, conventional would mean the same as mainstream, while unconventional would be close to amateur.⁸⁰

4.1 Learner-led convergence

The analysis of the sources used for the assignments in both classes shows that about 70 percent of the sources were conventional, while the remaining 30 percent were unconventional. Table 1 and Table 4 show that 7 categories out of 10 and 7 out of 11 were conventional, respectively. These figures remain roughly the same if one considers the frequency of individual sites. In terms of frequency, each website is counted not as one source, but as a provenance of individual materials (texts, images, *etc.*). In Table 4, for instance, Wikipedia is counted as one category, whereas it was cited 35 times. An analogy could be made with individual books as independent sources, and the library as the provenance or mother source. Viewed from this perspective, unconventional sources represented about 44 percent [18 out of 41 individual Web pages cited] in the first case study (Table 1), and about 41 percent [47 out of 116 individual Web pages cited] in the second case study (Table 4).

The point that should be stressed is that conventional and unconventional sources were used in a complementary way in the assignments. For instance, as Table 2 shows, Pupil 6 used 2 unconventional sources and 4 conventional ones for her assignment on the VOC. The unconventional ones included Wikipedia, which provided the pupil with 'Everything about the VOC' and earned a 9/10 rating; and Belgian travel [commercial] site Malesie.be,⁸¹ which was commented on simply with 'VOC' and received 7.5/10; while the conventional ones included the Canon, which also discussed 'Everything about the VOC' with a 8/10 rating; the VOC Knowledge centre of the Royal Netherlands Institute of Southeast Asian and Caribbean Studies [KITLV], which the pupil rated with a 7.5/10, even though she found 'Much information about the VOC' on it; the historical news part of Absolutefacts.nl,⁸² which received a 7.5/10 for providing 'Relatively

80 Charles Leadbeater and Paul Miller (2004, p. 12) coined the term 'Pro-Am', to refer to the emerging new type of 'amateurs who work to professional standards'.

81 Malesie.be, 'VOC Algemeen'.

http://www.malesie.be/voc_algemeen.html (Viewed 15 February 2011).

82 Absolutefacts.nl, 'Verenigde Oost-Indische Compagnie'.

<http://www.absolutefacts.nl/geschiedenis/data/voc.htm> (Viewed 8 March 2011). This site is classified as conventional or mainstream because its contents are authored and edited by a team of knowledgeable editors specialising in the history of the Royal House and Castles, in automobile and political history, and in the

much [information] about the VOC'; and Kennisnet's ThinkQuest,⁸³ which scored only 7/10 for informing 'About the VOC'. From the comments and ratings, it would be deduced that the understanding that Pupil 6 got of the VOC was primarily based on the information found both the unconventional Wikipedia and the conventional Canon – where 'everything' could be found -, complemented with details from Malesie.be, the VOC Knowledge Centre, Absolutefacts.nl, and Kennisnet's ThinkQuest.

Similar mixtures of online sources were omnipresent in the second case study as well. For example, one duo decided to discuss sciences in the Golden Century [17th century] focusing on mathematician and astronomer Christiaan Huygens [1629-1695], philosopher Spinoza [1632-1677], and self-taught astronomer Eise Eisinga [1744-1828]. The first page dedicated to Huygens mentions two sources: the Canon's page on Huygens,⁸⁴ and the Dutch Wikipedia page on the same scientist.⁸⁵ In other words, no other reference or source was used on this page but the above-mentioned Web pages. Using long quotations from Wikipedia, the duo provided information about Huygens' education, emphasizing the fact that his early ambitions were in conflict with his father's plans. On the next page, the duo quoted twice from the Canon, which it also paraphrased, to highlight Huygens' admiration of René Descartes, and his discoveries in mathematics, physics, and clock making. Another duo chose to discuss 'The Golden Century: Economy and Politics', by focusing on the VOC, the Hanseatic League [1356 - ca 1450] and Slavery. In the section on the VOC, the duo cited Wikipedia,⁸⁶ which inspired their discussions on commercial competition and the 1602 [political] decision by 'the States General, the government of that time' to found the VOC. Then fetching from an educational website,⁸⁷ and the Canon,⁸⁸ they presented the organisation of the VOC, the birth of *share-holding*, a practice introduced by the VOC to raise funds to build new ships and meet other obligations.

All these aforementioned instances clearly indicate that convergence is taking place between conventional and unconventional sources in the history class, thanks to the Web. The Web is held responsible for this change, because, by making historical sources accessible outside their physical environments, it has made all the marks of conventionality and *mainstreamness* invisible. The fact of going to a museum or an archive, would *ipso facto* tell the pupil that what he or she would find in there is conventional and checked by some credentialed authorities for reliability. On the Web, the pupil would access the same object without seeing the physical museum or archive, which would make the object not different from the one coming from Wikipedia, a weblog, or a commercial site. In most cases, the pupils I interviewed said they ignored the source history of the Church, faith, and philosophy (see: <http://www.absolutefacts.nl/redactie.htm> [Viewed 8 March 2011]).

83 Stichting Kennisnet [ThinkQuest], 'De Verenigde Oostindische Compagnie'. <http://mediatheek.thinkquest.nl/~jra511/> (Viewed 8 March 2011). This is a conventional source *par excellence* because Kennisnet is a government-funded expertise centre for ICT in education.

84 The Canon of the Netherlands, 'Christiaan Huygens 1629-1695. Wetenschap in de Gouden Eeuw'. <http://entoen.nu/christiaanhuylgens> (Viewed 10 July 2010).

85 Wikipedia, 'Christiaan Huygens' http://nl.wikipedia.org/wiki/Christiaan_Huygens (Viewed 10 July 2010)

86 Most of the hyperlinked words are also hyperlinked on the Wikipedia page they cite: http://nl.wikipedia.org/wiki/Vereenigde_Oostindische_Compagnie (Viewed 10 July 2010).

87 Scholieren.com, 'Spreekbeurt Geschiedenis. De VOC'.

<http://www.scholieren.com/werkstukken/16720> (Viewed 10 July 2010).

88 The Canon of the Netherlands, 'De VOC 1602-1799. Nederland breidt uit over zee'. <http://entoen.nu/voc/vo> (Viewed 10 July 2010).

of their texts or simply mentioned that they had found them on Google, which poses a problem of the still-to-be acquired new media literacy skill of judgment or source evaluation (see Jenkins *et al.* 2009, p. 79). One assumption could be that an increased presence and participation of conventional contents on unconventional platforms, such as Wikipedia, would be beneficial to learners, especially those who still have to acquire the source evaluation or judgment skill.

4.2 Institutional involvement

If convergence is certain on the part of young history learners, it remains to be seen among the traditional, conventional providers of educational contents. This brings back the reflection initiated by Rosenzweig (2006, p. 140) about Wikipedia and what the role of professional historians - I should add all the gatekeepers of conventional historical information - should be on that unconventional, *gated* source of historical knowledge⁸⁹:

Should those who write history for a living join such popular history makers in writing history in Wikipedia? My own tentative answer is yes. If Wikipedia is becoming the family encyclopaedia for the twenty-first century, historians probably have a professional obligation to make it as good as possible [Italicisation is mine].

Some audacious cultural heritage institutions are breaking from the conservatism that has characterised most institutions in the last decades, by opening up part of their collections to unconventional content-makers. More institutions will most likely follow if the pathfinders report successful results of their innovative endeavours. In September 2010, the Netherlands' National Archive has inaugurated this convergence trend among Dutch heritage institutions by offering 1,000 pictures to Wikipedia Commons, the photo database of Wikipedia.⁹⁰ By doing so, the National Archive was authorising tens, if not hundreds, of thousands of Wikipedia authors and editors – I should add *Googlers* for whom Wikipedia almost always tops the result list (Rosenzweig 2006, p. 137) - to use them to illustrate their articles, which, as it appeared in WebQuest assignments, are the first and the 'best' sources the pupils go to for historical information. The National Archive reported that

In a two-month period over half of the [1,000] National Archive photos were linked to Wikipedia articles by the Wikipedia community. The entries illustrated with National Archive pictures were viewed more than 400,000 times in this period, with the most page views coming

89 The concept of gatewatching is used to describe the new quality-control and value-conferring mechanism on user-content-generated websites. Involving no authority or hierarchy in the traditional sense, 'Gatewatching, instead, relies exactly on that ability of users to decide for themselves what they find interesting and worth noting and sharing with their peers' (Bruns 2009, pp. 73-74). It consists in continuously and collectively observing 'the output gates of conventional [news] organizations, as well as of the primary sources of [news] information' (*Ibid.*). In this process, the authority previously vested in a few experts [curators, editors, journalists, *etc.*] is in the hands of 'large numbers of amateur contributors... [who] create dynamic in which "good" information drives out "bad"' (David 2007, pp. 179-180).

90 Nationaal Archief, 'Nationaal Archief-foto's op Wikipedia: ex-premier Gulielmus Kok zeer populair' (The Hague, 28 January 2011).

<http://www.nationaalarchief.nl/nieuws/nieuws/nationaal-archief-foto-s-op-wikipedia.asp?ComponentID=17607&SourcePageID=16483#1> (Viewed 1 February 2011).

from the Dutch version of Wikipedia.⁹¹

This could be called the beginning of a new phase – the convergence phase – that is likely to be the leitmotiv of this and the next decades. Previous phases included digitisation of collections, their presentation online, their transfer from Web 1.0 to Web 2.0 for some, among others. All these previous phases, which include the current attempts to integrate social media networks, maintained heritage professionals in their gatekeeping positions, and thus maintained the status quo as far as content generation and object exploitation were concerned. With convergence, heritage professionals give full access to a large community of content generators, who not only appropriate and domesticate materials, but also spread them over the Web, thereby increasing their chance of reaching the young history learners. Unlike the first type of convergence I mentioned above, which results from the fact that search engines display a mixture of categories of sources in the order of their popularity and without any sign showing their [un]conventionality, this one results from a conscientious effort on the part of the keepers of conventional sources. In other words, collections move from gatekeepers' hands and land into gatewatchers' ones.

The gatekeepers of the conventional sources of historical information could also take advantage of Wikipedia, by simply joining it as contributors and editors. Similar convergences have taken place in many other cultural sectors. For instance, the TV and music industries are undergoing this phenomenon via YouTube, where major mainstream channels – the Oprah Winfrey Show for instance - appear side by side with amateur contents (Burgess and Green 2009, pp. 41-42 & 91); the British Broadcasting Corporation [BBC], too, frequently encourages and has recourse to amateur contents (Gillmor 2004, p. 104). Similarly, the film and game industries have already entered an era where do-it-yourself tools enable fan film- or game-makers to generate their own media contents, using in a creative way the original mainstream contents (Jenkins [2006] 2008, pp. 136-137 & 153-155; see also Deuze 2007, p. 75). It would therefore appear normal and even profitable for young history learners if heritage institutions, credentialed historians, and other keepers of the conventional sources moved in that direction too.

5. Conclusion

One point appears clearly throughout this paper, namely that the same popularity of Wikipedia among the wider public⁹² is observed among young history learners. The predominant use of Wikipedia texts and pictures, often many times in one assignment, shows that that collaborative encyclopedia has conquered the pupils' hearts. It appears in their comments that Wikipedia contains *much information about...* or *everything about...* the past, while conventional sources would mostly offer just *information about...* and rarely *everything about...* For that reason, it has become a reference against which other sources, including conventional ones, are evaluated and judged. Yet, that does not turn Wikipedia into a conventional source of historical information, as no traditionally established authority ensures the reliability of the information it conveys. If policy makers and conventional providers of historical information are to help young history learners

⁹¹ *Ibid.*

⁹² Wikipedia is more visited, read, and cited by much more people than mainstream, conventional institutions' websites such as *The New York Times*, the Library of Congress, and its direct rival *Encyclopedia Britannica* (Rosenzweig 2006, pp. 118-119).

take advantage of Wikipedia, they should find ways to facilitate convergence between conventional and unconventional historical sources. One simple reason that should motivate them is that that convergence has already taken place among the ones they are supposed to serve. Their duty is to catch up as soon as possible.

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Social Networking in Second Language Learning

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1. Re-visiting McLuhan's Predictions about Education

Retrieving Hugo's words in *Hunchback of Notre Dame*, "Ceci tuera cela" (the book will kill the cathedral, the alphabet will kill images), McLuhan stated the same comparing a Manhattan discotheque to the Gutenberg Galaxy (Eco, 1996). In connection with McLuhan's comparison, nowadays it would be possible to maintain that the computer will kill the book. This metaphor should not be accepted literally. The book will not disappear in the same way as cathedrals' stained glass windows incorporating those narratives drawn from the Bible, which once were the alphabet of the people, have not been swallowed up by the print. Simply, the book has to co-exist with the new revolutionary forms of learning that are taking place through the Web 2.0. In fact, the Internet is being more and more integrated with the traditional bookish way of study, and the term "learning" itself is being constantly explored and redefined according to the needs of Web 2.0 learners and to the new possibilities offered by our era.

Moreover, Web 2.0 innovative applications are developing new social and collaborative dimensions where information is shared, created, remixed, constantly updated and improved by the users. In this process everyone's intelligence is interconnected to the others and people altogether collaborate and create knowledge (de Kerckhove, 1997). Not only is the content important but also the process of learning itself, which is the ways how learners acquire content. The Web 2.0 user is an active learner who gives his contribution to the creation of knowledge (Nonaka & Takeuchi, 1995) by inhabiting the web, by adopting his critical thinking in order to select, analyse, filter, share, comment, shape and reshape the huge amount of digital information and resources (Halvorsen, 2009) according to a self-selection process (Castells, 2000).

The boundaries between learning providers and learners have crumbled: learners have entered the sphere of content production, can create their contents (learner generated content) and experience new forms of learning that go beyond traditional classrooms and of which they are not always aware. These forms of learning are named in several ways, such as invisible learning (Cobo, 2010) or informal learning (Cross, 2007). As a consequence, Web 2.0 learning environments are influenced by these new modalities of knowledge distribution, and teaching and learning are being reframed and are taking new shapes.

Therefore, it is possible to draw parallels between McLuhan's vision and our currently arising educational situation. Under the perspective of the 60s, he was able to foresee the changes of education in the environment of electronic communication technologies and anticipated a revitalization of formal and traditional education (McLuhan & Fiore, 1967; McLuhan & Leonard, 1967; McLuhan & Powers, 1989).

To begin with, McLuhan (1960:207) argued that the traditional classroom is "an obsolete

detention home, a feudal dungeon” and that it had not changed much in comparison to the beginning of the 20th century in terms of layout, method and content of instruction (McLuhan & Leonard, 1967). Then, he predicted important changes in the structures and roles of education in the era of electronic communication, which include the idea of a flexible, multi-disciplinary, problem-solving oriented learning, blurred distinctions between learners and teachers and fuzzy boundaries between work and entertainment (one of McLuhan’s ideas was that anyone who tries to make a distinction between education and entertainment does not know the first about either), a learner-centered learning, cooperation and communication among learners (McLuhan & Leonard, 1967; Lynch, 2002). The electronic era would have led to a rejection of the division and hierarchical compartmentalization of knowledge (The trouble with a cheap, specialized education is that you never stop paying for it) to specialization and sharp roles’ distinctions (*The expert is the man who stays put/ The specialist is one who never makes small mistakes while moving toward the grand fallacy*) and to the predominance of processes and perception over conceptual bias (*Value judgements create smog in our culture and distract attention from processes*, McLuhan & Fiore, 1967).

Nevertheless, being in the middle of this transition, educators are challenged to rethink, redesign and redefine our culture about education, as well as the way learning is seen, done and organised in formal contexts, and to see teaching and learning as bidirectional, interchangeable processes, as McLuhan foresaw.

Often Web 2.0 learning environments are used as a repository where to deliver content according to the traditional ways of conceiving learning and to teacher-centred models where learner is a tabula rasa to be refilled. Given that “the medium is the message” (McLuhan, 1964), “it is not enough to deliver old content in a new medium” (Garrison & Kanuka, 2004; Lynch, 2002), but we have to understand better the effects of the Internet on current learners’ minds, and explore these new forms of learning and the ways to integrate them in formal and traditional education. Formal and informal learning do not exclude each other.

2. Invisible Learning on Social Network Sites (SNSs)

Considering these aspects, the research, in particular, is focused on the intersection between Social Network Sites (SNSs), favouring the sense of community and fostering new opportunities for a motivating and collaborative informal Second Language (L2) learning process, and the rise of new blurred models of L2 teaching and learning, which are not unidirectional.

The research, in particular, attempts to map out the and categorize the basic features of SNS communities in order to evaluate their currently “invisible” potentialities to support specific activities to enhance opportunities for active collaboration in formal L2 learning activities. The global ubiquity of SNSs means that second language learners can easily find themselves in contact with both native and non native speakers anywhere in the world and negotiate meaning. Furthermore, SNSs engage the sense of community, a feeling of belonging and it is the factor that mostly triggers motivation to be a member of a social community (Pettenati & Ranieri, 2006).

According to Nielsen statistics (2010), social networking dominates out time spent online, which means that there is a lot of interest in it. Given that learner motivation is a key feature

in the process of L2 learning, the SNS setting has the potential to be an effective environment for motivation enhancement in language learning and for the development of critical skills and autonomy.

A critical thinker of the information age is someone who takes control of his/her own thought process and “gains a metacognitive understanding” of it, learning to learn (Garrison & Kanuka, 2004:98). This is in line with McLuhan’s idea of critical thinking and “integral awareness” (McLuhan, 1988). In his typical cryptic style he wrote that “one thing about which fish know exactly nothing is water, since they have no anti-environment which would enable them to perceive the element they live in.” (McLuhan quoted in Federman & de Kerckhove, 2003). It is only when it is pulled from the water that the fish becomes aware of its previous environment. According to McLuhan, the “integral awareness” is the ability to distinguish the figure from the ground and to notice the formerly unnoticed. In the same way, the Web 2.0 learner, when social networking and navigating amidst the enormous quantity of digital information, is constantly called to challenge the risk of information overload and to select and notice the unnoticed among many obvious and irrelevant things.

SNSs, beyond accomplishing today’s learners’ needs of greater autonomy, seek for interaction and socio-experiential learning, seem to expand the way learning is seen (McLoughlin & Lee, 2007) and to adhere more to the idea of invisible learning. An important learning skill today is to “synthesize and recognize connections and patterns” (Siemens, 2004:3) and learning takes root in these systems of bottom-up interconnections where a continuous flow of information updates, improves and enriches the previous one. This knowledge flow on SNSs is fostered, intertwined and amplified by the people.

In conclusion, SNSs seem to have some potential for fostering motivation in L2 learning because they are paradigmatic of the new models of informal and self-directed learning taking place in the network society.

2.1 SNSs as Personal Learning Environments (PLEs)

Because of their features, SNSs have been considered by Siemens (2006) an example of Personal Learning Environments (PLEs), spaces where learners create their own personal learning environment by themselves and where it is the user/learner who manage his own learning by selecting, integrating and deciding the most appropriate tools and services for any given activity. PLEs represent “a centrifugal or decentralising process” where learners “are able to find significant “others” that can help them in their personal development, which includes but goes far beyond learning a foreign language” (Harrison & Thomas, 2009:120-121). For this reason, PLEs are not considered as an application but as a new way of learning (Attwell, 2007) in line with the European objective of Lifelong Learning.

It is the user/learner who manage his own learning by selecting, integrating and deciding the most appropriate tools and services for any given activity. PLEs are also defined as “systems that help learners take control of and manage their own learning” (van Harmelen, 2006:1) and are usually compared with Virtual Learning Environment (VLEs), applications of systems like Moodle, for example, designed to support teaching and learning in formal educational settings.

While the current generation of VLEs seems to conform to a classroom metaphor, PLEs achieve individual empowerment of informal learners through designs that focus on col-

laborative, networked communication and interaction (McLoughlin and Lee, 2007; Rogers, Liddle, Chan, Doxey & Isom, 2007; Sims & Felton, 2006). PLEs rather than interacting with the tools offered in a single context like in VLEs, allow the establishing of connections between the users and a wide range of services and environments. While VLEs have rigid boundaries, PLEs have soft boundaries and this is considered an advantage over VLEs (Wilson, Liber, Johnson, Beauvoir, Sharples & Milligan, 2007); in other words, the intrinsic flexible structure of “open systems” like PLEs benefits flexible learning, enhancing learner autonomy. In short, PLEs seem to be an update to the VLE, but with a greater emphasis placed on the student and the learning materials, and less on the Institution structure and management needs (Downes, 2005).

2.2 Experimentations between Formal and Informal Learning in Second Language (L2) Learning

From 1997, when SixDegrees.com, representing one of the first models of social networking, was founded, until the present time, SNSs have had a strong appeal to language learners and researchers started their studies about social communities. Researchers have looked at Social Network communities in informal learning and have found some evidence of sharing of ideas, critical thinking and providing peer feedback (Selwyn, 2007a). It has been argued that SNSs are meeting learners’ needs of learning by doing, given that on these platforms learners collaboratively negotiate meaning, learn critical literacy skills to manage, sort through, evaluate and prioritize a huge quantity of data, turning information into understanding (McFarlane, Roche & Triggs, 2007; Pegrum, 2009; Halvorsen, 2009).

Another experience, investigating the potential of micro-blogging in a SNS community, revealed that social networking has some potential for becoming educational networking turning learners’ interest for SNSs into study habits in the L2 (Antenos Conforti, 2009). Researchers have also claimed that social networking may facilitate L2 learning (Blake, 2009) and develop learners’ engagement (Lafford, 2009).

Considering the state of the question, different studies on SNSs have focused on learners’ construction, shaping and performing of identity through the L2 (McBride, 2009; Kelley, 2010) and on the possibility of building relationships (Ellison, Steinfield & Lampe, 2007; boyd, 2007). SNSs are demonstrating to be environments where learners’ reputation and social capital are at stake because learners find themselves in an informal “arena for social exploration” (Selwyn, 2007:4a), they are aware of being visible and perform at their most. As learning is experienced through intertwining relationships in a community (Lave & Wenger, 1991; Wenger, 1998), further research has revealed that learning on social networks means participation in social practices, acquisition of habits, attitudes, skills (Mayes & Freitas, 2007).

Other studies have mainly explored eastern contexts like Japan and China and have revealed the role of SNSs in increasing integrative motivation in English as foreign language (EFL) learning. McCarty (2009), for example, tried to enhance the integrative motivation of students toward the target language community through the social network Mixi, which is very common in Japan. He identified the affordances of social networking with students in terms of personal engagement, which in turn is linked to the integrative motivation and transformative learning and showed that SNSs can nurture a bilingual environment and opening up spaces for authentic collaboration in a foreign language environment.

Another study carried out in Japan by Halvorsen (2009) demonstrated that SNSs favour motivation, identity formation, student empowerment, learner autonomy, critical thinking, collaboration and support, according to the Vygotskian social-constructivist paradigm on which the author bases his research. He monitored a group of University students of English blogging on MySpace for the duration of a semester. Their regular blogging was a course requirement as well as their comments to their peers' blogs. At the end of the course, the author submitted a final questionnaire followed by informal interviews in order to gain the students' evaluation to the course, which was positive. According to the author, future research needs to look at how students perceived their own degree of autonomy during the language learning process; informal language learning on SNS communities could provide many insights in this sense.

Still in an eastern context but a step further, there is the study made by Kelley (2010). He showed that SNSs are effective for fostering imagined communities, that is, virtual communities where an idealised L2 speaking self experiences his sense of membership and a real-life experience. The study outlined increased opportunities for teacher/student interaction and also confirmed that SNSs seemed to affect motivation. In particular, the most integratively motivated learners found in SNSs another context to interact with the L2 community. The author also suggested the importance of measuring learners' habits of participation in future studies.

Nevertheless, it is necessary to continue the exploration of how specific learning contexts and strategies might benefit language learners. As these studies show (McCarty, 2009; Halvorsen, 2009; Kelley, 2010), it is not clear what happens to learners' autonomy without the guidance of a teacher in informal L2 learning in SNS communities. It is also necessary to analyse what happens in informal L2 learners' motivation, if it is sustained over time, or if the novelty factor wears off after an initial period of time.

2.3 SNS Communities in the Framework of Social Constructivism

Moving from the Socio-Cultural Theory that originated from Vygotsky's school and that states that learning processes happen through participation in cultural, linguistic, and historically formed settings (Vygotsky, 1978), Blattner & Fiori (2009) found how joining groups allows learners to interact in the target language and observed that promoting a community of learners is extremely useful and positively impacts student's motivation. According to them, the sense of community and belonging favours critical thinking, develops learners' socio-pragmatic awareness and reflection on cross-cultural differences.

Considering the previous consideration and the state of the art delineated, there is a privileged research field linked to the study of SNS communities and related to the social constructivist paradigm. Constructivism is a "theory of knowing" and a theory about "coming to know" (Fosnot, 1992; Daloglu, Baturay & Yildirim, 2009), about how learners make meaning and process their learning, which is seen as an active, interpretative, building process of discovery and exploration.

Its sub-category is social constructivism, which places primary importance on the need for mediation and social interaction in the development of meaning (Vygotsky, 1978), as is taking place in SNS communities (Pasfield-Neofitou, 2007; Halvorsen, 2009), where learners learn languages socially in a social space. These interactions take place in the framework of

a social-constructivist approach to language teaching and learning because SNSs are primarily about the construction of meaning through interaction among users in peer editing and collaboration (Lavin & Claro, 2005). Language is seen as a practice that is constructed by the way learners understand themselves and their social surroundings (Norton & Toohey, 2004) interacting in the target language.

The authors assessing the potential of Internet interest communities for L2 learning draw upon the social constructivist framework and upon Vygotsky's (1978) Zone of Proximal Development (ZPD), included in its Socio-Cultural Theory. The ZPD is defined as the difference between what an individual (or a community) can accomplish independently, and what the same individual (or community) can accomplish in joint activity through imitation, support and collaboration (Vygotsky, 1978; Kinginger, 2002; Lantolf & Thorne, 2006; Thorne, 2009). It is basically the difference between the level of independent problem solving and the potential development of problem solving in collaboration with more capable peers. Successful L2 learning and a virtual ZPD in these communities happen when the actions of their members are mediated by the role of other significant people who help their peers to learn (Harrison & Thomas, 2009).

3. Potentialities of L2 Learning in SNS Communities

Given the aforementioned aspects related to social constructivism, this paradigm will provide a solid basis for investigating SNS communities and their associated Web 2.0 technologies in the perspective of social learning. In fact, Web 2.0 technologies help in the construction of meaning through interaction and collaboration among learners in SNS communities (Halvorsen, 2009). Through photos, videos, musical selections and friend lists, learners are able to shape their identities in their target language and through collaboration with their peers they spend a lot of their time constructing something (Halvorsen, 2009; Lavin & Claro, 2005).

Furthermore, SNS communities allow learners the freedom to create and express themselves online, to author their own content and to share that content with both native and non native speakers, fostering learner's autonomy and independence and developing their critical thinking (Kelley, 2010; Halvorsen, 2009).

My study would be an extension and a contribution to the analysis of SNS communities through the lens of the socio-cultural theory made by a considerable number of researchers (McCarty, 2009; Harrison & Thomas, 2009; Blattner & Fiori, 2009; Halvorsen, 2009) and that characterises the current research in the field.

3.1 Questions, Hypotheses and Objectives

My investigation is an ongoing research broadened in the context of my PhD related to nowadays' knowledge society in the era of the Internet and aims to explore the distinction between the affordances and potentialities for L2 learning on SNSs on the one hand, and whether this potential is actually realized.

Moreover, it seeks those key-features of SNS communities that can enhance learner's moti-

vation for L2 learning and how these features could contribute to design activities to support formal learning. In order to make clearer the scenario, the broad questions are articulated into sub-questions also based on learners' perceptions about the way they learn in SNS communities, and I will try to discover which key-features in these informal communities learners see as being most motivating, what practices sustain motivation for L2 learning over the long term, to what extent learners expect/desire to use "informal" L2 SNS communities in formal educational activities, what unintended consequences and/or risks do learners see as arising from importing "new" informal modes of SNS L2 communities use into the classroom settings. Finally, I will find how to organise the key features delineated in order to develop guidelines in support of activities in formal L2 learning environments.

My research questions rely on the hypothesis that the social component, the emotional factors, the flexibility and openness of Social Network informal communities can support L2 formal learning activities, being triggering factors in the process of nourishing motivation in L2 learning over time. When L2 learners join SNS communities they are already motivated to learn. But the interaction in a community of people, the possibility to share the process of learning together, nourish motivation and sustain it over time. I therefore expect to find a general relationship between the experience of learning in a SNS and the enhancement of motivation for L2 learning. Therefore, my second hypothesis is that it is possible to make use of some of the features of informal learning in SNS to increase motivation in the practice of formal learning situations. The first hypothesis would lead me to the second, that a link can exist between informal and formal L2 learning and that the motivation arose in informal learning environments like SNS communities can be used to reframe traditional learning environments through integrative activities to be structured according to specific guidelines.

Considering the previously outlined context, the study pursues the following objectives:

1. *To map out the best practises that characterise this scenario where informal L2 learning takes place in SNS communities;*
2. *To identify specific motivating elements arising in the informal learning taking place in SNS communities that are transferable to formal contexts;*
3. *To design possible guidelines in order to integrate some aspects of informal L2 learning to support formal L2 activities;*

These objectives are to be accomplished sequentially. From the selection and the mapping out of the best practises in SNS communities (1) I am obtaining as delivery interpretative parameters about the characteristics and the potentialities of the social network-based communities. Then, analysing with an interpretative protocol these characteristics, I will try to identify and qualitatively measure those elements that trigger motivation for L2 learning on these communities (2), such as the social capital, that is, the feeling that learners' reputation is at stake in such social spaces, or rewarding systems that generate a sense of loyalty towards the community. The aim is to classify and isolate all the possible aspects that activate learners and enhance the sense of belonging to the group.

Then, with the intention of linking informal and formal contexts, I will design (3) interpretative and evaluative parameters on the basis of informal environments in order to give a contribution to formal contexts. For example, I will provide suggestions to implement the modalities of content distribution and empower results to be transferred in formal contexts, contributing to design activities in formal contexts.

3.2 Methodology

Because of the newness of the research into the use of social networking technologies to support formal educational experiences, a cross-methodological approach is necessary. To begin with, through the comparison of different case studies, I will examine a complex social phenomenon like SNS communities by means of a wide range of data (Yin, 2003). The aim is focusing on the in-depth and detailed description and examination of informal L2 learners interacting in SNS where people share interests for L2 learning, with both native and non-native speakers and to take advantage of the affordances provided by these open and informal environments in order to design possible guidelines to enhance learners' engagement and commitment in L2 activities as well as to improve already existing platforms. In order to do that, I have explored the best cases among groups, communities, fan pages and applications present on the Web. The outcome of this research is the tendency of learners to gather and communicate in their target language through informal channels. Later, I have selected for each SNS the most active, populated and involved communities. The best cases identified for my investigation are *LiveMocha*, *Babel*, *Facebook* and *Busuu*.

In line with the theoretical framework, I will rely on the interpretative paradigm, which sees the world as complex, dynamic and socially constructed, interpreted and experienced by people in their interactions with each other and with the social systems (Schwandt, 1994). Moving under the paradigm of interpretivism and the framework of social constructivism on SNSs, I am making use of virtual ethnography, which is considered the best approach to investigating online communities included SNSs (Thomsen, Straubhaar & Bolyard, 1998).

It is clear that by means of the virtual ethnographic approach the amount of data will be thinner in comparison with an interview made face-to face. That is one of the reasons why I will combine the ethnographic approach with the quantitative results of questionnaires and with the Social Network Analysis (SNA).

To improve the validity of these results, it is necessary to adopt a methodological triangulation by combining sequentially quantitative and qualitative methods (Spicer, 2004) In fact, the careful comparison of quantitative and qualitative data will add support to the variables under investigation. Secondly, the comparison will show more in-depth dimensions about the enhancement in learners' motivation for language learning and its sustainment over time. In this last phase, I will combine, compare and interpret the results of derived from the observation and from quantitative and qualitative methods and draw my conclusions.

I expect to be able to interpret the dynamics of these communities and to build a fluid system where I map out the important features of these communities, by looking at the forms of communication taking root (one-to-many, one-to-one), presence of tutorship, asking for peer support, level of participation, according to detailed categorizations related to pedagogical usability issues, socio-relational and interactional issues, and environmental and technical usability issues under L2 learning point of view.

Another phase of the research will be based on the revision of the possible blind spots, missteps and limitations encountered over the process, of the arising of ethical issues like restrictive terms of contracts, resistance of the communities at being studied, gain of informed consent, identity cloak, citing and crediting.

4. A lifelong “Integral Awareness”

From the analysis of my case studies, I imagine to obtain a good amount of data about affordances, potentialities, constraints and actual use of SNS environments in order to generate a wide range of guidelines on how to take most advantage from these communities in the perspective of a possible employ in formal contexts’ activities, especially to increase students’ motivation for L2 learning.

In conclusion, I expect this research to be a contribution to the new needs of learners and to the new modalities of learning that are arising in these last years, in line with the objectives of lifelong learning and to the important changes envisioned by McLuhan before the arrival of the Internet.

McLuhan would not be surprised to hear that in formal settings student motivation is sometimes low or non-existent (Oxford, 1998; Chambers, 1993; Ushioda, 1998; Dörnyei, 1998). This poses a particular challenge for language teachers, who encourage learners to be more active in their learning process and to take the initiative with autonomy. But the fact that many governments are committed in developing more personalized education systems and a more learner-centered perspective (Selwyn, 2007b) and that the European Union has started supporting particular studies oriented in this direction (i.e. Lingo, a pilot case study on motivation in the L2 and its enhancement through informal contexts) is a sign of change towards fuzzier boundaries between formal and informal learning.

“Informal and incidental learning take place wherever people have the need, motivation and opportunity for learning” (Marsick & Watkins, 2001:28), and is unstructured, influenced by chance and serendipity, it is inductive and linked to other people (Marsick & Volpe, 1999), all conditions that the network society provides. Considered that informal learning often includes unintentional, unexpected and invisible learning, the Web 2.0 learner has to turn this unintentionality into “integral awareness”. Therefore, the Web 2.0 learner should be an informal learner who learns “consciously” from his everyday life, in a variety of ways and not only in formal, structured contexts, accomplishing the European objective of lifelong learning.

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Education as a dying and outdated system (?)

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1. Introduction

Our educational system is totally rearview mirror
Marshall McLuhan

In his book *From fear to Facebook: One School's Journey*, (International Society for Technology in Education, 2010), Matt Levinson describes his teaching experience at the Nueva School in Hillsborough, California. From his first steps in the new school up to his participation in activities related to the introduction of network technologies in teaching practices, Levinson's path is built from the very beginning as an attempt to create a link between two very different realities: «the key lesson we learned is that adult see technology as a source for information and a means of communication, while children view technology as a tool for entertainment and socializing». Levinson explains the title of his book by reflecting on the causes of the difficulties he encountered in his teaching experience, mainly in what he considers as the main obstacle to the achievement of good educational practices. He wrote, with words addressed to teachers and educators: «we operated from a place of fear». In Levinson's interpretation, the fear of new information technologies is the reason for the initial failure of the new curriculum '1-to-1': from his point of view, to successfully achieve the different educational objectives established, it is not enough to improve teaching and learning by following a strictly academic way. Instead, educators must be open to what he calls "the online world of students", and be ready to face the social landscape that is an integral part of their lives.

2. Education and new media

The scientific literature on educational and communication issues has been enriched in recent years by several publications by teachers, scholars and academics who have come to conclusions that are very similar to those of Levinson. Most of these studies documented different types of resistance in educational institutions against the structural change that is related to practicing with new communication technologies in education. Henry Jenkins and his colleagues at the Massachusetts Institute of Technology synthesize the consequences of the changed relation between education and communication:

«Schools as institutions have been slow to react to the emergence of this new participatory culture; the greatest opportunity for change is currently found in afterschool programs and informal learn-

ing communities. Schools and afterschool programs must devote more attention to fostering what we call the new media literacies: a set of cultural competencies and social skills that young people need in the new media landscape. Participatory culture shifts the focus of literacy from one of individual expression to community involvement. The new literacies almost all involve social skills developed through collaboration and networking» (Jenkins et al., 2009: 4).

In 2007, anthropologist Michael Wesch posted on YouTube a short video produced in collaboration with 200 students at Kansas State University, summarizing some of the most important characteristics of students today: how they learn, what they need to learn, their goals, hopes, dreams, what their lives will be like, and what kinds of changes they will experience in their lifetime. The video is about their experiences and the gap between the technology in the classroom and the technology in their lives, and it opens up with a quotation from Marshall McLuhan: «Today's child is bewildered when he enters the 19th century environment that still characterizes the educational establishment where information is scarce but ordered and structured by fragmented, classified patterns, subjects, and schedules». This quotation is especially relevant because these words could have easily been written about many of today's classrooms, both scholastic and academic. Wesch himself explains that in an essay published on a monographic number of *Academic Commons* focused on the relationship between education and new media: according to the American cultural anthropologist, the new media ecosystem force us to rethink not only our methods but also our teaching philosophies that are still shaping education. As we all increasingly move toward a communication environment of instant and infinite information, Wesch says, it becomes less important for students to know, memorize, or recall information, and more important for them to be able to find, analyze, sort, share, critique, discuss and create information («they need to move from being simply knowledgeable to being knowledge-able»: Wesch 2009).

In the last years, the international debate has been focused on generations and “digital natives” versus “digital immigrants”, starting from the well-known article by Marc Prensky published more than ten years ago (Prensky, 2001). Scholars started to question about the role of some variables - such as age and media diet - in specific educational contexts (Bennett, Maton, Kervin, 2008; Collins, Halverson, 2009; Hew, Hara, 2007; Gasser, Palfrey, 2008; Jenkins, 2007; Kvakiv, 2005; Rosen, 2010; Shah, Abraham, 2009; Tapscott, 2009, Thomas, Brown, 2011). If Prensky persists on the heuristic simplification talking about ‘digital wisdom’ (Prensky, 2009) - even after he revised the rigidity of the categories he proposed some years earlier - researches in Digital Ethnography conducted by the Kansas State University confirm the specificity of “networked digital information”, both for quantitative and qualitative aspects. Wesch wrote:

«It has the potential to be created, managed, read, critiqued, and organized very differently than information on paper and to take forms that we have not yet even imagined. To understand the true potentials of this “information revolution” on higher education, we need to look beyond the framework of “information.” For at the base of this “information revolution” are new ways of relating to one another, new forms of discourse, new ways of interacting, new kinds of groups, and new ways of sharing, trading, and collaborating. Wikis, blogs, tagging, social networking and other developments that fall under the “Web 2.0” buzz are especially promising in this regard because they are inspired by a spirit of interactivity, participation, and collaboration. It is this “spirit” of Web 2.0 which is important to education. The technology is secondary. This is a social revolution,

not a technological one, and its most revolutionary aspect may be the ways in which it empowers us to rethink education and the teacher-student relationship in an almost limitless variety of ways» (Wesch, 2009).

Technology is only a variable among many others: it is certainly an empowering and habilitating factor, but educator's attention has to stay focused on sharing activities and collaborative practices related to user's engagement within the interconnected digital media ecosystem. The terms 'web 2.0' and 'user generated content' should be used beyond slogans and the rhetoric of marketing: the contemporary media landscape – in which education and communication are two sides of the same problem – is increasingly dependent on network practices, Do It Yourself (DIY) culture, knowledge sharing, the participation of more people in very complex and ambitious projects.

The technologies and the dynamics of a network society that would suggest a reorganization of traditional educational systems are among those things that are defined for convenience as belonging to the so-called Web 2.0. From a strictly academic point of view, the term has a real meaning only if it is contextualized: the idea of a "phase two" of the development of the Internet began to spread in 2003 and is used to indicate a subsequent line of demarcation between a static phase ('web 1.0', with reference to the numbering of the versions of software) and the current trend towards more participatory and connecting practices. Beyond the slogan "web 2.0", in the original definition of O'Reilly we can still find the most important definition: Web 2.0 is 'the network as platform, spanning all connected devices', a media environment in which the software is delivered as a continually updated service that gets better the more people use it (O'Reilly, 2005b). The "web as a platform" concept is closely related to the idea of "architecture of participation", or media as enabling technologies that are able to intercept common needs and desires, and capable to promote innovative network practices and experiences.

Following McLuhan's thought on the relationship between media and education (McLuhan 1962, 1964, 1969, 1977), Wesch points out that the physical structures associated with education are closely linked to cognitive and social structures that are habitually described as variables independent from different educational environments:

«Rows of fixed chairs often face a stage or podium housing a computer from which the professor controls at least 786,432 points of light on a massive screen. Stadium seating, sound-absorbing panels and other acoustic technologies are designed to draw maximum attention to the professor at the front of the room. The "message" of this environment is that to learn is to acquire information, that information is scarce and hard to find (that's why you have to come to this room to get it), that you should trust authority for good information, and that good information is beyond discussion (that's why the chairs don't move or turn toward one another). In short, it tells students to trust authority and follow along» (Wesch, 2009).

This is what Wesch calls «the ongoing hour-to-hour and day-to-day practice of sitting and listening to authority for information and then regurgitating that information on exams». If critics directed to educational systems exist since the growth of modern – and a huge literature has been produced on this topic – the emphasis on physical structures as a medium helps us to understand the insightful sense of the need for a different relationship between technology and education, and between education and communication. Just the mere distinction

between “tool” and “environment” becomes indicative of a different way of considering the interaction between learners and technology:

«For those involved in education, technology can be intended as a tool or as an environment. Needless to say, if it is a tool, the quality and the shape of knowledge are defined elsewhere, because they pre-exist the technological mediation; but if technology is an environment, then in some way knowledge interacts with the environment itself. Technologies provide environments for didactics and didactics must be able to interact with those environments. If the environment changes, didactics too is being urged to change, redefining its identity. More subtly, if the environment changes, didactics is being urged to make itself explicit, showing itself as a “space of problematization” » (Maragliano, 2008: 97).

The close relationship between the monomedial culture of typographic learning and the configuration of physical environments, according to the interpretative approach of Wesch and others, has remained hidden from the eyes of most of the social actors involved in educational processes. From this point of view, media are not just tools but real environments of interaction, and the traditional ideas of information are still too based on the characteristics of information on paper. This would be one of the reasons behind the fear mentioned by Levinson (2010) as well as the feeling of disorientation that many educators feel when they have to face new areas of interaction. David Weinberger (2007) has effectively described the impact of social media on the consolidated and rigid hierarchical classification systems to which we had become accustomed during centuries. For Wesch and Weinberger – as for Jenkins, Shirky, and many other new media scholars – we should take note of a fact: «networked digital information is fundamentally different than information on paper» (Wesch, 2009).

For these authors the first step to understanding the dynamics of interaction and sharing within online digital environments is to discuss about the logic of the printing press and to recognize the book as a powerful technology and a medium. McLuhan himself argued that one of the first steps to understand the functioning of the media system as a whole is to recognize *literacy* as a printing technology (McLuhan 1962, 1964), «shaping not only production and marketing procedures but all other areas of life, from education to city planning» (McLuhan 1969). After the epoch of the mass media regimes and now in the age of the networks, there is still the rejection of the concept of *homo sapiens* as *homo technologicus* just by those who are intimately linked to a particular technology. It is the paradoxical case of much contemporary academia, ready to show the risks of the submission of man to the technology and refusing at the same time to consider the practice of writing as a technology, because it is so much of his identity, thus failing to recognize itself prisoner of a fully alphabetically and typographic brainframe.

With the expressions ‘media literacy’ or ‘technological illiteracy’, in fact, we are referring to the ability to access, understand and create forms of communication in different contexts of use (Ofcom, 2004, Buckingham, 2005, Livingstone, 2003). Sonia Livingstone, Professor of Social Psychology at the London School of Economics and Political Science, recognizes that the term literacy is open to different conceptual ambiguities, for being ‘opaque’ and probably more suited to a world of authoritative printed books than to a hyper connected multimedia world. However, while recalling the amount of existing miserable terminology (“print literacy, audiovisual literacy, critical literacy, visual literacy, oral literacy, cultural literacy or social literacy”, and the latest “computer literacy, cyber-literacy, internet literacy, network

literacy, digital literacy, information literacy”), Livingstone argues that – in order to facilitate the dialogue between academia and policy makers responsible for government decisions – it is necessary to use “media literacy” in relation to the popular use of electronic and digital media («the use of material either broadcast or published on electronic communications networks»). According to Livingstone, we can thus reflect on the challenges posed by the convergence of print, audiovisual and digital media, with particular reference to the widespread and public use of Internet. The convergence of media and practices is today the main interests of those involved in social change: Henry Jenkins uses the *ad hoc* definition “convergence culture” to describe social, cultural, industrial and technological change related to the reshaping of our culture (Jenkins, 2007: 345). From this point of view, the term convergence refers to the flow of content across multiple media platforms, to the ‘nomadic’ behavior of the public looking for rewarding viewing experiences, to the cooperation between different enterprises, to the research of corporate and institutional objectives in order to make relations between old and new media truly productive.

3. Media literacies

Convergence, therefore, indicates a process that is at the same time social, cultural and technological, connected to the reduction of costs in production and distribution of digital content (Shirky, 2003; Anderson, 2007). Beyond the empirical evidence, many scientific studies in recent years have confirmed the enormous participation of younger Internet users to the task of creating original content of all kinds, as well as sharing and discussing content created by others (Lenhart, Madden, 2005; OECD, 2008).

Under the Digital Media and Learning program – sponsored by the MacArthur Foundation and conducted by the University of Southern California and University of California with the participation of researchers from different countries – the large-scale ethnographic method has allowed to investigate the nature of youth consumption of digital content, and the continuous immersion within the pervasive digital media ecosystem. Social networks, video-sharing sites, online gaming, multimedia devices and mobile phones emerge from the analysis as the true “fixture of youth culture”. Dozens of researchers involved, eight hundreds of young people and young adults surveyed, more than five thousands hours of online observation, with the aim to find out how new media are part of the agenda and the practices of young people, and how these practices affect negotiations with the older people in the field of literacy, learning, authority of knowledge. The research thoroughly explains the difference between *literacy* and *media literacy*, showing how the erection of barriers to participation prevents adolescents from experimenting new forms of learning, for “participation” today is not just about being able to find “serious” online information and culture.

The analysis of the most purely social and recreational aspects related to new media practices, as well as the forms of peer-to-peer learning, necessarily lead to a reconsideration of the role that education systems must play in a social and communicative context that has radically changed in just a little more than a decade:

«Youths’ participation in this networked world suggests new ways of thinking about the role of education. What would it mean to really exploit the potential of the learning opportunities avail-

able through online resources and networks? Rather than assuming that education is primarily about preparing for jobs and careers, what would it mean to think of it as a process guiding youths' participation in public life more generally? Finally, what would it mean to enlist help in this endeavor from engaged and diverse publics that are broader than what we traditionally think of as educational and civic institutions?» (Ito et al, 2009).

If more than a half of the teenagers in the United States and in Europe (and in several Asian countries and South America, as evidenced by the percentage of network access and the use of social media in the last years, constantly rising) has created media content, and more than a third of teens who use the Internet shared self-made content, it is clear how the convergence culture described by Jenkins is also, in opposition to the twentieth-century media environment, a *participatory* culture.

The participatory culture can grow and expand if costs and barriers to access decrease, and if it the ease of interconnection between people increases. According to Jenkins, people that are active in a participatory culture are not only convinced of the importance of their contributions but, feeling connected to others, are often interested in the opinions others have of their creations, and find new ways of creating social links. As Clay Shirky argues, new technologies allow people to create groups in new ways (Shirky, 2009). A participatory culture feeds itself with creative expressions (mash-ups, fan fiction, remix), circulation and sharing of content (blogging, podcasting, etc..) collaborative problem solving (alternate reality games, spoiling, etc..), and affiliation, or activities – in both formal and informal ways – in various social networks and online communities.

Jenkins points out, with Wesch (and McLuhan), that educational institutions and academic organizations have reacted slowly to the emergence of participatory culture, confining hesitant system openings to after-school programs or to informal learning communities, leaving new media literacies out of programs. When not fear and hostility, as in the case of Levinson, the institutional responses of education systems often show a suspicious attitude towards new communication practices.

Michael Wesch emphasize the role of social structures that resist in a strongly hierarchical context as that of educational institutions: due to their history and their design and material culture, it is not easy for them to consider relevant abilities and skills such as performance, simulation, gaming, multitasking, remixing, distributed knowledge, transmedia storytelling, practices of networking and negotiation. With the words of the anthropologist:

«Unfortunately, many teachers only see the disruptive possibilities of these technologies when they find students Facebooking, texting, IMing, or shopping during class. Though many blame the technology, these activities are just new ways for students to tune out, part of the much bigger problem I have called "the crisis of significance," the fact that many students are now struggling to find meaning and significance in their education. Nothing good will come of these technologies if we do not first confront the crisis of significance and bring relevance back into education [...] if we work with students to find and address problems that are real and significant to them, they can then leverage the networked information environment in ways that will help them achieve the "knowledge-ability" we hope for them» (Wesch, 2009).

We can still say that for many people involved in educational systems «the new integral electronic [digital, networked, A/N] culture creates a crisis of identity [...] a vacuum of the

self». And if that works for most of international educational systems, that certainly works for Italy: in the country where McLuhan's thought was described as "Cogitus interruptus" (Eco U., 1977) the actual pedagogy seems to have a regressive attitude, since it is no more oriented towards the future with hope, but it still refers to the past with evident regret. The paradox is that progressive culture – being built on the semiotic construction of barbarism connected to media consumption (Perniola 2004, 2009) – regrets now that same past it had deeply criticized and challenged years ago, while conservative culture builds a future on the basis of a past even more remote.

McLuhan said that we often look at the present through a rear view mirror: in his words "we march backwards into the future", something similar to the way Futurism looked at the relation between culture and innovation, one hundred years ago. Futurism's critic against the "dust" of the past knowledge disclosed the limits of a culture, like the Italian one, solely devoted to imitation and conservation of heritage, on the basis of a misunderstood classicism (Nazzaro 1973). This is the reason why McLuhan described north-american schools as "intellectual penal institutions", saying that «very few young minds can survive the intellectual tortures of our educational system». He referred to simultaneity that makes people scorn the goals of traditional education as "unreal, irrelevant and puerile". Saying that ours is an age of information overload, he was implying that «the only way to make the schools other than prisons without bars is to start fresh with new techniques and values» (McLuhan 1969).

Despite the political conservatism of educational systems, there are various social actors determined to face social change with no fear and to disavow McLuhan's statement («our entire educational system is reactionary, oriented to past values and past technologies [...] is totally rearview mirror. It's a dying and outdated system»), standing the political discourse based on panic on its head. According to McLuhan, before pedagogues and administrators can start doing things the right way, they have to recognize that they have been doing them the wrong way, which they still refuse to accept. Students are growing up incongruous because they are stuck between two different environments and two value systems, and McLuhan's words seem quite relevant today in our networked society (Castells 1996; Benkler 2004, 2006; Jenkins 2006a, 2006b; Shirky 2002, 2003, 2008, 2010) : «the challenge of the new era is simply the total creative process of growing up - and mere teaching and repetition of facts are irrelevant». Nowadays, to expect a 'networked' child of the Internet age to respond to the old education models is "rather like expecting an eagle to swim". That is why educators have to swim into the sea of shared and distributed knowledge related to media, social media and social networks, as to reading devices, tablet, app markets, etc. That is why we cannot use, as some analysts do (Lanier 2010; Carr 2010), McLuhan's work to reject forums, wikis, social networks and user generated contents. Internet is not only the future of media consumption, it is also the future of education, as of all kind of e-learning and i-learning that students are demanding more and more: «if we don't adapt our educational system to student's needs and values, we will see only more chaos».

Some book by other authors – although not specialists in educational issues, among the most influential commentators as regards the debate on innovation and new communication technologies – have focused recently and critically, by reading once more McLuhan, on the new media landscape.

Two authors in particular have been leading and in some ways still lead the debate on the consequences of change in the use and production of content via Internet: Jaron Lanier (2010) with *You are not a gadget* and Nicholas Carr (2011) with *The Shallows*. Lanier, one of the first de-

veloper in the world to deal professionally with software and devices for virtual reality, rightly argues in his book that developers and technologists work on structures which can affect the way in which people think about themselves and the world. Directly manipulating the perceptual and cognitive experience of users, technologists would make real, according to Lanier, McLuhan's reflections on medium as message: different models of media encourage different potential in human nature (Lanier, 2010). Lanier's analysis focuses in particular on the interface design and the concept of *lock-in*, used to show how the software we use every day ends up limiting the ambiguity and flexibility of thought and action. Nevertheless, the reasoning of Lanier shows his scientific inconsistency, especially when arguments are more in the field of aesthetic taste rather than epistemological. For example, according to Lanier, if the lock-in would remove all the alternative design options discarding ideas that do not conform to the successful "digital representation schemes", this would be sufficient to increase the possibilities of redefining the nature of man towards the model of the digital file.

Sentences like "popular culture is in a phase of nostalgic melancholy", "the online culture is dominated by simple mash-ups", "we are reducing the deep significance of the individual personality through illusions made of bits", or even "soon computers will be so great and fast [...] that people will become obsolete" show a chain of preconceptions and prejudices, a way of thinking that is a constant within the appearance of each new medium in the history of the media. From the book that for Plato's Socrates would have led only to the mere appearance of knowledge towards the destruction of real knowledge, through the criticism of Beethoven's Ninth and the censure of nineteenth-century novel, of film, comics and television, up to allegations as «before the digital cloud era no one was able to lie to himself in the way we are used to today»: Lanier seems to read the socio-technical changes with the tools of regret and aesthetic judgment, tools that were familiar to other scholars, like the philosopher Theodor Adorno, who used them to describe and condemn the entire cultural industry and even the whole jazz music. What is the scientific base of an affirmation that describe the user interfaces of the computing cloud capable of «making people, all people, less attentive to others»? Once more, concepts such as "zombie users", "Digital Maoism" and "cybernetic totalitarianism" have certainly the flavor of the effective slogan, but they cannot have too much attention from a scientific point of view. Even where it is claimed that «we do not have sufficient knowledge of the brain on a scientific basis for understanding phenomena such as education or friendship», we end up almost immediately with assumption such as «the ideology [of digital culture] has encouraged petty philosophies that deny the mystery of existence of experience», with a statement that recalls most religious rhetoric rather than the language of science. The most interesting fragment of Lanier's argument remains the idea of the software lock-in, although to be more rigorous we should add that there are thousands of different software (and therefore different methods of lock-in), and – to follow McLuhan – any medium actually provides its own specific forms of lock-in (material constraints, cultural constraints, brain frames, etc.). If the medium is the message, the "lock in" argument related to software is nothing but a pleonastic point with an engaging new shape. If McLuhan is quoted, in fact, it is clear that each medium (from the spoken word to writing, from pictorial representation to movies and digital technology, etc..) is a particular way to mediate experience (McLuhan 1964).

This is what Nicholas Carr acknowledges, comparing the Internet to other forms of mediation that have accompanied man since the invention of language. Carr points out a rather interesting cultural trend of consumption linked to the spread of the Internet, that is often overlooked by most analysts, the role of *information overload* and the subsequent defense reac-

tion that leads the user to spend less time reading the various online resources. In Carr's view one of the problematic aspects of current media consumption is that a superficial look to pages is becoming the primary reading method, and this would lead to "a reversal of the initial path of civilization" (Carr, 2011). The reasoning of Carr, accurate and supported by numerous scientific research and authoritative sources, however, also leads to the awareness of the existence of forms of compensation and cognitive skills that are now strengthened, such as visual attention processes, brain functions related to fast problem solving, ability to work in multitasking. Carr also emphasizes one of the most important issues for the evolution of the network: the excessive control gathered in the hands of a few dominant players, like Google (not only a search engine but a real hub for many of the daily activities of each Internet user) and Facebook (the first social network in the world, it has demonstrated to be able to incorporate into a single environment services that were previously separate activities). These problems are tangible and political institutions around the world are beginning to deal with them, for they have to be faced with proper preparation and discipline even in the educational field, because they not only affect the future but are already part of the present times for millions of people in the world.

4. Toward a new learning potential

If the ultimate goal of education is to ensure that all learners can benefit from learning in order to enable them to fully participate in social, public, political, communitarian, creative and economic life, educational systems should not only be constantly up-to-date, but they should also be able to teach something about a changing world. The conclusions of the examined studies suggest that shutting ourselves in the well-known practices of the past times – and this applies to many examples of poorly attended academic e-learning presented as educational innovation – does not seem to be a winning position, but rather a way to amplify the gap between institutional education and society (Maragliano, 2009). Sociologist Alberto Abruzzese describes the education field as something that has come to miss an essential part of society, and society as something that has come to miss an essential part of education:

«The dominant paradigm is the one-way education (just as for television communication), in which knowledge is restricted to his memorization, and the living experience of things that are taught is thrown out of the classroom [...] and is thus postponed to the future world of jobs, trades and professions. [...] Education emphasizes on a vision of teaching and learning practices that is at the same time universalist and episodic. Education cannot say something about needs, but about principles and obligations. The knowledge supplied by educational systems works more or less with the same logic of public transport: as if it were learning blocks to be disposal from a container, the big one of the teacher, the apprentice little one» (Abruzzese, 2008: 170).

Obligated by professional responsibility to know young people and adults to whom they are addressed, educators should know that digital media are increasingly used in many complex ways to expand and develop people's social dimension and interests; that sharing interests works as aggregation power for people and as a boost for creating new relationships and connections. They should understand the dynamics of online self-learning and those that stand on collaboration among peers, as well as the dynamics of reputation fluctuating and those

that lead to the acquisition of new skills and abilities in relation to different media languages. Among the causes of failure of many common experiences of e-learning – apparently “innovative” – there is the gap between the opportunities offered by the new media environment and the digital resumption of a Tayloristic educational model. “One size does not fit all”, says sir Ken Robinson in his *The Element: How Finding Your Passion Changes Everything*, showing how education is often a limitation for the development of abilities such as creativity and cleverness (Robinson 2009). Even the software that is most used for academic and educational online courses (such as the open source software Moodle), when compared with popular social network sites, seems to be strongly limited and limiting (Lopez et al., 2010).

McLuhan was not alone in his effort to point out that schools and academies are among the few institutions still structured upon methods of fragmentation and division of labor that were typical of an industrial society, while they should instead be the most sensitive and receptive to social change and cultural innovation. Terry M. Moe and John E. Chubb, careful observers of the educational system of the United States, write from within a highly dynamic country with regard to economy and market:

«Public education is run by the government [...] Whether innovation happens at all, and if so, what forms it takes and how extensive it is, are all determined in the political process [...] In public education, innovations are not unleashed. They are resisted, fought, and crippled. Or at least they have been. But the times, we believe, are a-changing» (Moe, Chubb, 2009: 99).

The analysis of consumption and social behaviors of the past ten years show that the division into predetermined cycles and the hierarchization of roles and times typical of traditional learning processes do not provide learning paths that are qualified for a network society. With the words of Curtis J. Bonk, «education is a highly reactive and slow-moving industry» (Bonk, 2009). Or, as written in the OECD 2008 report:

«In the school sector, the rhythm of investments in technology, intended to facilitate its adoption, has generally been impressive in OECD countries. However, it is well known that the results in terms of real adoption fall short and do not match the initial expectations at all» (OECD, 2008: 2).

Education, training and education – in relation with the fast development of communication technologies and their widespread use – can no longer stand on unquestionable principles governed by traditional educational and learning programs, because they are always mediated by material determinations of social change and individual and by collective needs connected to these changes.

Institutional education does not cease to represent learning practices as something that has its focus on the objectual dimension of knowledge, stable and closed as the typographic one. The propensity to transmit knowledge by taking as a model the logic of texts organized in a hierarchical-sequential way (and programmed according to the priority given to a very specific point of view) makes many “e-learning delivered” courses not only unnecessary but even counterproductive. «Nothing is easier to assess than information recall on multiple-choice exams, and the concise and ‘objective’ numbers satisfy committee members busy with their own teaching and research» (Wesch, 2009).

In participatory cultures people are nodes within a network, capable to interconnect in a productive manner with a variable number of other nodes. The rigid partition of work fades

towards a more fluid organization in terms of time and roles, and ceases to be the rigid and pre-ordered schedule typical of Tayloristic system.

In a student-centered e-learning path focused on learning rather than teaching – for which many of e-learning courses should be redefined more accurately as *e-teaching* courses (Maragliano, 2004) – the teacher is a mediator and a coordinator, and encourages the exchange and the participation of those involved in educational processes. These are forms of learning that, once the student has learned the lesson of social networking sites, can facilitate the redefinition of teaching towards models that give priority to the full co-operation rather than mere competition. This is what Bonk calls “Web of Learning”:

«Personal and professional friends networks pop up in Facebook, Bebo, MySpace, and LinkedIn, to share one's ideas, connections, and current events. What is clear is that this Web of Learning extends to all age groups, all walks of life, and learners in all corners of the world [...] During the past decade, millions of people have taken and completed at least one online course. Millions more are enrolled and participating in an online course at his very moment. The Web of Learning has changed the learning potential [...] and with this sudden opening of potential come new learning accomplishments [...] We are witnessing a massive uncover of human potential» (Bonk, 2009: 31).

Bonk also suggests that technology does not automatically lead to participation and commitment, because the mere technology is not an enrichment for the subject of learning: “innovative pedagogy is required”. In the most interesting experiences of online learning, subjects and objects appear as mobile entities, as well as teaching and learning are reconfigured as open functions. The studies on digital environments and cultures of participation forced us all to become aware of a given starting point for any discussion on new media and education: there are several things that online learning cannot do, and yet there are many activities that exist online, impossible to achieve in a face to face relationship.

«For example: interaction of learners with all the other participants, simulation, sharing the same working environment. Not something that is easy to find in common university education, because of both materials and conceptual restrictions [...] You can write together on the same page or at the same time, on the same blackboard?» (Maragliano, 2008: 99-100).

Beyond the criticism on the inherent value of content, analysis on the forms of Wikipedia massive encyclopedia edification show that works like this can only exist because of enabling technologies, real architectures of participation (Tapscott, Williams, 2007; Shirky, 2008; Lih, 2010). This is what Shirky describes as “systems of self-synchronization between otherwise latent groups” (Shirky, 2008): social media and social networking sites, thanks to the decreasing of transaction costs and, more generally, of obstacles to communication on a global scale, have made powerful environments for sharing and collective action available to all. This led to ease in organizing large scale groups at low cost, and especially led to the possibility of carrying out complex tasks without strong top-down control: poorly coordinated groups today can achieve goals that were previously beyond the reach of any organization.

As previously said, the removal of obstacles to public expression by social media can lead to reactions of fear or closure, and that is evident in the reaction of many educators and academics to contemporary “mass amateurization” processes (Shirky, 2002). As a result of a misunderstanding privilege on all that is cultural, resistances to the changing media landscape are stronger than curiosity or necessary pursuit of openness that should characterize any learning process. And in the meantime social bookmarking, tagging and folksonomy are

now also affecting businesses and traditional businesses, as well as more attentive institutions. More and more online players now actually allow the creative reuse of their content from other parties, as this increases its value in various ways, and slowly, even educational institutions are repositioning themselves in this area. Yochai Benkler, a law professor at Yale University, writes:

«The high capital costs that were a prerequisite to gathering, working, and communicating information, knowledge, and culture, have now been widely distributed in the society. The entry barrier they posed no longer offers a condensation point for the large organizations that once dominated the information environment. Instead, emerging models of information and cultural production, radically decentralized and based on emergent patterns of cooperation and sharing, but also of simple coordinate coexistence, are beginning to take on an ever-larger role in how we produce meaning – information, knowledge, and culture – in the networked information economy» (Benkler, 2006: 32-33).

In conclusion, we can reasonably argue – again with McLuhan and Wesch – that the new media landscape offers new opportunities to create learning communities really able to involve students and teachers in a common location. The idea of “the environment as a classroom” (McLuhan 1977) now includes the digital media ecosystem in which we all live every day:

«this is what I have called elsewhere “anti-teaching”, in which the focus is not on providing answers to be memorized, but on creating a learning environment more conducive to producing the types of questions that ask students to challenge their taken-for-granted assumptions and see their own underlying biases. The beauty of the current moment is that new media has thrown all of us as educators into just this kind of question-asking, bias-busting, assumption-exposing environment. There are no easy answers, but we can at least be thankful for the questions that drive us on» (Wesch, 2009).

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Digital Natives: technological expert knowledge in the Digital Culture

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Preliminary Methodological Considerations

The main objective of my research was to understand and analyze the daily technological practices of young people⁹³, so as to identify the technological socialization patterns of the so called 'digital generation'.

Previous studies on young people and new technologies have usually adopted theoretical perspectives that do not reflect at all the daily reality of young people and their relationship with technology. In other words, previous research has been carried out without considering the perspective of young people themselves. However, if asked directly about their technological practices, the answers provided by the 'young' reveal that there is a symbolic and relational framework at work which constitutes the 'natural' environment where they can act and interact with peers.

Unlike previous research, the theoretical-methodological approach adopted in my doctoral thesis emphasizes the importance of the everyday contexts where young people relate to the technological. This has several implications: the rejection of adult ethnocentrism; understanding that young people are active producers of 'the social'; the dismissal of biased and preconceived images of youth; and the rejection of dichotomous approaches to the relation between young people and ICT, in particular that involving a technological determinism perspective, which has so often complicated and distorted research on this topic.

Therefore, in my doctoral thesis I consciously departed from technological deterministic perspectives and approached the relation between young people and new technologies as a two-way relationship, assuming that none of these two elements can be understood in isolation and paying special attention to the role of young people as active producers of technological meanings and technological practices. Through these meanings and practices they construct and perform their 'youthhood', and enact their sociability.

Methodology

Making a certain approach to the world of meanings of the 'young' implies analyzing their daily practices. That is to say, the methodological objective is to analyze the personal

⁹³ Though definitions of youth vary widely – it usually refers to persons aged between 14 and 29- in my research I use this concept to refer to adolescents aged between 14 and 17. This allows me to focus more specifically on the digital generation.

and inter-subjective meanings that young people give to their technological practices.

For this purpose, I adopted a qualitative approach. However, I was also interested in using available data in different databases to describe leisure practices, technical equipment, users of new technologies, etc. Therefore, in addition to the qualitative study, I carried out a descriptive-quantitative analysis of some aspects of the technological routines of young people⁹⁴.

In order to gain an initial interpretative framework from where I can disseminate the world of meanings of young people, the ethnographic phase began with an introductory questionnaire that allowed me to make first contact with young people and their symbolic universe. In a second stage, the results of this questionnaire were supported by several focus group interviews. In this second stage, young people were supposed to explain their daily experiences with ICT and discuss collectively their views and experiences with them.

The questionnaire was designed on the basis of certain categories that revolved around the use and appropriation of new technologies by young people. Given that there were few previous studies on this subject, I developed an *ad hoc* questionnaire based on the description of different categories related to the thematic areas I wanted to analyze:

- General uses of ICT

- Technological uses
- Preferences and importance
- Location at home
- Communication

- Computer and the Internet

- Objectives
- Uses and preferences

- Mobile telephones

- Uses

- Videogames

- Motivation
- Playing forms
- Uses and preferences

Based on these categories, I formulated the items that composed the questionnaire. The questionnaire was filled in by a total of 306 students (27 in Spanish and 279 in Basque), aged between 14 and 17, in the secondary school⁹⁵.

However, the quantitative study was not statistically representative. It should be noted that it was an initial approach to the digital generation, so it was not intended to be exhaus-

94 To the extent that the fieldwork was limited to the Basque Country, the main data source was EUSTAT (Instituto Vasco de Estadística), but obviously I also considered other sources such as Instituto de la Juventud, INE (Instituto Nacional de Estadística) and Eurostat.

95 Three secondary schools were volunteer to participate in the research project, all of them in Vizcaya (Spain).

tive. Its purpose was simply to allow me to make first contact with young people and to draft an initial pattern of analysis in order to carry out further research.

Both the quantitative study and the subsequent qualitative analysis were carried out in secondary school settings⁹⁶. Despite the constraints that such a formal context can impose, the school setting allowed me to compare different technological practices within and outside the educational context. It also allowed me to conduct focus group interviews among young people who were familiar with each other and displayed previous social dynamics.

Once I obtained the results of the questionnaires, I wrote the outline for the focus group interviews. These were the topics that lead the open interviews:

- **General technological uses**
 - Usefulness of technologies
 - Technological skills
 - Technological appropriation
 - Creativity in the uses
 - Online /offline interaction
 - Role of parents
- **Computers and the Internet**
 - Purpose of the use
 - Time of use
 - Identity and online relations
- **Mobile phones**
 - Purpose of use
- **Videogames**
 - Purpose of use
 - Playing forms

The interview outlines were based on these topics. A total of 19 focus group interviews were made, 17 of which were conducted in Basque language and 2 of them in Spanish. All interviews, however, were transcribed into Spanish.

The groups consisted of 5 to 7 members. The students that composed these groups were not selected on statistical criteria, but structural ones. Students who were high-profile users of new technologies were chosen so as to find out the meanings of new technologies had for those who made intensive use of these technologies and incorporated them into their daily practices. In total 115 young people participated in the focus group interviews. The objective was to get information about their daily life habits with new technologies and to discuss collectively their respective opinions and experiences. This is, I believe, the best way to get not only firsthand information, but also to access to the symbolic universe and to the meaningful experiences of young people.

⁹⁶ This was the most appropriate way of analyzing a research population composed of minors. Obviously, all minors who took part in the study had prior parental consent.

Contextualization

Sociological studies considering young people social actors were first carried out in the second half of the twentieth century. From that moment on, 'young' has ceased to be a simple adjective. 'Young' has become a way of being and a subject status. Youth demands, hence, social recognition and participation in social, political, cultural and moral decisions; moreover, it becomes the axis of cultural and social innovations, and develops its own lifestyles and movements.

Youth, taken as a social reality, has its own socio-symbolic structure. Understanding youth as a social and cultural phenomenon involves moving away from static to interactionist categories. In this regard, youth culture can be defined as a set of lifestyles and values [1]. To be sure, youth is not only the expression of a stage of life, but also a condition of existence that demands recognition of both its social specificity and its productions.

Youth, as a social phenomenon, can only be defined in cultural terms. Youth culture contributes to the renewal of the culture in which it is inserted. Its major structuring factor is the notion of 'generation', which manages to link together biographies, structures and history. Suffice it to say, in this regard, that the most visible youth cultures have their distinct generational identities.

Generations are identified primarily by the subjective assignment of actors, by a sense of *contemporariness* expressed by shared memories. Currently, this *contemporariness* is inevitably linked to the possibilities that new technologies offer; to the extent that young people have internalized the technological as a natural context of socialization in which they can communicate and interact, the current youth generation should be regarded as a 'digital generation'.

Youth cultures develop their own identities and practices under specific spatial and time contexts. Nowadays young people are no longer in a space and time *interstice*, i.e. they do not simply wonder from childhood to adulthood. In contrast, they have their own spaces and times to express their condition: fashion, music, entertainment, new technologies...

Young people constitute a distinct social group with their own symbolic universe regarding their relationship with new technologies. It can be said that today's young people are not simply *part* of the digital culture, they are *digital natives*. In our Western context, the current youth generation has become the natural repository of knowledge and management abilities regarding technological tools. This phenomenon has reached a point where new technologies have become part of the most intimate daily life of these young people, so they should be considered *natives of the digital culture*.

Digital natives and technological socialization

New technologies influence numerous processes of everyday life, altering the classic space-time organization of daily routines and introducing new elements of analysis in sociological research. This influence reaches its highest level among young people, for whom ICT have become an inseparable part of many of their everyday life processes, from education to the organization of their leisure time.

Previous generations have been socialized in face-to-face social spaces, leisure spaces, for-

mal and family spaces. In contrast, nowadays young people have acquired a further space for socialization, namely a space opened up by new technologies. This means that their relationship with new technologies is marked by closeness and connection, unlike adults, for whom new technologies are somewhat distant, even bizarre and basically functional.

Moreover, for current adolescents new technologies have become an instrument - even a medium - that allows them to relate closer to each other, as shown in the field work of my research. By using them in their daily life, mostly as a recreational device, young people appropriate ICT, and they are able to reinterpret and reinvent their functions and uses. In fact, children and young people have learned much of their technological knowledge by *playing* with technological devices.

All these factors result in a change of attitude towards new technologies. While for the previous generations, i.e. for nowadays adults, digital instruments constituted a novelty and their acquisition was a symbol of social status, for today's youth ICT have become part of their everyday routines. They are no longer seen - at least not primarily - as symbols of a specific social status, but as tools to play with. The recreational use of new technologies is thus enhanced.

This implies a change in the image of childhood as a vital state marked by ignorance, lack of control and understanding. Children and adolescents are growing up among a high number of screens (TV, computers, videogames, mobile phones and so forth) through which they can see the world -even virtual worlds-, interact with it, and communicate with others. They use them with ease and naturalness because they have grown up in a *technologized* environment.

Digital Culture has somewhat inverted generational relations: connections between ages have reversed, and the rigid traditional scheme of biographical separation has collapsed. Margaret Mead, in 'Culture and Commitment' [2], has proposed a typology of cultural forms based on the intergenerational transmission mode⁹⁷. According to this typology we would be in a pre-figurative culture in which adults also learn from children and young people, and the former get a new authority on the basis of their capacity to envision pre-figuratively the unknown future. Young people today are part of the Digital Culture, they are integrated in it and participate as consumers and creators, while adults remain mainly spectators.

'For the first time in history, (children) know more than their parents about an innovation crucial for society' [3]. The vision of the world and the cultural experience of the digital generation are configured through electronic instruments. As Feixa highlights in his article 'Generation @. Adolescence in the digital age' [4], today's children are the first generation to reach adulthood in the digital age. It is not just that they are the age group with greater access to computers and the Internet, or that most of them live surrounded by bits, chats, e-mails and websites. As far as they can remember, they have been surrounded by electronic devices (digital watches, videogames, etc.) that have shaped their worldview. Therefore, adolescents and young

⁹⁷ She distinguishes between: Post-figurative culture in which children learn primarily from their elders; co-figurative culture in which both children and adults learn from their peers; and pre-figurative culture in which adults also learn from children. In the pre-figurative culture children, and not adults, represent the future. The development of this pre-figurative culture depends on a continuing dialogue in which young people have the freedom to act on their own initiative, and this may enhance their ability to envision the unknown. The future can only be built with the direct participation of young people, the ones who have that intuitive capacity.

people use new technologies much more than adults. They are digital natives.

As happens often when dealing with generational changes, the digital generation can be reasonably expected to display cultural patterns and lifestyles different from those of previous generations. However, what makes this generation unique is the extent to which their lifestyles are influenced by the digital world. The digital generation has integrated technology in their daily life naturally, taking this technology for granted. They showed this in the fieldwork:

'We are accustomed [to ICT], since we were born there have been mobiles and all such things around us' (Interview 1).

'For us, it is easier to learn how to manage technology, because we are used to it since our childhood' (Interview 12).

The digital generation was born with information and communication technologies embedded in their everyday life. 'Those who no longer question their existence [the existence of ICT], because they [ICT] were already there since they were born, do not need to learn it [i.e. how to use it] because learning is intuitive [for them], inherent to their own condition' [5]. These digital natives are accustomed, since their childhood, to be surrounded by technological devices, which have been part of their primary socialization context, so their relation to technological devices has always been naturalized.

'We are young, and of course, it is easy [for us to use new technologies]; if you ask my grandfather, he knows nothing [sic.], but if you bring me a new computer, I already know more or less its functions [sic.]; we are young, and we are immersed in the world of technology; that makes it easy for us to control technology' (Interview 9).

This early use of technology, embedded naturally in their primary socialization, has made the digital generation's relationship with technology natural and intuitive.

'When you're a child, you absorb things quickly and learn quickly' (Interview 17).

They consider themselves self-taught regarding digital literacy: the digital generation has learned on its own, without using any manuals, and ultimately turning to Internet forums for questions and doubts.

'We are self-taught' (Interview 5).

'If I don't know something I look for it on the Internet' (Interview 19).

'The first thing you do is to see, to see your brother or your father [using a computer]; I was at home and had nothing to do, so I used to go to the computer room to see what my brother was doing [sic.]... The first time someone comes and helps you, the second time it seems you don't need any help [sic.], then you go on fiddling with things and so on' (Interview 18).

Technology involves a variety of meanings for young people, which are associated with their everyday experiences. However, although it is something embedded in their everyday life, young people often find it difficult to explain the meanings new technologies have for them; due to the 'taken for granted character' ICT have acquired during the technological socialization process, they have become structural elements.

Technology opens up the possibility to explore different worlds and virtual relationships, to experience different practices and meanings. As Serapio [6] shows, for adolescents, new

technologies constitute a symbolic space where they interact with, and are recognized by their peers; they feel they belong to an affinity group.

Moreover, the young digital generation believes that new technologies are their own specific strategies that allow them to get closer to their peers. Technological practices are tools to interact and have fun; indeed, ICT are their favorite entertainment tools. They appropriate them through their daily uses. In fact, children and young people have learned much of their technological knowledge playing with technological devices and 'investigating'.

'You take it and research it' (Interview 11).

'Researching, and then you know how to use it' (Interview 11).

Tinkering, testing, playing; those are the dynamics that govern the use of technological tools. The people of the digital generation have a tendency to investigate on their own. They develop management strategies through trial and error, because their relationship with technology is intuitive and they are not afraid of machines.

'Picking and poking' (Interview 3).

As they grow up into adolescence and the peer group becomes more important as a socializing agent, the digital generation finds out that new technologies are fundamental tools to establish ongoing relationships with their groups of friends. Even more, they feel technological tools are their own private strategies to keep in touch with friends, far away from adult control.

'Social networks are for young people. I find it pathetic to use them in adulthood' (Interview 14).

It was clear from the fieldwork that the Internet and especially social networking spaces constitute, above all, environments for (virtual) interaction among the 'young.' Through applications such as Tuenti, Facebook, Messenger or chats, young people are in constant contact with their peers. Thus, this type of applications open up spaces where everything can be looked at and everything can be shown. This implies a strong symbolic satisfaction for young people: they want to see and to be seen.

'In Tuenti we can see comments and discuss, well..., gossip. After hanging out with friends, people upload photos, but put them privately, so only friends can see [them]' (Interview 6).

Permanent contact with their peers is the function that young people value most. As Gil & Vall-llovera [7] acknowledge 'the important thing is not to be connected, but the possibility of keeping in touch'. In this regard, Madell and Muncer [8] proposed the concept of *hypercoordination*: a social practice consisting of constantly examining in particular their mobile phones and social networking spaces in order to check possible new pieces of information, messages, meetings, posts and so on. Communication through the Internet and mobile phones serves different purposes. As a result, these technologies are complementary rather than alternative.

According to the results of my fieldwork, hypercoordination is a routinary practice in the daily lives of young people,. They always have their mobile phones with them, and check

continually if they have calls or messages. At home the computer is on all the time, so they can see whatever they want whenever they desire, especially updates and new posts in their social networks.

'If you're at home, Tuenti; and then if you go out, the mobile [sic.]' (Interview 13).

For young people, new technologies, especially social networks and mobile phones, are constitutive elements of the relationships they establish with their peers. This is an experience shared by those who have been, or are being, socialized in this generation.

Creative appropriation

Concerning the relationship between youth and technology, that is to say, the technological socialization of the digital generation, the metaphor of the technological *impact* is frequently used. This metaphor is related to a deterministic view of technology, and suggests that the technology itself has the power to produce social change.

Nevertheless, the metaphor of the technological *impact* is profoundly inadequate when one approaches the study of young people and their technological practices. The emerging reality has nothing to do with collisions, impacts or objects / subjects impacted. In fact, this set of practices can hardly be classified as passive reactions to technology.

As stated by Gros ([9], youth are not mere consumers or observers; on the contrary, they become participatory subjects through the use of different forms of intervention. This is directly related to the concept of symbolic work by Willis⁹⁸ [10]. Digital natives do not only consume, neither are they passive targets of technological impacts; they are also cultural producers, i.e. active actors.

As a result, the relationship between young people and new technologies is very close; in fact, it is of mutual influence. Many practices can only be understood if one considers young people and new technologies as a couple. The functions of technological devices are not entirely determined nor are their uses. While it is true that their design provides certain potential uses, young actors also create new applications. Gradually they manage to create new languages, new forms of use, new and unexpected possibilities.

It could be argued that technology constitutes somewhat the subject who uses this very technology; but it is also true that the subject gives meaning to this technology. Hence they both influence each other. The user of a technology has the capacity to produce its meaning, or rather to reframe it, affecting the meanings of technologies. This phenomenon is called *creative appropriation*: the subject is an active agent, capable of making new interpretations, uses and applications of technologies, and able to incorporate ICTs into its daily practice, assuming they do not need to correspond with the purposes they were designed for.

Ron Eglash [11] proposes an appropriation axis ranging from consumption to production. The first point on that axis is reinterpretation. In this situation the object undergoes changes only in its symbolic sense, but not regarding its use or structure. The second point is adaptation,

98 The concept *Symbolic Work* is defined by Willis as the application of human capacities for symbolic and material resources to produce meaning.

which is halfway between consumption and production. In this situation the object is also reinterpreted and used in a way not intended by its creators or by common sense. And finally, the third case is that of reinvention. In this case, the object is reinterpreted, adapted and adjusted physically. New functions are created through the structural modification of the appliance.

This creative appropriation has to be understood as an important source of social innovation. As Eric von Hippel [12] noted in 'The sources of innovation', users, distributors and suppliers are also a source of innovation and not just the manufacturers or producers of goods and merchandise. They produce more than 25% of innovations with social acceptance. Expert users (*leading users*) are, in fact, one of the most important sources of innovation.

The Digital Generation makes creative uses of new technologies, reinterpreting, creating new meanings that go beyond the initial design and structure, and this represents an important source of social innovation.

Expert authority

Adolescents and young people are socially defined as immature, vulnerable and inexperienced. In contrast, reality shows that many (alleged inexperienced) children and young people do explain to adults (the alleged experienced ones) how the Internet works, how they can use their mobile phones to send text messages etc. This subverts the traditional expert model, which is based on the authority of adults: they are the ones who are supposed to have more experience and more knowledge about the world and life.

During the fieldwork I found that all young people interviewed had, at least once, explained to their parents or grandparents how technological devices work. And they describe this experience as frustrating, because of the clumsiness of adults.

'They say it is very difficult, they always look at the instructions' (Interview 10).

So, in general parents are very clumsy, mine at least, the mobile is only used for calls...[sic.]' (Interview 13).

'I had to write step by step instructions about how to use the mobile to my grandfather' (Interview 5).

Unlike adults, young people use new technologies not just as a functional tool, but as an opened social space-time. This is becoming more relevant in their daily practices, because it opens up a space for building meaningful relationships among peers.

Their knowledge in use of technological devices leads me to conclude that these young people are not necessarily inexperienced. This knowledge is such that terms like 'inexperience' are inadequate. In the field of ICT, young people know, create and recreate various aspects better than adults. As Gil & Vall-llovera [13] show, the knowledge, mastery, experience and expertise of adults are not ideal and much less the only option for young people.

Overall, children and young people understand how to use new technologies more quickly than adults. Being born in the digital age makes it easier for young people to assimilate and absorb technologies naturally. In contrast, adults have to accommodate themselves to the digital age; this means they have to go through a different learning process, much more difficult, i.e. a *secondary* technological socialization.

*'My parents always look at the manual, I prefer to experiment' (Interview 18).
'For me it is easy to learn, ultimately all the functions [of technological devices] are the same or similar' (Interview 10).*

Since their childhood, young people have regarded technology as a normal part of their environment. Through assimilation, ICT have been *absorbed* along with everything else. Adults have difficulties to learn something completely new, and are forced to change their usual 'analog' way of thinking to the digital one. The difference is crucial: young people absorb ICT naturally, adults have to adapt to it. Young people's relation with new technologies has been established during the primary socialization process. In contrast, adults' relation to ICT has developed as part of the secondary socialization process.

*'When you are a child you absorb things earlier and learn quickly' (Interview 17).
'Yeah, easily, because we have seen [ICT] since our childhood' (Interview 14).*

These changes of expertise question the evolutionary image of youth. They also lead us to identify a change in the hierarchical knowledge transfer structure; a change that reflects the model of pre-figurative culture proposed by Margaret Mead in which the 'young' are leading the way to change and grasp pre-figuratively the future.

To recognize the almost innate ability of youth to interact with technology implies to recognize, too, their natural greater expertise in the technological domain, if we compare it to adults. Instead of seeing this as a threat to adult authority, we should understand this capability as an opportunity to learn from young people.

In the fieldwork I observed that this situation makes young people feel rather strange. On the one hand, they regard it as funny when they have to teach their parents. On the other hand, they find it difficult to assume the role of teachers; for them it is quite hard to be patient enough to explain adults how to handle the phone, how to surf the Internet or how to play with the console. In a way, this situation is puzzling, because of two reasons: 1) because for them it is so natural and intuitive and, 2) because adults are 'bad learners'.

*'Explain to parents? No way, I explain it step by step. My grandmother was the first one to have a mobile phone and she doesn't know yet how to make a call' (Interview 11).
'Sometimes you have to say it 7 times but they still don't get it' (Interview 13).*

We may have to reconsider the authority relationship between adults (parents and teachers) and young people. This does not mean necessarily that we have to base it on an absolute equality but on the idea of differentiated knowledge areas. Therefore this transforms the relations of authority into relations of exchange and cooperation.

Conclusions and proposals

The ideas exposed so far correspond to the present context in which certain patterns of domestication of technology, a certain general level of digital literacy among youth, a certain development process of socialization and so forth take place.

In this sense, mine is a short-term proposal. Technological practices of young people are going to be extended and / or modified as new technologies, new tools, new uses, etc. appear. So my research should be understood mainly as a proposal for further research.

Digital Natives have grown up engaging permanently and naturally with new technologies, which makes these technologies constitutive of the sociability and literacy of digital natives. Their relationship with new technologies is recreational and informal, they allow them to stay connected to their peers and to build spaces of proximity, sheltered from adults and their control. New technologies affect the way young people learn, how they gain knowledge, communicate and manage their leisure. Their relationship with new technologies is somehow intuitive and 'self-taught'.

However, the relationship between new technologies and digital natives must be understood as bidirectional. Not only do new technologies affect the youthhood of digital natives, but digital natives do also alter the way new technologies are used. The latter phenomenon, 'creative appropriation' means that young people act as active users who do not only use new technologies in a conventional way, but they also reinterpret them and incorporate them to their daily practices, assuming that new technologies are not necessarily restricted to the purposes they were designed for. This allows digital natives to use new technologies in innovative ways.

Hence, digital natives should not be seen as immature, inexperienced or vulnerable in their relationship with new technologies. On the contrary, it should be noted that young people usually explain and teach their parents how to use technological devices: how to use the mobile phone, how to send an email, how to join a social network... To state it shortly, the authority of adults, based on the expert model, has been subverted: nowadays young people should be seen as experts in technological uses.

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Realizing McLuhan's Dream in the 21st Century Classroom

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1. Introduction

This paper is an attempt to pay tribute to Marshall McLuhan by evoking some of his contributions in the context of a research project we have been developing over the last five years to answer the question "How can we educate the new generation of journalists by exploring innovative learning experiences based on social contexts mediated by technology?"

We would like to believe that this project represents, to some extent, a realization, in the classroom, of McLuhan's dream of the 'Global Village'[1]. The project also attempts to pay tribute to the pairing between classroom and city suggested by McLuhan and his co-authors in 'City as Classroom' [2], as well as to McLuhan's vision, reported in 'Understanding Me'[3], that we are "approaching the age when we shall program the environment instead of the curriculum."

The subjects of our research are the students of Media Studies of the College of Education where we teach. Our main concerns, as teachers, are to improve the skills of the students as future journalists, develop their consciousness about the quality of the journalistic product, and get them acquainted with the concept of cyberculture. The activities of our research project started five years ago, based on learning management system Moodle, that we used with our students to maintain communication and share contents. Over the years Moodle became outdated, revealing less and less adequacy to the expectations and needs of the students and requiring more versatility. This was the starting point that motivated us to test a learning experience eminently based on a social platform called Boonex Dolphin. Based on this platform, we created a space for the students to publish their academic works in the journalism area, experiencing the freedom and responsibility of content creation. Now, the research project has moved to a simple blog, with indexed publications in a group gathering in Facebook.

This evolution from Moodle to Facebook can be likened with the evolution from a traditional classroom environment to a city environment, with the city representing community, openness, complexity, connectivity, growth, negotiation, creativity, and innovation, attributes that we can hardly find in a traditional classroom. It is in this sense that we feel inspired by the metaphorical pairing between classroom and city suggested by McLuhan and his co-authors in 'City as Classroom: Understanding Language and Media' [2].

In the following sections we start by contextualizing our project within the current trends about the education of journalists, which we link to the thought of McLuhan. In the next section, we explain our adoption of an action research approach and describe the three cycles we have adopted. The following section is devoted to the analysis of the results of the second cycle, for which the empirical work is now completed. The final section describes the flow of the project

through the three cycles by resorting to McLuhan's concept of "tetrad of media effects", as described in the 'Laws of Media' [4] and 'The Global Village' [5]. We conclude with a few final considerations.

2. Educating journalists for a socially networked world

As proposed by Mensing [6], the debate about the future of journalism education can be categorized today in two main streams: the industry-centered and the community-centered streams. Industry-centered journalism sees journalism as an industrial process of transmitting information from producer to consumer, carried out by professional journalists whose role is to find information, shape it into accurate stories and transmit it as quickly as possible to mass audiences via mass media [4]. Although the majority of present day graduates do not expect to act professionally within this model, which the evolution of the media has made obsolete, its tradition still inspires the imagination of many students and the mainstream strategies of most schools.

The alternative model, defended by Mensing [6], following the pioneering visions of Dewey [7] and Carey [8], argues in favor of a community vision that takes journalism back to its democratic roots, while getting the best out of the new forms of creating, producing and distributing news. This turns the journalist into a reporter, editor, and facilitator within a community and makes the journalist part of a network of relationships [6]. An education that shares this vision recognizes that producing journalism within a network is different from producing it industrially and that the students should learn to collaborate with interested members of the community and develop skills, such as community facilitation and moderation, to enable them to take advantage of these differences [6].

These proposals have evolved, to a large extent, from the concept of citizen journalism, which became popular in the nineties [9,10]. Today, within the alliance between journalism and social networks, this concept is re-emerging with increased strength towards what Jarvis [9] described as "networked journalism", an expression later made popular by Beckett in his 'Supermedia: Saving Journalism so it can Save the World' [10]. Networked journalism does, indeed, emphasize the collaborative nature of a variety of journalism that engages professionals and amateurs alike and recognizes the complex relationships that lead to the news: a variety of journalism that stresses the process more than the product and where the more journalists behave like citizens the stronger their journalism becomes [9].

The importance of the work of Marshall McLuhan in this context is that he has foreseen many years in advance this new world, where a new variety of journalism is needed, and has contributed to its understanding. In fact, if we recall the utopia of the Big Community proposed by John Dewey in "The Public and Its Problems" [5], we can say that McLuhan's Global Village is Dewey's Big Community extended worldwide and strengthened by the power of electronic interdependence [1].

The emergence of technological change in the latest years is bringing new challenges for Journalism. Enterprises in the area of the media are struggling to adjust their business models [11,12], while the students who will be the journalists of the future need extra skills to survive through the professionalization process. This debate about the set of necessary competences a journalist needs still persists in the literature [13,14,15].

Journalism schools are trying to cope with the emergent change, searching for the right bal-

ance between theory and practice in their curricular programs, and eventually trying to fill the gaps between academic education and the professional context [16,17]. Several authors recognize that the universities should not ignore the theoretical necessities of the employment area, so that students could easily adapt to the professional environment [18,19]. While the challenges to the professional identity of journalism are a recognized tendency that stems from the emergence of technology [20], some argue that the core features of the profession did not change that much [21]. In fact, the personal competences of readiness, efficiency in production, versatility, easy writing and communication skills are still highly valued requirements for the professionals in the media industry.

Our research project is an effort to approach these fields by putting into practice innovative learning contexts based on technologies in which the development of professional competences can be nourished. It is all about learning through practice in a community scenario, considering that the future of journalism is more than ever connected to the idea of community [22,6].

3. The virtuous cycle of action research: from Moodle to Facebook

Action research can be described as a participatory research approach emerging from an intense involvement of the significant stakeholders in solving a mutual problem from which relevant knowledge is built in close connection with the change of reality that occurs as the problem is solved. Frequently, the action research process is illustrated as a recurring cycle of continuous improvement. This finds parallel in the area of quality management systems: a planning phase originates a set of actions. These actions, once put into practice and thoroughly observed, create data for reflection, pushing for improvement, and triggering a renovated start. The advantage of this strategy for our research problem is the empowerment of the participant students and their involvement in the collective learning process.

Our attempts at using virtual platforms to support the course started five years ago. The platform we chose was Moodle, an open-source learning management system that we used as a meeting point for content sharing and regular communication between teacher and students. As the results were encouraging, we kept experimenting with this platform for a couple of years, until we noticed that some of the students (who were now using social networks in their leisure time) were criticizing Moodle for its comparatively poor interactivity, outdated design, and lack of mechanisms for community building. Moodle represented a first cycle of action research and was the starting point of a community of journalism students. The resources in Moodle allowed extended interaction between the community elements and the accessibility to learning contents in a way that was free from the chronological constraints of a weekly meeting in the classroom.

On the other hand, in a more figurative sense, Moodle represented an opportunity to recover the importance of written communication as a personal bond to an idea. Initially, the experience was a success; however, the limitations of the communication tools in Moodle became outdated when compared to the emerging possibilities of more powerful synchronous tools, such as Windows Messenger or Skype. This, added to the less satisfactory design of Moodle and its too formal connection with the academic environment, provoked a move toward a second action research cycle that took place in a new platform.

This second cycle of the project, named “Myempowermedia”, was an opportunity to stress

our additional concern with an improved empowerment of the students. For this new cycle, we have chosen Dolphin, by Boonex, a free social networking platform specifically designed to support social interaction, with features that let members create forums, chats, message boards, blogs, events, and media sharing, as well as publicize their individual portfolios and follow up easily the activity of each member inside the community. Dolphin was a promising departure from the previous experience with Moodle, and we went on using it throughout 2009/2010.

This platform created a space where the students could openly publish their academic works. Dolphin also brought user controlled tools inside the community, like blogs, forums, comments, and the freedom and responsibility of content creation, as a reminiscence of the *Agora* of ancient Greece. For the learning context, we aimed at exploring a sense of community when approaching professional experience, taking advantage of the social environment to develop advanced concerns about the quality of the journalistic product and the improvement of personal competences. In this experience, the students took the initiative to organize two competitive on-line publications, thus having to deal closely with the pressure of deadlines, the organization of the editorial direction, and the implications of positions of responsibility. The content analysis of qualitative data collected from their judgements and comments revealed the positive impacts of the project in the perceptions of the learning experience and the development of a sense of community.

4. Closing Myempowermedia: Content analysis of written reports and semi-structured interviews

The Myempowermedia project gathered a community of 123 active members at the end of the academic semester. They were invited to write and publish their evaluation of the project in a small report for the community. In the following weeks, 15 students were personally interviewed in semi-structured interviews, to enable data triangulation. Positive perceptions emerged from content analysis of the written reports that we have triangulated with the data from the interviews. Nvivo was used to code the emerging contents into tree nodes that led to the final structure described in the following concept map. The numbers in the tree nodes represent the quantity of registered content references.

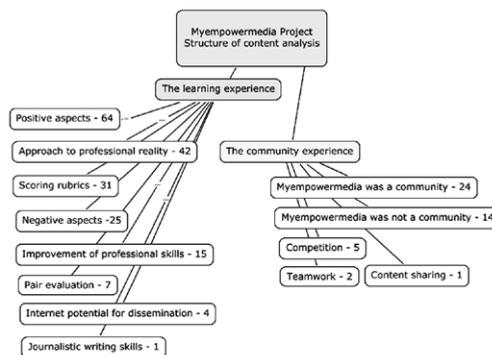


Fig. 1: Node structure of thematic content analysis

All the interviewed participants were able to signal positive aspects about the learning experience, with a clear connection to the results obtained with the analysis of the reports published by the students. Among the 64 references obtained, the participants emphasised aspects like working under pressure with time constraints, the approach to professional reality allowed by practice, and pair evaluation. One of the participants, Francisco (a false name, as all the others is this paper), felt that the learning experience was not an approach to the professional reality, as the colleagues “did not show tolerance to critics” and demonstrated “no working methods”. The rest of the interviewees mentioned aspects related to the sense of responsibility and the opportunity to test a newsroom environment, its different sections, and the professional roles of the journalist. Nine students talked about the enrichment of professional skills obtained by participating in the project. Only one of the interviewed students explicitly referred to the practice of journalistic writing as a valuable personal experience.

About the scoring rubrics used to support the evaluation, the content analysis revealed that initially the students were reluctant to evaluate the work of their colleagues, even considering that the process was anonymous. However, all the interviews made clear that this had been a significant experience influencing their perception of the overall project. Some students prized the scoring rubrics document and process as an opportunity to develop their competences to evaluate a journalistic product. The critics they had to make of the publications of the others also brought increased concerns about their own products. As Tiago, another participant, said: “I think that rubrics resulted nicely... When we look to others work, we are reflecting on our own work. This is very important in the professional context because journalists are never alone”.

Interviewed participants also pointed out some negative aspects, despite being generally satisfied with the learning experience. These statements focused mainly on the platform functionality, like the difficulty in uploading videos, or its overall design. Besides these critics, the participants also commented the fact that some colleagues did not compromise with deadlines. One participant questioned whether the project did fulfil the desired need of personal projection of its members.

The interviews were also rich in content relating to the experience in community, facilitating our clarification of the results previously gathered from the thematic content analysis of the personal reports. In fact, data in personal reports published by the participants at the end of the project frequently cited positive aspects of the community experience, like teamwork, cooperation, exchange of ideas, critics, and commentaries. In the interviews, these core positive aspects seem to have lost some significance, suggesting that students were overindulgent in their first evaluation reports about the Myempowermedia experience.

Nine students considered that their experience in the Myempowermedia project did fit their notion of an online community, by eliciting ideas like common interest in “neighbourhood” events, or the bonds between the working online newspaper teams: “We were interested in knowing what everybody else was doing. I was very curious to see the published works of others.” Cristina; “Our newspaper was like a small community... from the moment we sensed competition; we knew that we had to defend it. Under this perspective this was a community, yes.” Sónia. In fact, four participants mentioned the competition between the two publications as a key aspect of the experience in community. Only two students highlighted specifically teamwork as a valued aspect. On the other hand, for other six participants, the community experience failed the expectations about the interaction between the students, especially after the end of the academic semester. As Catarina states “it was a bit below my expectations... some students limited to their own publishing and little more... no comments, no opinions...”

The interviews were also an opportunity to approach the representations of the students about

the profession of journalist. During the project activities that took place around online publications, the participants role-played and experienced the different tasks of the newsroom. The descriptions of the participants identified the journalist with characteristics such as being uncommitted, a good researcher, serious, with good adaptation skills to face different situations.

When questioned about how they saw their future as journalists, the majority of the students were not comfortable with the exercise of self-projection. Some said that they did not know, others saw themselves as responsible professionals. Some said that it was still too early to think about the professional challenges, and that they did not feel they had, yet, enough experience and competence. The data also suggests that the majority of the participants still demonstrate a narrow perception of the journalist profession, mostly connecting it strictly with the printed media.

Finally, the interviews were also used to gather perceptions about the abrupt ending of the project at the end of the academic semester. Although the participant students had agreed, on their own reiterated initiative, to maintain one of the publications, nothing significant was published in the community in the aftermath of the project, in spite of the full availability of the service. The local students association had also demonstrated their support, by offering to finance a paper edition of the publication, but this did not help. This revealed the abrupt collapse of the motivation with the end of the semester, although some of the students continued to publish their own portfolios, like Maria, who said "I continued to publish because I think that it is the right thing to do for the sake of learning and the transition for professional life". The failure to continue with the project was justified by the interviewees as essentially due to lack of time. The finalization of the academic activity that hosted the experience was also mentioned.

Suggested improvements for future projects included more interactivity, better design of the platform, increased support, user-friendly tools for audio and video integration, and more public exposure.

5. Reflecting around McLuhan's Tetrad of media effects: new wine in the old bottle

The tetrad model proposed by McLuhan and Powers [5] to discuss the effects of media change inspired us to reflect about the successive learning platforms adopted for our project as representing media changes for which it should be possible to recognize, in each case, what was enhanced, what was made obsolete, what was retrieved from past traditions, and what was reversed when pushed to the extremes. Table 1 summarizes the key aspects of this reflection, which we will try to clarify below.

The use of Moodle as a learning management system has enhanced content access and distribution, as well as the communication between the actors involved in the teaching/learning process. The forum and chat tools included in Moodle retrieved the importance of communication based on the written discourse, as well as the correlated personal commitment and involvement of the actors. This made obsolete, to some extent, the canonical strategies of teaching, and created a permanent open channel for the academic activities. On the whole, we share the opinion that Moodle and equivalent platforms represent a technological breakthrough that frees the traditional classroom from its time and space constraints. Taking this particular media to its extreme possibilities, considering the relatively limited social networking capabilities of Moodle, we could imagine that, in spite of its independence from time

and space, the learning experience could transform itself into a closed virtual bureaucracy of exchanging contents and routinely participating in forums.

Table 1: Our research project in the frame of McLuhan's Tetrad of Media Effects

Tetrad Dimensions of the Media		Cycle one: Moodle	Cycle two: Dolphin	Cycle three: Blog/ Facebook
Figure	Enhance	Communication Content distribution	Sense of community	Visibility
	Retrieve	Nexus of written discourse	The Agora democracy context	Social participation
	Make obsolete	Time constraints of classroom	Dispersion of social interaction tools The academic bond is challenged	Idea of school as a closed space
Ground	Reverse	Closed virtual bureaucracy	Collaboration without mechanisms to pace and control it	Learning through genuine practice

The second action research cycle enhanced the sense of community afforded by the Boonex Dolphin social platform, as well as its call for refined citizenship. This was visible, for instance, in the acceptance, by the students, of pair evaluations and reviews of their journalistic production and of the negotiation of common agreements about editorial orientation for the shared online newspapers. These examples retrieve the context of the Agora of ancient Greece as a symbolic representation of the communitarian sphere of influence. The supporting media, Dolphin, represents a solution to make social interaction tools widely available of the Internet, offering all the functionalities of social software, such as forums, chat, blogs, events agenda, content, and others. This tends to make obsolete the narrower vision of traditional online learning management systems, which are more focused on content than on interaction and more concerned with the 'delivery of lessons' than with the creation of rich learning contexts. However, and in spite of the positive results achieved, the poor external visibility of the published contents persisted in this solution, namely in what regarded the inability of the platform to attract professional journalists to participate and contribute to the personal development of the students. If we took this media to its extreme possibilities, we could imagine it reverting into intensive collaboration and interaction, maybe disturbed by a lack off mechanisms to pace and control it enough, but essentially failing to transform that collaboration into a genuine connection with the outside world.

To overcome this limitation, the third cycle of the action research project, started in September 2010, took place in a Facebook group referenced blog. The students created this group and started to produce journalistic contents on a weekly base. Each week the students are working around different journalistic genders and presenting contents related with the profession of journalism, by interviewing professionals. We started by inviting the students to

publish their academic works in a blog and index their publications in a Facebook group called "Posts de Pescada". We have also continued to use scoring rubrics for student peer assessment. Although the experience is still in progress, some preliminary conclusions are visible, especially about the external exposure allowed by Facebook. None of the previous experiences gave the students a community as large as the one they have now enrolled in Facebook, which counts more than 500 members. Also, the community built around the group renovates the idea of a wider social participation that includes, not only the students, but also former students and professional journalists, who have joined the group and are now contributing with their comments. In light of McLuhan's tetrad, this third step of our project, and its supporting media solution, represent an enhancement of the visibility of the students and their work, a retrieval of the ideal of social participation in the traditionally closed classroom, and, to some extent, the obsolescence of more traditional online approaches that still hide behind the classroom walls the activity of students who should be able to learn as early as possible to interact and collaborate with the world. If the potential of this media solution was taken to its extreme, the resulting environment might turn out to be too informal to be useful for traditional structured learning, but the connection between students, professional journalists and members of the general public could revert into a renewed version of the tradition of apprentice journalists learning in the field while practicing genuine journalism mentored by their more experienced future colleagues.

6. Conclusion

Two central ideas from the copious legacy of Marshal McLuhan have been gathered in this paper in the context of a research project where we wanted to clarify the extent to which social networking can be explored to improve the education of future journalists. First, the vision of the classroom as a city, which captures the ideals of democracy, citizenship, and the empowerment of the actors involved in the learning process. Secondly, the four-winged model for the structural analysis of media effects, which we took as a reference to analyse the key features of the three cycles of our project. By following a process that progressively moved, through its three steps, from a content-centred vision to a logic where the learning contexts gain importance over the contents, we believe we have moved closer to McLuhan's premonition that we are "approaching the age when we shall program the environment instead of the curriculum." [3].

We are, of course, still a long way from realizing McLuhan's dream in the 21st century classroom, but we would like to believe that we could at least say, paraphrasing McLuhan in his Playboy interview (1969): "There is a long road ahead, and the stars are only way stations, but we have begun the journey."

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Knowledge Isles in an Open Access World: The Open Archipelago Project

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Introduction

Every culture has been characterized by different systems to transfer and reproduce knowledge overtime, generation after generation. Our culture is discovering the capacity to create and transmit knowledge in a shared, participative way. If the collective and connective approach is growing faster mostly in online communities, thanks to the wide diffusion of social networks, in the academic environments (Universities, libraries, research centers, etc.) sometimes there is a lack of cooparticipation between the different actors.

Concerning this attitude, it is interesting to remember the words of McLuhan:

The university and school of the future must be a means of total community participation, not in the consumption of available knowledge, but in the creation of completely unavailable insights. The overwhelming obstacle to such community participation in problem solving and research at the top levels, is the reluctance to admit, and to describe, in detail their difficulties and their ignorance. There is no kind of problem that baffles one or a dozen experts that cannot be solved at once by a million minds that are given a chance simultaneously to tackle a problem. The satisfaction of individual prestige, which we formerly derived from the possession of expertise, must now yield to the much greater satisfactions of dialogue and group discovery. The task yields to the task force.

Marshall McLuhan, 1971, convocation address at the University of Alberta

According to McLuhan idea, if a first step is to sustain and promote the “task force”, a second mandatory step must be to offer the most reliable tools and to design the most sustainable environments to trigger the processes of sharing, distributing and accessing knowledge.

The aim of this paper is to analyse the contemporary situation starting exactly from specific traditional learning environments: the libraries as the first depot of culture and knowledge, and then to reframe these social spaces according to the transition towards the 2.0 (digital) panorama.

One of the milestone in our scenario is the key concept of digital libraries (D-Lib), that emerged consistently with the growth of the web society and the broader diffusion of ICT systems and services. This idea empowers both the aspects of traditional editorial products and the way of conceiving digital education: on the one hand it implies a transformation in the cultural heritage of libraries, increasing the presence of digital contents; on the other hand it shifts the habitual approach to knowledge by offering a more sustainable distribution, a fast-

est access and a different user-centered concept to better satisfy the needs of the people.

In recent years there has been some important changes in the way to access to digital resources on three trends: growth of online access to resources, development of paper-less reading devices, open culture diffusion. This last trend has been crossed the boundaries of the software development world, the Open Source movement, and has involved the production of cultural contents through the deployment of a lot of types of free licenses, such as Creative Commons.

Considering this scenario, the paper would present a specific action oriented to design sustainable and more interactive environments inside traditional spaces like libraries, offering also an open framework to access and distribute resources.

This action is focused in the Open Archipelago project (OA): it represents a final delivery of a set of research activities to innovate some aspects of fruition, distribution and management of editorial contents in libraries and in academic environments with an open source approach.

Open Archipelago is based on a open source central system to index and to catalogue Open Access materials and to redistribute them in "islands" (end-user clustered platforms that creates the "archipelago"), in which such materials can be distributed through different typologies of devices (iPads, e-book readers, multimedia cards, USB keys, etc.) or consulted directly "on screen" (multimedia tactile screen) and partially printed, according to the policies of the materials and of the hosting institution.

The main idea behind this kind of network is to create an "archipelago" of platforms (kiosks with different features) to put each user in a participative, interactive and immersive environment based on digital contents and to empower the heritage of the knowledge encouraging the institutions to adopt and to distribute Open Access products with web 2.0 frameworks.

Open Archipelago has the aim to create a community of librarians that develops a directory of well profiled resources. In this way we want to stimulate the cooperation between two communities: researchers and librarians. In this sense OA will try to define an active and participative role for librarians, putting them in charge of the transformation from traditional environments to digital libraries.

The OA system of platforms allows also to follow specific design guidelines in order to offer a low-cost, sustainable, scalable and modular solution to implement a system based on new low-consumption devices, on online-trusted Open Access resources and on self-automated settings of distribution based on new web 2.0 technologies.

The research focus started analyzing the issues related to the different approaches between digital natives and digital migrant in specific environments which offer editorial contents. One of the main topics that emerged was how to re-modulate the social inclusion for both these categories in the academic context giving a powerful and affordable solution in the hand of the institution. After a grounded analysis based on virtual ethnography research and on-field surveys and interviews, emerged mostly the aspect to reframe the practices to approach resources, not only in relation to the actual systems which offer the main index or/ and an overall resume, but to access directly the whole content in few steps.

The answer to these feedbacks, taking also into account the need not to overlap with the best practices in the international context, was to design a framework oriented towards a methodological and structural innovation in the field of D-Lib cultural heritage based on well-profiled Open Access resources.

The Open Archipelago project

Open Archipelago (OA) is a cooperative project under development by Università degli Studi di Milano and IN3 – Internet Interdisciplinary Institute of Universitat Oberta de Catalunya. It is a framework prototype to collect and distribute Open Access⁹⁹ materials in a web 2.0¹⁰⁰ perspective. The project started in 2010 and it is still in development, although some deliveries and the very first applications of the framework permit to offer practical outcomes for the scientific community.

The core idea of OA is a central system to index and to catalogue (and to store in particular cases) Open Access materials, like digital version of magazines, papers, books, etc. Connected to this main platform are different end-user platforms called “islands” (clustered platforms as “islands” that creates the “archipelago”), in which such materials can be distributed through different typologies of devices (iPads, e-book readers, multimedia cards, USB keys, etc.) or consulted directly *on screen* (multimedia tactile screen) and partially printed according to the policies of the materials and of the hosting institution. In this sense, the name “Open Archipelago” defines the growing decentralized network that could be considered as an archipelago of platforms (kiosks with different features) and which is able to put each user in a participative, interactive and immersive environment based on open digital contents. Furthermore, the aim of OA is also to enrich the heritage of the knowledge encouraging academic institutions to adopt and to distribute Open Access products following the social and connective dimension of the web 2.0.

OA project during its development challenged with some particular issues connected to the social and the institutional limits of Open Access initiative. One critical element in this view is that the Open Access products are not well known in “soft sciences” environment. If benefits of Open Access are evident even for the Humanities, the Open Access model is historically less known by researchers. In order to reach the necessary critical mass to consolidate the Open Access model in this disciplines would be necessary a reframed path for an immediate approach to the products. Libraries could be the very promoter able to respond to this goal of meta-dissemination: they have ever had cultural heritage goals, and a user-centered perspective. In this sense Open Archipelago would try to become a supporting tool to help to broadly diffuse the open-culture model, as seen in Open Source model for software or in cultural contents for licenses.

On another front, the growth of e-ink technologies with e-book reader devices has allowed to think a different way to deliver “paperless” digital contents.

Considering OA as a framework to distribute open contents on these mobile and portable devices, we must distinguish between lean back reading and lean forward reading (Roncaglia, 2010). The first model is entertainment reading while the second one is more aligned to study or work purposes. Today e-book readers are mostly used as only lean back reading devices. To be useful for research and study purposes e-book readers need to have a wider diffusion in public spaces and improved accessibility features (technical, like a bigger dimension of the reading surface and a more scalable reading software – compatible with the most diffused formats – and

99 Open Access refers to unrestricted online access to articles published in academic journals. Open access products are mostly in digital format, online, free of charge, and free of most copyright and licensing restrictions.

100 In this sense Web 2.0 perspective means to provide the user with more user-interface, software and storage facilities, all through web browser. This has been called also “Network as platform” computing (O’Reilly 2005).

commercial, like a more affordable price and a broader public diffusion).

Considering these aspects, the adoption and the diffusion of this new devices that OA project offers to the final users (student, researcher, professors, etc.) and to the platform managers (librarians and researchers as well) is a first step towards an overall framework able to cross-distribute in many ways digital contents and to encourage the adoption of a new reading style.

Approaching best practices

In this scenario, there are many best cases that have adopted technologies and models aligned to the aims of Open Archipelago project. The existence of overlapping technologies and similar objectives shows that the goals of OA are widely considered in different scenarios and the same OA can be partially designed by a mash up of existent experiences.

Among the different case analysed the most interesting practices for the OA development could be considered the following:

MedialibraryOnLine: an italian case. Horizons Unlimited (Bologna) has developed MedialibraryOnLine (ML), a platform aimed to share digital resources between different institutions, especially public libraries. Public libraries, after a subscription and with an annual fee, can access a lot of digital resources. They can also buy collections of resources and offer directly to their users by ML platform. In this way ML can be seen as a model of remote digital lending. However one of the limit noticed in ML is that Open Access documents or Public Domain books, like the resources delivered by Project Gutenberg or Italian LiberLiber, can be downloaded only on subscription. This project is not oriented to index research documents. ML makes it possible to use an advanced search form that sends a single query at a time to other search engines like Google Books, Google Scholar or DOAJ, but it does not index directly Open Access resources.

PLEIADI Project: a second Italian institutional initiative. Pleiadi (Portale per la Letteratura scientifica Elettronica Italiana su Archivi aperti e Depositi Istituzionali) is a project developed by Italian CILEA and CASPUR. It offers as a service the centralized access to the scientific literature archived in Open Access Institutional archives of Italian universities and in other Italian research centres. Pleiadi works as a service provider to collect and to index the metadata from Open Access Italian archives. In this way Pleiadi allows a simultaneous search from a single web interface over all indexed archives. Pleiadi covers only institutional archives: many digital resources published in Open Access journals are not collected.

DOAJ: a directory of journals. DOAJ (Directory of Open Access Journals) is a directory that provides access to referred Open Access Journals. The directory aims to be comprehensive and covers all Open Access scientific and scholarly journals that use an appropriate quality control system, and it will not be limited to particular language or subject area. The aim of the DOAJ is to increase the visibility and the diffusion of Open Access scientific and scholarly journals.

Since DOAJ indexes only free, full text, referred scientific and scholarly journals, there are a lot of resources that have not been indexed because of a "lower" level of accuracy.

OpenDOAR: a directory of Open Access repositories. OpenDOAR is a reliable source of academic Open Access repositories. OpenDOAR has been identified as a key resource for the Open Access community (Oliver & Swain 2006). The OpenDOAR in-depth approach to repository does not rely on automated analysis and gives a quality-controlled list of repositories. It appears to be for repositories the counterpart of DOAJ for Journals. Both have a stakeholders' communities that contribute to the growth of Directories.

RePEc (Research Papers in Economics): a volunteer-driven initiative. RePEc aims creating a public-access database that promotes scholarly communication and at enhancing the dissemination of research in economics disciplines. The heart of the project is a decentralized database of working papers, journal articles and software components. All RePEc material is freely available. The participation in RePEc as a provider only involves the time of volunteers to prepare and to maintain metadata describing publications of institutional repository. But RePEc does not contain full-text journal articles. RePEc services provide links to many full-text articles, but a personal or institutional subscription is needed to follow these links.

OpenAIRE: a system for research. OpenAIRE (Open Access Infrastructure for Research in Europe) provides a network of open repositories providing free online access to knowledge produced by scientists receiving grants from the Seventh Framework programme (FP7) and European Research Council (ERC). This is the limit of OpenAIRE: a meta engine with a domain limited to FP7 and ERC researches.

Considering these initiatives among the others, it was possible to define specific guidelines and to adopt some of the models analysed to design the core project of OA. The aim was to define which were the best solutions to browse repositories, which were the most used tools to collect and distribute resources and to embed, when possible, the technologies used in other platforms in order to produce a sort of meta-repository for Open Access products.

Concept

Open Archipelago started in 2010 as a research initiative to innovate the traditional practices of distribution and collection of academic materials. The project focus moved from the idea to offer a parallel answer to research communities' needs, not only offering another tool for libraries, but primarily an opportunity to broadly open knowledge in institutional situations where exists a considerable gap between digital and traditional resources.

The whole initiative, supported by an international team of researchers, has several aims, but the research focus was specially oriented to: facilitating and empowering the approach to the librarian heritage adopting an Open Access policy; decreasing the digital divide inside the academic institution by the introduction of resourceful system able to be easily used by digital natives and easily approached by digital migrants; allowing a sustainable access to the information, taking particular care of usability, low-consumption and saving policies promoted in the SDIs European Union indicators¹⁰¹; promoting an innovative and immersive approach to the

cultural heritage, mashing-up previous technologies, in a web 2.0 vision.

The OA concept is based on two levels: the first one consists on a basic research to provide a framework capable to adopt, to share and to deliver collections of scientific Open Access resources; the second level consists in an applied research to propose a multi-platforms solution (the "Islands") to manage these resources.

The model that emerges is an open access network architecture which could manage resources as a traditional repository as well as a meta-crawler indexing system. The framework is based on a semantic hybrid database¹⁰² and on a collection of resources that could be consulted, downloaded and tagged. The process follows the following steps (fig. 1):

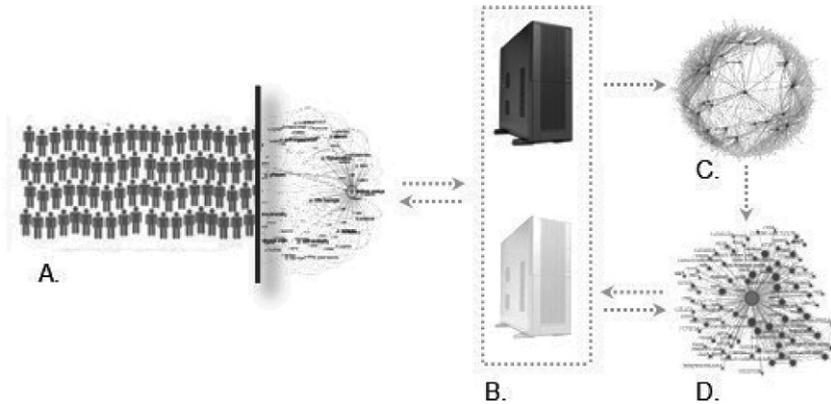


Fig. 1 – Information process

Part of the people in a traditional library (A) access to the core application (web-based) and start crawling the resources, according to their needs and to the suggestions visually offered after every research.

- The core system (web based) elaborates the queries (B) and:
- it answers (C) as a traditional database offering the most coherent information;
- it offers semantic driven answers, suggesting pertinent contents based on overlapping areas of interest, defined by the resources' tags and relations;
- it stores (B') the queries analyzing the tags, the path of each research and the users' choices.
- The database process (D) the queries and it grows during the users' researches, adding new tags and reframing the existing classification.
- The hybrid engine permits to have a dynamical map of the resources (A') that change partially after each research, considering the communities those are using the system (in a local or in a networked distribution) and the distribution settings.

The hybrid core is a database powered by a metacrawler. This configuration allows to store

101 The Sustainable Development Indicators (SDIs) are parameters used to monitor the EU Sustainable Development Strategy in a report published by Eurostat every two years.

102 The concept of hybrid database is based on a bottom-up approach to define the relations and the tags shared between the different resources by the final users (Ciastellardi et al. 2009).

resources and to index contents from different outside repositories, like DOAJ. This approach permits to have a clustered system for information retrieval, that means more resources with less expenses (time, human costs, database complexity, etc.) and with an automatic update sustained by the connection of different self-fedded repositories.

Once resources are indexed, it is possible to distribute them in several ways (fig. 2).



Fig. 2 – Contents distribution from the mainframe

Distribution	
Directly, on site in the library.	on the screen of the different isles, with the possibility to print some parts of the contents.
Directly, on personal/mobile device.	downloading on usb keys, memory cards, tablets, smart-phones, ebook readers, etc.
On site, by WiFi network.	accessing the full source via WiFi connection by a personal device.
Remotely, by networks.	accessing the full source via Internet connection.
Remotely, by subscription.	with feed and RSS distribution.
On demand, by bookmarking.	acquiring a QRcode of the resource with any device (smart-phone, for example) and downloading on demand in any synchronized platform.

Table 1 – Distribution system

Each “isle” (an interconnected web kiosk with touch screen) allows to search the Open Access resources, to explore each one and the related suggestions (matching and refining the research) and to transfer/bookmark to a specific device or to use on-site (read, print, etc.) (fig. 3).



Fig. 3 – Three moments of a research on an “isle”: search, match/refine and transfer.

The pilot project at the Università degli Studi of Milano offers different isles connected with some ebook readers and tablets (fig. 4). Approaching the new devices people can also experiment different possibilities of fruition and the benefits related to portable systems, e-ink technology, on-demand resources, always-on/24-7 content access.



Fig. 4 – An “isle” with two devices remotely connected to transfer Open Access resources.

There are two kinds of “isles” platforms in the OA project:

1. The SEELE platform: main kiosk.

SEELE (Smart Electronic Environment for Learning Experiences) is a kiosk with a wide interactive full touch monitor to offer a reading experience directly on the screen. It simulates the book-format adopting a digital variant of the text, with pages to browse and to flip through with fingers.

2. The PEOPLE platform: satellite kiosk.

PEOPLE (Paperless Electronic Open Public Library Environment) is a kiosk optimized for Open Access materials delivery. It has a smaller screen than the SEELE version but with all the connections with the external devices to transfer directly all the resources offered.

In both platforms users can download the digital resources in many different ways. It is possible to download files simply “drag’n’dropping” with a finger the cover of the resource on an available device. There are so many possibilities as many devices are connected to the kiosk, from traditional USB keys or SD cards, to more advanced tablets (like Ipad) or ebook readers.

When users find resources they can also acquire the QRcodes related to them: this way proceeding they do not download the contents, but only a link as a bookmark. In a second moment they will be able to manage this bookmark on their personal computer or on their mobile devices to download the resource connected to the QRcode.

Development notes

In order to accomplish to the mashing-up approach, which aim is to connect together, re-apply and empower previous existing (and broadly diffused) technologies, the OA project has moved from the best practices to isolate and to define some particular open source technologies and some model to diffuse and distribute contents.

The research has analyzed the relation between the best cases previously indicated, scheduling the different layers that constitute these initiatives, and classifying the main features oriented toward a sustainable and innovative framework. As a second step the research has shifted to a deeper level of analysis, in order to better understand the missteps and the blind-spots related to the different approach between digital natives and digital migrants in specific environments which offers editorial contents.

The deliveries of this processes have permitted to design a preliminary framework of intervention and different guidelines on how to apply the OA model to different environments. The whole analysis was based on a virtual-ethnographic approach to understand which is the behavior of the people during the use of digital contents, especially in the four moments of:

- Information retrieval
- Information browsing
- Information management
- Information distribution

The evaluation of all the behavioral aspects before and after the use of the technological platforms has been investigated by traditional surveys and with the application of a RPA (Replication Protocol Analysis) (Galle & Kovács 1996, pp. 181-200) to collect much information as possible in terms of feedbacks and motivational factors.

One of the main issue emerged has been how to re-modulate the social inclusion of the two principal categories of users: digital natives and digital migrants. The OA project has reframed some synesthetic strategies (Anceschi & Riccò 2000) in order to develop informative system for unpaired people (audiovisual and tactile approach) and to offer a more reliable environment for

both the users' categories. It also moved from some basic principles of ergonomics in design to encourage the use of the platform with everyday's life objects (Cooke & Salas 2008).

After grounded analysis based on virtual ethnography research and on-field surveys and interviews, emerged mostly the aspect to reframe the practices to approach resources, not only in relation to the actual systems which offer the main index or/and an overall resume, but to access directly to the whole contents in few steps.

Technical aspects

OA needs housing on server Linux (LAMP), BSD or Unix-like with this features: PHP 4.2.X or higher with functionality MySQL, XML and Zlib; MySQL database 3.23.X or higher, 500 MB minimum space, minimum 5 db; Apache web server 1:13:19 or higher; PERL; htaccess configuration.

The housing should also include a minimum amount of web space of 5 Tb and no limit or a minimum bandwidth guaranteed daily, with possibility to extend it according to future needs of the system.

All the kiosks can incorporate a free WiFi Hot Spot. There are network/WiFi policies that limit the navigation to the Open Access resources.

Conclusions

OA Projects is a young framework of activities with several aims. As any project with a multi-purpose direction, OA presented some positive deliveries but also blindspots and missteps to correct.

The very first deliveries, related to the pilot experiment in Milano, are the partial change of the traditional librarian environment (by the introduction of the "islands" platforms) and the correlated change of users' behavior interacting with new tools to discover information related to their own researches. This result allowed to change partially the perspective of the library as simple repository of resources, introducing the idea of a more flexible and helpful user centered environment. Traditionally the library was approached with a clear idea of the contents, authors and resources needed. Researchers were able to deepen their analysis using the resources (books, catalogues journals and so on). Now they have one chance more by the semantic connective interface.

In the early stage the main trouble expected, the "technological gap" using new devices and kiosks, was not a real issue: the easily approach to the resources and the intuitive interface allow a friendly approach to the overall framework.

Considering the blindspots, the project is now trying to deal with the issue related to the education of librarians as manager of the system. Archipelago is considered a set of parallel activities that challenge with the traditional approach to libraries. This causes a complicate first impact for the librarians: they have to take care of another technology with another dimension of use. Fortunately after the first steps the platforms are mainly self feeded by users and could be self feeded also in terms of updating by the connection to the database of the different repositories.

The experience of Archipelago is only at the beginning, but the possibilities are many and completely oriented toward a scenario of open knowledge and sustainable connective growth.

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Artists' moving image and its impact on learning in secondary school communities

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Introduction

There is a growing knowledge base about the effects of moving image education within the context of engagement with formal studies, but there is a gap in research regarding AMI, especially research which emanates from an ethnographic perspective. Since the NFER report, *Arts Education in Secondary Schools: Effects and Effectiveness* [1] which suggested that moving image has been under-represented in research into the impact of the arts in schools, significant qualitative research in this area has been intermittent.

In 1961, Marshall McLuhan commented upon the transformation of television 'into an art form [2].' Two years later, this evolution was exemplified by Nam June Paik in his solo show, *Exposition of Music: Electronic Television*. Questioning how this transformation has impacted upon formal art studies was the starting point for my critical pedagogic studies. The foci of the AMI (artists' moving image) *Impact on Learning* research project have been based within formal secondary art, design and media education in England. These foci have included examinations of the following: the state of artists' moving image (AMI) practice as a field of study; the provision of AMI related learning resources; the impact upon students' learning resulting from AMI studies.

My hypothesis is that, over a three year period, I will be able to estimate the development of students' understanding and assimilation of AMI practices. The age of students participating in the *AMI Impact on Learning* research project ranges from eleven to eighteen years old. In addition to collecting data from students, the project is recording the parallel development of pedagogic practices, experienced by participatory teachers.

Within this paper, I shall continue to refer to AMI practices. These modes of work are also labelled variously as artists' film, video art, experimental animation, time-based art and time-based media practices. I have included the latter term within the URL (Internet address) of www.timebasedmedia.com, a learning resource I have constructed and published, as part of my practice-based response to the initial research findings.

We are here in Barcelona to celebrate the life and thoughts of Marshall McLuhan. In 1957, McLuhan postulated that 'we are beginning to realize that the new media are not just mechanical gimmicks for creating worlds of illusion, but new languages with new and unique powers of expression [3].' If artists have been using these 'new and unique powers of expression' for over half a century, then the fundamental questions of where and how AMI practices exist within formal secondary education are long overdue.

The AMI Impact on Learning Research Project

Participation in the *AMI* research project has been requested of students, teachers, artists, academics, curators, distributors and gallery owners, in an effort to ascertain current thinking about the provision of AMI learning resources and its potential impact on learning in secondary schools in England. Artists' moving image practices were not familiar territory for the majority of teachers and students before their participation in the *AMI* research project. The data collected over the past year and a half has been sufficient enough to help me paint a broad picture, even though the *AMI* project is still very much in its infancy.

In 2010, field research commenced in a London comprehensive secondary school where I had previously taught. Through screenings of AMI works and discussion with Year 12 (sixteen to seventeen year olds) art students, it was ascertained that they were unaware of artists' use of film and video as creative media. Considering additional research sites, and the triangulation of the research programme, the choice of a second school for the location of subsequent field research came about as a result of support from Nikki Counley, a part-time administrative worker at Loughborough University. Nikki promotes the linking of local schools with their higher education neighbour. Although the school is the closest geographically to the university, its reputation has declined in recent years. With a decline in numbers of teenagers in Loughborough requiring local secondary schooling, the school has suffered a decline in enrolments, to the extent that its pupil roll is presently running at half capacity [4].

As this is a school undergoing enforced change, it is positioned it as an establishment which is more likely to actively seek change for the better. One result of this was creating the post of Resources Liaison Officer at the school. Essentially, this member of staff creates and utilises links between the school and local professionals, in order provide experiential opportunities for the students. Many of the children at the school come from under-achieving families with a history of long term unemployment [5] and Andy, the present incumbent of the post, has been instrumental in creating opportunities for students to experience professional working practices within the locality. A retired geography teacher, Andy has a passion for 'making a difference' in young people's lives, including introducing students to the notion that higher education is a potential pathway for them. Andy has encouraged his teaching colleagues at the school to participate in the *AMI* project. Three teachers (representing art, design technology and English) have so far supported the project, thus providing a strong basis for future research at their school.

Another discernible result of the school's reformative attitude has been the award of the Artsmark Gold Standard to the school. Artsmark is Arts Council England's flagship schools programme, 'celebrating commitment and passion for arts education in schools [6].' Moreover, applying for the Artsmark award has a strong impact on 'the range of curriculum activities and experiences available for pupils', creating a 'heightened awareness and capacity for change [7].'

The research project has been designed with the idea of revisiting participants in subsequent years firmly to the fore. As Stephanie Taylor notes, 'the ethnographer makes the enormous personal investment of moving into a community for an extended period [8].' As the triangulated aspect of the *AMI Impact on Learning* project develops, the plan is to include at least one more school in England (probably in Liverpool, via the pedagogic network that spreads out from the newly formed Free University of Liverpool) and one more school located outside of the UK.

So far in the research, it has been ascertained that artists' moving image learning resources are not readily available within the secondary schools under immediate examination; AMI related teaching and learning is not commonplace in the secondary art classroom; there is a reluctance on the part of teachers to embrace artists' moving image works as a predominant factor in contemporary art practices. Overarching this list of negatives is the understanding that artists will always be in the vanguard of experimenting with media, and therefore at the forefront of defining their cultural positioning. As McLuhan pointed out in 1964, 'Artists in various fields are always the first to discover how to enable one medium to use or to release the power of another [9].'

A month of school-based field research, with an emphasis on artists' moving imagery (AMI), was completed in April 2011. The engagement of Year 7 (eleven to twelve years old) secondary school students with learning has been documented within the praxis of participative and elicited video ethnography. That is, as much visual data as possible was recorded by the students with video camcorders, with as little intervention on my part as possible. My role as an actor within the classroom was as a temporary teacher, with the attendant emic responsibilities of behaviour management and time-keeping [10].

At the start of each session, videos were screened using either DVDs or QuickTime movie files. Every student was offered the chance to comment upon their immediate reaction to a screening via the use of 'traffic lights'. Each student group was presented with three coloured squares. One red. One orange. One green. Red is for... "Please... no more!" Orange means "OK so far... let's give it a little longer". Green is obviously "LOVE IT... LEAVE IT ON!" During the contact hours, a broad range of works were screened, from industrial output such as Disney's *Dumbo*, through to Samantha Moore's animated documentary, *An Eyeeful of Sound*. Planning the screening aspect of the field research has taken over a year and is in a continual state of reflectivity. A notable contribution in this respect was made by Paul Wells, Director of the Animation Academy Research Group at Loughborough University, who argued for the inclusion of familiar 'industrial' works in the first phase of screenings. Hence the inclusion of Disney and Japanese animé in the programme. Ultimately, the most popular of the screenings proved to be Tracey Moffatt's *Doomed*, which is made of edited clips from disaster movies. This AMI video forms part of the Kaldor Art Projects' learning resource, *MOVE: Video Art in Schools*, which has been distributed free of charge to secondary schools in Australia since 2009, with the express purpose of stimulating 'students to further explore the world of contemporary art [11].' At the end of each screening at the school in Loughborough, the students would formulate questions they would like to ask of the film or video maker. Contained within the research design is the premise that students communicate with artists. Tariq Rimawi's animated film, *Missing*, was screened and received well by the majority of the student audience. Fortunately for these students, Tariq is one of my research colleagues at Loughborough University and he kindly agreed to attend a second screening of *Missing*, to be followed by a Question and Answer session. The students surprised both their art teacher and myself with the depth and relevance of their questioning. The teacher concerned was observing quietly and invisibly from an adjacent room, a state of passivity required by my role as temporary teacher. From technical questions to political comments, the range of approaches adopted by these eleven and twelve year olds towards Tariq's film was impressive. Another method used to measure the impact of the screenings was to ask the students to animate their own name. Firstly, the students were asked to interview one another, using the video camcorders I had provided for this express purpose. The intention behind these interviews was to instigate an autobiographical state of

mind within this group of twenty six students. Selected experimental animation pieces by Norman McLaren were shown, including *Free Radicals*. In this film, text jumps around the screen, accompanied by rhythmic drumming. The students were then immediately asked to animate their own first names, using storyboard pads and coloured pens. The subsequent animated work, which I will present at this conference, gives an indication of how quickly some of the students understood some of the processes and effects of AMI within the context of their formal learning.

Methodologies

The design of the *AMI Impact on Learning* research project is based upon the eudemonistic thrust of action research. A time-based artist, media producer and graphic designer of some twenty five years practice, I am used to creating product for public dissemination. Unsurprisingly, I am drawn towards the practical implementation of research findings, and hence action research as a broad methodology. The premise of action research that projects should be designed to make a positive difference [12] fits well within my critical pedagogic intentions, in terms of both the localised impact of the project upon students and teachers, and the long term effects upon curriculum implementation. Research findings should actively signpost a way forward for social change within the context of the project's parameters [13]. The *AMI Impact on Learning* project emphasises the inclusion of participants within action research processes, an approach in which 'the action researcher and a client collaborate in the diagnosis of a problem and in the development of a solution based on the diagnosis [14].' To this end, the *AMI Impact on Learning* project is designed to allow all participants a prolonged period of time for reflection. Ethnographically speaking, the need for patience and nurturing a sense of mutual respect is a truism. Naught will happen overnight when it comes to establishing the collaborative foundation needed for the implementation of change within the praxis of pedagogic practice. Altering the interpretation of the curriculum within secondary education on a national scale is dependent upon exemplars of best practice, hence the overriding requirement of allowing teachers the time to begin to assimilate elements of IMA practice into their own pedagogies. This implementation may then be recorded and added to the research findings.

Understanding which research methodologies might assist the examination of the effects of artists' moving image on student learning has been a priority. What has emerged is a broadly ethnographic approach to research. The commonsensical flexibility of ethnography encourages the inclusion of other applicable methodologies. Thus the *AMI* project is sited in how 'we all make sense of the world around us in our daily lives' whilst remaining open to scientific systems [15].

Penn Handwerker enthusiastically takes this postulation one stage further when she proposes that superior ethnography (*superethnography?*) 'ordinarily blends numbers, words and pictures [16].' Ethnography thus provides an umbrella for any methodologies incorporated into the *AMI* project.

In mid-2010, I conducted a quantitative survey of thirty six art teachers. The purpose was to construct an understanding of whether or not artists working with moving image media were commonly referenced within formal art studies in England. These teachers were provided with a complete list of Turner Prize nominees, a grouping chosen because the press coverage of this

competition leaves both students and teachers with 'impressions of what comprises contemporary practice [17].' Research participants were not informed beforehand of the makeup of this list. The results of this survey give an indication of the impact within formal art studies of those artists who are recognisable through their use of moving image media. For instance, Jeremy Deller, the 2004 Turner Prize winner, was cited as a reference within the classroom by only one of the surveyed art teachers. Deller is perhaps best known for his re-enactment of *The Battle of Orgreave*, that infamous day of conflict in 1984 between striking miners and the police force. In comparison, Chris Ofili, whose watercolours provide an introduction to figurative painting for many secondary students, was referenced by every respondent to the survey.

Ethnography also affords a hospitality to the visual practitioner, such as myself. The writings of Sarah Pink, Professor of Social Sciences at Loughborough University, have provided a particular impetus to my search for texts regarding community based field research and the presentation of recorded data in a visual manner. Pink is a leading light in this burgeoning anthropological niche. Regarding my stance as an action researcher, 'I want to make a difference', Pink is delightfully supportive, talking of using visual anthropological theory, methodology and practice to achieve applied non-academic ends [involving] problem solving and engaging in 'cultural brokerage' (Pink, 2006). This involves first, representing one group's experiences to another, working across academic disciplines and organizational cultures [18].

As the AMI project progresses, this cross-referencing will hopefully accelerate, as participants begin to produce work for inclusion within the e-learning resource, www.time-based-media.com. My desire to actively present the AMI research project at the McLuhan Galaxy conference is potentially part of this cross-referencing process. It may be that like me, you are part of a small academic community that is gathering in Barcelona in May 2011 to celebrate the life and work of one Marshall McLuhan. As a joint member of this community, this ethnographic concentration, I invite you to speak with me. Allow me to record your comments and add them to the diaspora. I'm sure Marshall would approve! Moreover, visual ethnography allows one to subjectively consider the academic praxis of written text. As Sian Ede commented:

Visual artists are not, of course, expected to use language fluently (although some can) for it is not their primary medium, but artists from any art form might find it hard to compete with an intellectual community for whom the language of rational explanation is part and parcel of the disciplinary approach to the work [19].

My preferred language of expression is televisual. My presentation at the McLuhan Galaxy conference will underline this preference. It is reassuring to know that few, if any, of you reading this in Barcelona in 2011 will disagree with Marshall's suggestion in 1960 (two years before I was born) that if a language 'contrived and used by many people is a mass medium, any one of our new media is in a sense a new language [20].' In this respect, I am attempting to explore an emerging visual language, existant within the praxis of AMI practice.

A priority within the planning of the research programme has been to investigate the need for, and the processes involved in, producing an AMI (artists' moving image) learning e-resource, available for art and design studies in secondary schools in England. As part of the research process, I have produced and distributed a 'beta' version of such a learning resource, www.timebasedmedia.com, which has been made accessible via the Internet. This e-resource has been devised with the purpose of engaging art students by focusing on AMI works.

Background: my practice as an artist teacher

The *AMI Impact on Learning* project provides for the convergence of: my scholarly interests in the distribution of AMI (artists' moving image) works and related learning resources; new media art practices; my own art and design productivity; my pedagogic practice. The experience and understanding I have built up during years of working within the art, design, media and education/academic sectors has helped refine my approach towards this research project.

As the context of this research is arts and media focused education in state schools in England, negotiations with artists and their representatives have been essential. The online learning e-resource (www.timebasedmedia.com) has been designed to support innovative teaching, and therefore the provision of accessible contemporary works was essential. With a background in art and design practice, and experience in online distribution, I was able to suggest a number of strategies, including digital watermarking, which might reassure artists regarding potential copyright infringement. The artist's sensitivity to their relationship with, and their influence on, their own work [21] was taken into account during all negotiations. In my capacity as a trained art teacher I am workshopping the completed online learning resource in secondary schools. In this way I am able to collect data on the impact of this resource (as well as others, for example the *MOVE: Video Art in Schools* DVD resource) as well as students' learning and teachers' developing pedagogies.

The need for AMI learning resources in secondary schools

There is a paucity within formal art studies in the UK, regarding the provision of learning resources focused on artists' moving image works. This statement is integral to my hypothesis, regarding the estimation of students' development of an understanding and assimilation of contemporary AMI practices and the impact of this development upon their overall learning within formal education. There are exceptions to this hypothetical statement, but these appear to be subject to the commitment of individual teachers, rather than via concerted and organised promotion [22]. There is a continuum of research analysis [23] which highlights the potential of moving image focused arts education to counter the alienation of students from classroom activities. In comparison, Australian secondary schools are well provided for. Teachers may access a boxed set of DVDs containing digital AMI works, entitled *MOVE: Video Art in Schools*. These sets include accompanying texts, which are designed specifically to assist teachers and students investigate AMI contemporary art practices. Australian teachers have commented upon the resource's ability to re-engage students who might be at risk of failing within formal education settings. In terms of using the www.timebasedmedia.com website as an agent for re-engagement, I have included *the man*, a video/slide work which I created using commonplace mobile phone technology. Because of the political content and the relatively low-spec technology used, this inclusion was designed to provoke an engaged response from Key Stage 3 students, as opposed to deferential indifference.

In terms of re-engaging learners and effecting a medium to long-term turnaround in students' involvement in their learning and art practice, the available research findings indicate

that the use of moving image provides an artistic medium 'through which dispossessed or marginalised young people can create a sense of belonging and identity [24].' The same report from the Indoor Lane Way project (which is an ongoing initiative in the Australian state of Victoria) also pointed to the potential development of 'an artistic process in individuals that lasts beyond the confines of the project timeline [25].' One possible reason for secondary art students' sensitivity to moving image art is the contemporaneous nature and relevance of this emerging body of work. John Kaldor, Australian art impresario and education benefactor notes that video art 'is fast becoming one of the mainstream forms of art expression [26].' Artists such as Steve McQueen and Sam Taylor-Wood, having received public acclaim for their video works, provide instances of both contemporary practice (as opposed to Dead White European Males – DWEMs - as discussed in Addison and Burgess, 2007) and role models for students, who are attempting to connect with formal art studies in a multiracial, multicultural, multifaceted English society. The use of video as a creative medium, within the context of secondary school art education, fits well within the present art and design curriculum. With regard to contemporaneous art practice and the fostering of relevant student skill sets, The Qualifications and Curriculum Development Agency (QCDA) comments that students' 'experience of new technologies helps them to develop the skills to investigate alternative ways of working [27].'

Between the plaudits of the government for the 'creative economy' [28], with its fertile nests of entrepreneurship, and the smiling praise lavished on a toddler's first painterly attempts at making a visual comment on their perceived environment, there is something amiss. Formal education in England has a very public responsibility to expand the creative potential of every young person that passes through its doors. The aim of the learning process is to produce citizens capable of making a positive contribution to society. In terms of an economic contribution, the British government has not been slow to highlight the connection between visual creativity and future fiscal providence. In the twentyfirst century, wise parliamentarians have stepped back from the Evening Standard paper posturings of design and art and social critics. Blackcab jibes at the waste of public funds on questionable costs. Buildings and artworks and social infrastructures have all been swiped at by irritated journalists. Instead of following in the wake of these attempts to sway opinion away from the notion that radical visual creativity is somehow worthwhile, essentially because of its innovative nature, politicians have noticeably supported the notion that innovation in the commercial world of visual design is vital for the economy of this country to thrive in the twentyfirst century.

This political enthusiasm has not as yet extended to ensuring that technological innovations have the necessary impact upon pedagogical practice in art and design classrooms, especially those rooms containing secondary school students in England who have to decide which specialist subjects to follow. With the advent of domestic digital apparatus, these students have already been affected by technological changes. Digital production means have enabled them to join the publishing class. The world of 'digital natives' [29] is vastly different to my infant world of analogue output. In 1971, on the eve of the new digital age, McLuhan wrote:

I am baffled to know why it is that in the Western world there has been no study of the effects of innovations. There is, of course, much readiness to study the inputs that are called the "content" of our technologies, but insofar as technologies create environments which alter all forms of human perception, there is a hiatus [30].

Within ethnography, it is understood that the cooperation of participants is imperative. In terms of action research within secondary schools, the participatory group includes students, teachers, support staff, administrative workers and management. Pollner and Emerson comment upon the importance of achieving an air of neutrality when it comes to people's opinions, terming it as 'ethnomethodology indifference', which directs the researcher to 'refrain from assessing correctness, appropriateness or adequacy in articulating the practices and organization of the endogenous order [31].' The endogenous order is the lived order, or the current state of thinking and demonstrable opinion, within a specific community.

the lived order consists of how participants in the diverse, temporally developing, concrete circumstances comprising the 'society' concertedly organize, recognize, use and achieve whatever they regard or define as sensible, rational, intelligible or orderly [32].

The importance for academic researchers to engage participants within certain social and professional parameters is accepted within educational research circles. In part this is because of the day-to-day necessity of collaboration between individuals with divergent approaches to teaching in order for schools, colleges and universities to provide a stable plane and fertile ground for learning. In communities of learning, 'relations are about *we* and *us* rather than *me*, *you*, *them* [33].' Commenting upon the 'Critical Minds' research project, which brought together professionals from the Institute of London, four art galleries and four comprehensive schools, Burgess and Addison commented that a primary condition for the success of the research programme was the development of a 'culture of collaboration and mutuality, especially as the professionals involved had diverging beliefs and different pedagogic agendas [34].' My positioning within school communities has yet to be resolved. Certainly my professional role as a teacher provides many bridges which may be used as ways of connecting with school staff.

In contrast, my role as a practising artist promoting the inclusion of moving image as a contemporary art practice may well be regarded as a radical and potentially disquieting presence. Burgess and Addison ask whether artists' interventions in schools might 'disrupt and possibly contest the status quo?' [35] The status quo within the art and design curriculum is dominated by the predominant art practices of drawing and painting [36]. In contrast, the work of many contemporary artists 'is concerned with *challenging and resisting* the very traditions and the notions of subjectivity that are implicit to the art curriculum [37].' Thus my positioning as an artist may have to take a secondary position in order to support my role as a collaborative researcher cum teacher.

A paradox, but one that requires resolution if the research is to succeed in producing results which are both beneficial and effective.

Why the lack of moving image art practices in secondary school?

The survey of art teachers I conducted with regard to the incidence of Turner Prize nominees being cited within formal art studies pointed to a distinct paucity with regards to the inclusion of moving image artists in secondary education. Considering that moving image art practices, though commonplace in the twentyfirst century, do not outnumber other forms

of practice, this survey examines the prevalence of a minority. At present, contemporary practices *per se* are not as prevalent as they might be (and should be according to the 2008 QCA curriculum developments) within secondary art education. Indeed, the 2006 education research project *School Art: What's in it? Exploring visual art in the secondary school* found that

the predominant art practices in all schools surveyed are drawing and painting. The major references for art practice are taken from early twentieth century European art with limited references to art before the 19th century and early 21st century [38].

In July, 2010, I conducted a workshop at a local secondary school, during which I introduced a group of Year 12 art students to moving image works from the Internet and the *MOVE* DVD collection. None of the students had previously experienced a screening of artists' film or video within a formal education setting. When asked if they might explain this absence, the answers centred on their perception of moving image as entertainment, and therefore a medium which is not worthy of the 'art' label.

Is there then an inherent resistance within the state educational system to the promulgation of contemporary art practice? On a superficial level, this might be explained by the immunising effect on teachers of successive governmental gambits, as the curriculum is tinkered with in order to produce the effect of progress in the education sector. When change is forced upon people, whether that be essentially bureaucratic or cultural, there is a naturally enough a perceived threat to self or social identity. When this change is spearheaded by technological innovation, perceptions might be coloured by a sense of this accompanying threat. In 1969, McLuhan suggested that if any technology weakens a conventional identity image, then this 'creates a response of panic and rage which we call "war" [39].'

Another explanation might be the lack of technical resources, or the perceived lack of associated technical skills on the part of the art department's teaching staff. The fear of students failing with exam results is commonly cited by critical thinkers who examining a curriculum system which sets attainment standards [40]. Delve deeper though, and pervasive resistance to change from within our schools might explained as a means of supporting the status quo regarding power structures within our society [41]. There is much emphasis now on developing students' critical faculties. However, independent and effective thinkers, open to the possibilities of change within both their own lives and society at large [42] are less likely to adhere to the constraints of any status quo. Revolutionaries do not accept the status quo. They are more likely to question governance and actively engage in anti-establishment behaviour. Such critical citizens are more likely to be revolutionary in their thinking than those who never question the power structure which maps out their daily existence. As discussed previously, contemporary art practices abound with examples of artists engaging politically with moving image. Artists *will* question the prevailing power structures within society and artists using moving image media. Therefore, artists' moving image, with its *potential* to reach out and touch virtually every human being alive on this planet via the Internet, might be regarded as a source of anti-establishment behaviour in its various guises. Some intellectuals 'have argued that the western concept of art is a primary means for reinforcing and consolidating existing power relations [43].' With increased curriculum-led incorporation of practice-based art learning, and the need to sustain development of the creative economy [44], the examination of contemporary art practices which question power structures might not produce the required 'responsible' and acquiescent citizens [45]. Perhaps underlying what is ostensibly a reactionary

take on education, there is the perspective of the 'rear-view-mirror society [46]' that McLuhan saw around him and which is echoed in today's social paranoia regarding teenagers.

Conclusion

Having examined the place of moving image art (AMI) practice in secondary school art education in England, the initial findings of the *AMI Impact on Learning* research project point to a paucity of provision in both related pedagogy and learning resources. When considering the causes of this paucity, a broad range of affective factors have been examined, including: the negative effects of curriculum focused concern; fear of new media; fear of social change; even the self-interest of the art market.

Questionnaires, semi-structured interviews and workshops over the past months have formed the basis of the *IMA Impact on Learning* research project. In particular, my adoption of a *visually participatory* ethnographic approach has strengthened a very positive start to the field research.

So far, students, distributors, artists, teachers and academics targeted for participation. One immediate result of the field research has been the reinforcement of one premise of my starting hypothesis; namely that moving-image resources have a positive impact upon engaging (and re-engaging) students of art, design and media with their formal studies.

A small portion of the results so far have been published on the developing *timebasedmedia* website. This resource will continue to be developed and will hopefully provide a basis for further related research. In order to accomplish the eudemonistic prerequisite of action research, that research findings should make a positive difference, this website will provide a working model for teachers and students from any school, in any nation, to work with and improve over the coming years.

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Informal Learning and Concept Maps: a New Perspective for Instructional Design

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1. Introduction

Students, professionals, employees or technicians have specific needs when attending training programmes: essentially, they want to effectively increase their knowledge/competencies as quickly as possible. The focus on time, our most valuable resource, is incontrovertible.

The society acceleration is getting stronger and generates a constant lack of time. We are always and desperately looking for seconds, minutes and hours to dedicate to our projects, to our private life, to our hobbies and, obviously, to our professional and intellectual growth by means of different kinds of life long learning activities. And, above all, we all want to spend our time to study what we really need in order to increase our knowledge/competencies.

For this reason, let us try to identify the places and the opportunities of training by means of a research activity that aims at both maximising the results and reducing the duration of training processes. A research that more and more often intends to confine the formal training paths to short and rhapsodic moments, during breaks at work or in spare time, and that, as a consequence, gives an extremely fragmented and nonlinear value to the acquired knowledge.

This controversial effect conflicts with our complex need to get a quick and direct access to information, without losing the overall view. Fortunately, we often get this overall view back through the “unexpected” paths that are provided, day after day, by the intricate net of human and professional interactions and relationships. As a matter of fact, although now “formal” learning appears to be nonlinear and unsettled, the learning process is always continuous and keeps on taking place outside the traditional training paths. Day after day, and often unintentionally, we get in contact with a huge amount of information, for example, while attending a meeting, listening to a TV programme, reading a paper on the Internet or accidentally hearing a common conversation in a coffee bar. When all these pieces of information are kept in our memory cognitive structures, they become part of our knowledge system and, then, the object of the so-called “informal” learning. The knowledge system deriving from this process allows us to work and survive in our society; it constitutes the synthesis of an unceasing selection of heterogeneous data and the integration of the different kinds of learning – “formal” and “informal”- according to time dimension.

In short, we can affirm that what adults know and allows them to keep on learning derives from a fast overlap and contamination of different knowledge layers and levels gained in the most various places and contexts, without any kind of continuity and without any limit imposed by the non-“institutional” nature of the learning experience.

Hence, any designing and methodological choice aimed at the creation of effective training programmes must consider all these premises. It is then necessary to think about a new configuration and interpretation of the information that is able to foster the exploration and the delving into the different topics. It is also important to choose didactic strategies that are able to customize the paths, and identify and validate the informal learning. Only in this way we can foster our knowledge into a training context that is actually integrated and in accordance with our specific learning needs.

2. E-learning and meaningful learning

To what extent can e-learning strategies effectively answer to the need of optimizing learning time and increasing the value of “non formal” training paths?

The spread of distance learning and, in particular, of smaller and smaller learning objects is the effect of the increasing demand for “quick” and “pulverized” information, that should be immediately accessible through different kind of electronic devices. Some believe that in the next decades this delivery modality will be strategic in the acceleration processes of flows of content transmission both in informal and non-formal terms.

These thoughts about the nature and effectiveness of e-learning are related to many general questions about how to do a better and more flexible use of technologies and tools in order to facilitate adults learning. In particular, constructivist scholars (Dewey, Piaget, Vygotskij, Bruner, Gardner, Jonassen, Ausubel) highlighted how learning is basically a social activity with two fundamental facets: 1) a flexible and customizable didactic environment opposed to the linear traditional paths, and, 2) a learner, who plays an active role in the learning process.

In the introduction to the second edition of his “Understanding Media” (1964), when nobody still talked about e-learning or distance learning, McLuhan already said “We are entering the new age of education that is programmed for discovery rather than instruction. As the means of input increase, so does the need for insight or pattern recognition”. In this regard we believe that giving students the possibility to effectively customize their knowledge path would be an added value in terms of “meaningful learning”. According to Ausubel, we can talk about “meaningful learning” when the knowledge process takes place in a self-sufficient way and when the students can relate new information with their cognitive structures and, then, with their pre-acquired knowledge. In fact, according to Ausubel, a knowledge content, that is new information, must be logically meaningful to become a part of the learner cognitive structure. And a content is logically meaningful in accordance with the relations it can potentially determine with learner’s pre-existing cognitive structure.

We need to consider this new environment every time we design and implement distance learning paths for universities or public and private companies. We believe that learning should be structured as a process that is flexible and customizable with relation to contents and students features. In particular, when thinking about adult learning, McLuhan’s utterance “the user is the content”¹⁰³ should inspire our design process for online courses: a student should be able to discover and choose to follow a learning path rather than passively

attend a pre-established and not-customized course. That is why we need to rethink about the contents navigation logics in the learning environment to let students be the leading actors of their personal study paths.

Only as protagonists, students will be able to reinterpret and effectively select the information system, define their specific “path”, and, then, meaningfully learn.

3. A new learning object model

Let us discuss about some basics. In order to effectively satisfy the aforementioned needs it is fundamental to create a new learning object model that is able to: a) customize the learning paths according to the actual individual learning needs; b) optimize the study time in order to facilitate individual study; c) promote an holistic approach to analyse and study the reference contents; d) facilitate the collaborative formal and informal learning.

How can we do it? Let us reason out the choices we can make in order to reach every objective.

3.1. Finding past knowledge

First step. It is necessary to design a learning object with a rigorous diagnostic assessment system, in order to measure students past knowledge on the topics, a knowledge that could have been gained from formal, informal or not formal paths. Such measurement is supposed to indicate how to customize the path according to the actual learning needs. Hence, in the initial phase, the administration of a test will be fundamental. This test should be composed of structured and semi-structured questions, depending on the learning objectives related to the course topics. Such test should necessarily cover all the learning object contents.

3.2. Setting up the student's own path

Second step. In order to facilitate the learning process it is important to select the more suitable training resources for the students' profile and share the information, the reference schemes or the additional activities they actually need. It is clear, then, that the diagnostic assessment and the path customization should be tightly related. Depending on the test results, the learning object should automatically supply a customized path to learners, by selecting the contents they should delve into and by showing the most effective didactic sequence to quickly attain the learning objectives.

3.3. The concept map

Third and fundamental step. It is essential to show the course contents in order to: 1) help to search and identify the needed information as soon as possible, and, 2) highlight the logical relationships between content areas in order to get an overall view of the contents. In our

opinion the best solution consists in adopting a concept map.

We chose to use this kind of logical-visual content representation basically for two reasons. Novak's researches and our experiences in the field showed concept maps are a very powerful tool to organize and share information. And, above all, they represent the most intuitive and immediate representation of a mental model. Thanks to concept maps, the ones who do not have any knowledge about a specific topic can quickly acquaint themselves with it and catch its general meaning, its contents structure and its logical connections. Moreover, concept maps are effective tools to formally describe mental models and they can facilitate meaningful learning. By representing the knowledge system in the form of concepts and connections between them, they help the learners to relate new and old information, and enable their meaningful learning process.

3.4. The multimedia balance

Fourth and last step. It is necessary to plan the functional integration of different kinds of media and learning activities in order to share, discuss and think about the topics under consideration. Then, the learning object should include wbt, lecture notes, job aids, videos and so on. Furthermore some collaborative activities in the learning platform should be scheduled in order to encourage the exchange of ideas among users.

4. The learning object structure

Until now we have only described the general features of our learning object and we highlighted its most innovative facets. But we have not revealed yet any useful information to understand how we can make such a tool. A concrete example will surely help us explain it. Let us examine the design and implementation phases of a learning object about work health and safety, a subject matter many companies and organizations are familiar with.

4.1. Point of departure

Today work health and safety is one of the widest and most delicate subjects for many companies and private organizations. Frequent normative updates, companies regulations, good practices, set of forms are just some examples of the many documents we have to confront with in order to delve into this particular subject. Then it is necessary to organize contents in an "accessible" way for our students.

4.2. From content analysis to concept map

According to the information collected by interviewing many content experts and also by consulting different kinds of specialized documentation, we created the first clusters of content. In the first draft of the map, we tried to identify the macro areas related to the main

contents. Then we gathered the first materials. In particular, about work health and safety, we first identified three macro areas: 1) related laws; 2) involved actors; 3) prevention activities in workplaces.

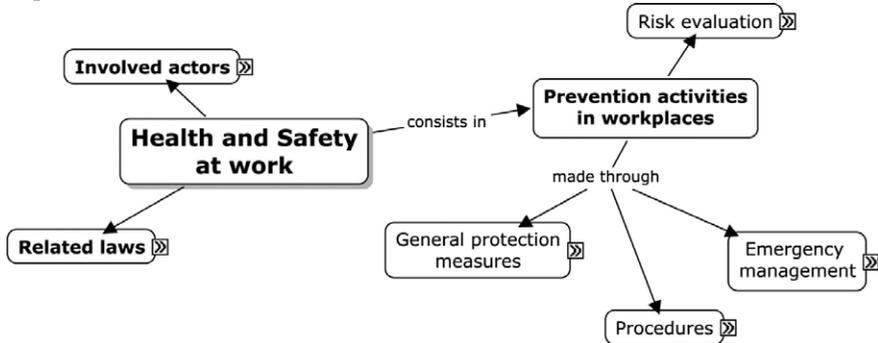


Fig. 1. Concept map with visualization of its main nodes

For each main node we identified the sub-nodes, in other words, for each content area we detected all its specific contents. According to the contents structure, in some areas of the map we needed to identify a higher number of levels (e.g., the section concerning the prevention activities, that is the part with more conceptual sub-nodes).

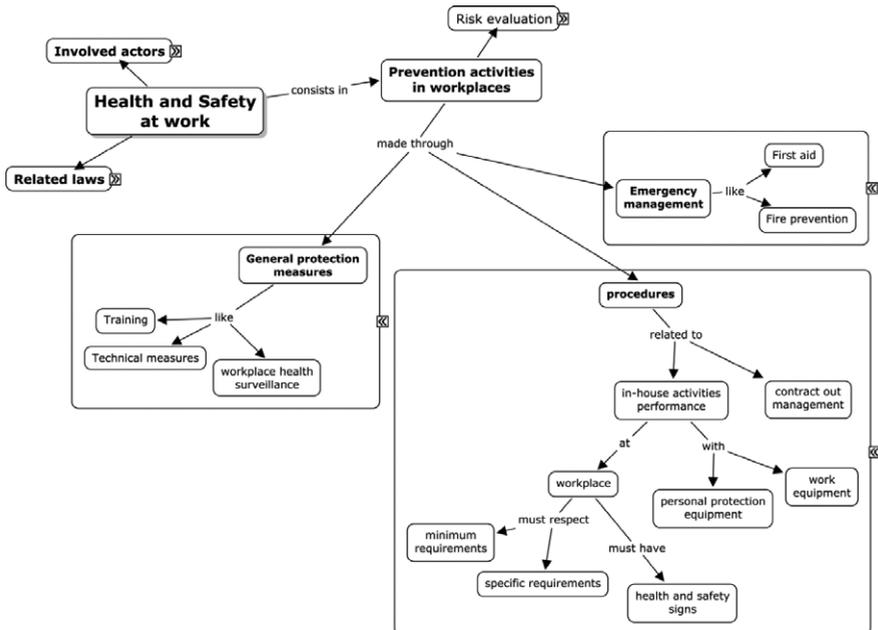
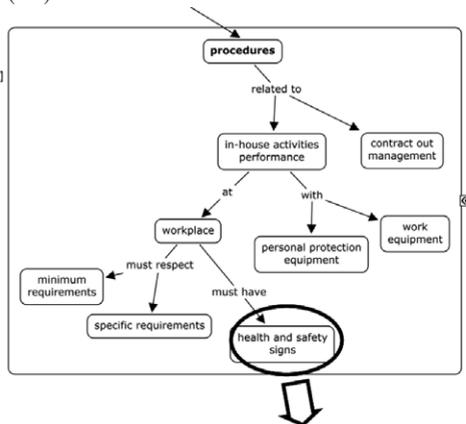


Fig. 2. Concept map with visualization of the sub-nodes related to the “Prevention activities in workplaces” node

4.3. From learning objectives to assessment system

After representing the whole reference system of knowledge on health and safety, we defined the hierarchic architecture of the related learning objectives. We identified the corresponding objectives for the first level nodes, and, then, for their sub-nodes as well. For each objective we defined the more relevant features, that is Complexity level (CL) and Semantic density (DS).



Learning objectives	Complexity level	Semantic density	Item	Training aids
Describe the main regulations for the proper use of health and safety signs in workplaces	3			
Describe the main health and safety signs' characteristics	2	20	Multiple choice	Multimedia presentation (negative case model)
Describe the duties related to the health and safety signs' use	2			
Describe the main aims of health and safety signs	2			
Describe the different health and safety signs' categories	2			
Distinguish the different kinds of health and safety signs and describe their specific features	3	25	Matching	Multimedia presentation video
Describe the specific features of prohibition signs	3			
Describe the specific features of hazard warning signs	3			
Describe the specific features of obligation signs	3			
Describe the specific features of fire action signs	3			
Describe the specific features of fire fighting equipment signs	3			
Describe the duties related to the health and safety signs' management	2	10	Multiple choice	Multimedia presentation Readings links
Define the employer's duties	2			
Describe the sanctions against the lawbreakers	1			

Fig. 3. Example of connection between a concept node and its related learning objectives

By identifying the learning objectives we completed the necessary frame of information to effectively design the assessment system and the structure of the training path.

The assessment system of our learning object is composed of the traditional tools for the right analysis of a learning path effectiveness, that is a diagnostic test and a final test. Both tests are isomorphic and measure the attainment of the same objectives, with the same difficulty level, in order to allow the calculation of the course effectiveness. The types of assessment items are various and they are selected according to the main features of the corresponding objectives. These same features condition also the selection of the learning activities and training aids to carry on during the path, as you can see in the following table.

Table 2. Example of correspondence between complexity level of learning objectives and types of assessment items and training aids

Complexity level	Items	Training aids
1st complexity level, with particular reference to theoretical knowledge, core technical issues and vocabulary	Multiple choice Fill in the blank Matching	Multimedia presentation Readings
2nd complexity level, with particular reference to complex theoretical concepts, information on procedures and instructions	Multiple choice Fill in the blank Matching Sequence	Multimedia presentation Readings
3rd complexity level, with particular reference to the application of knowledge to simple and standardized contexts	Case studies combined with structured test	Multimedia presentation (negative case model ⁵) Videos Readings Links

At this point, in order to complete the assessment system structure, we defined some test rules, such as the passing thresholds for each node, the administration modalities and the report frame structure. In particular, thinking about reporting activities, we chose to highlight three crucial facets: a) a general feedback about the student's grade of acquired knowledge on the contents of the course: a graphic representation of the concept map with nodes of different colours is showed to students at the end of each test; b) a general feedback about the study path, in other words, about the best sequence to attend the learning activities in order to attain the objectives where students showed difficulties; c) a detailed feedback on each node in order to suggest the best way to successfully manage the selected study activities.

4.4. Micro-design of contents and tests

Before micro-designing the contents, we defined the structure of the related "learning cards" and the "client side" reports. In particular, the learning cards were structured by adopting the same approach of the concept map: they highlight the most relevant thematic areas according to which to organize and relate the learning activities; furthermore they synthesize the content of the related material. In this way, the card becomes a sort of "introduction cover" of the different resources, where the students can find the most relevant information in order to understand if the card contains the information they are looking for.

Once defined the general learning system, the following phase involved the design and implementation of the training aids, in different formats.

At last, we designed the tests. In particular, to guarantee the objectivity of the tools for knowledge measurement, we designed three isomorphic tests for each learning objective. In this way, we succeeded in measuring the effectiveness of the whole learning path (by comparing the initial and final tests outcomes) and guaranteeing an assortment of different tests at each administration.

5. Operating rules of the model

Let us try to explain how interaction between the designed system and the users works.

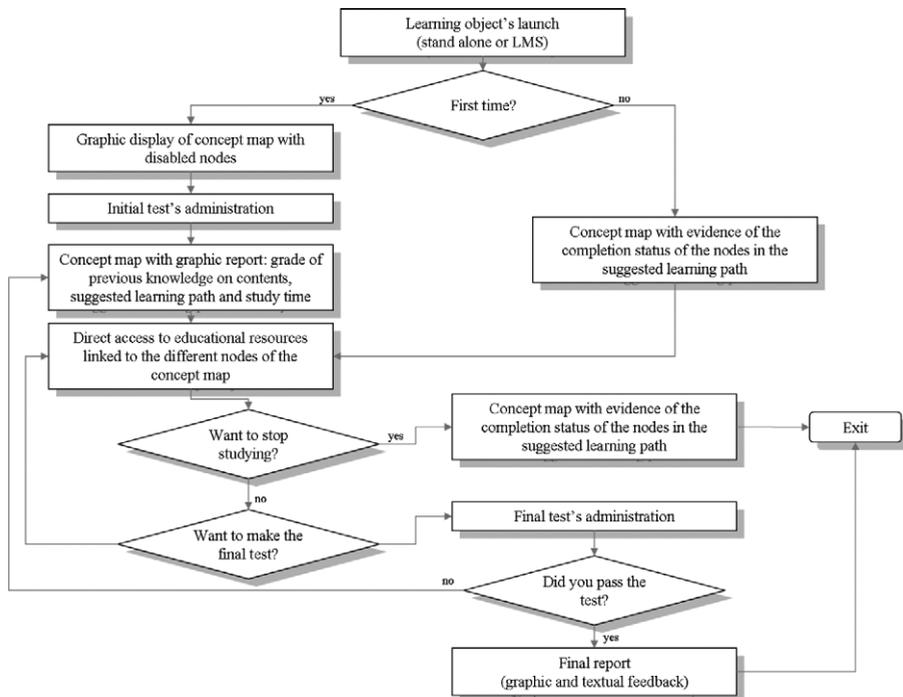


Fig. 2. The flow diagram describing interaction between system and student

5.1. The first interaction with the system

When students have access to the learning object for the first time, they visualize the concept map of the whole course. This map shows only the first-level nodes and synthetically gives the idea of the main content areas that will be dealt.

These nodes are disabled until the students do not make the initial test. When they push on the “start the test” button, the learning object launches the initial test. The administered items correspond to the objectives related to all the map nodes. The outcomes on each of them allow defining the student’s pre-entry knowledge. According to these results, the system records the percentage of contents knowledge and consequently selects the areas of study to be activated. For instance, if a student correctly answers the questions related to the “Related laws”, the corresponding node will be highlighted by a green check in the post-test report. The content resources related to this node will be available for the student, but they will be considered “not-compulsory” training aids, but useful resources for in-depth examination. On the other hand, if a student does not correctly answer the questions of the “Prevention

activities” node, in other terms, does not succeed in passing the selected threshold on the group of items related to the “Prevention activities”, such node will be an integral part of his/her training path. In this case, this node will be pointed out with a yellow or red check, depending on the amount of his/her incorrect answers.

5.2. The study path among the nodes of the map

Once the test is completed, the system shows the results directly on the concept map. The information that is visualized on it concerns: a) the grade of pre-acquired knowledge in relation to the map contents by means of three kinds of graphic representation: green, yellow or red checks in case of, respectively, good, average or inadequate knowledge; b) the recommended learning path by means of a numerical increasing signals showing the nodes to priorly study; c) the expected learning time¹⁰⁴ for the achievement of each section. In this way users can immediately understand which is prior for their training path. At this point, then, they can start following the recommended contents sequence or autonomously choose their own path.

5.3. The navigation through the contents

When users click on a node, the map shows its related sub-nodes. Each of them allows the access to the corresponding training aids. In particular, by clicking on the last level of the map, users can get to the “learning card” where they can find out: a) a text synthesis informing about the available training aids and a use guide; b) direct links to the different kinds of didactic materials (multimedia presentations, notes, job aids, videos, links, in-depth contents, etc.). Each consultation is marked out: the map shows which is the fruition level and when the core activities have been achieved. In this way students can stop and restart their learning activities anytime, without losing any information about their progress.

5.4. The final phase

When students achieve their path they can make the final test. This test is designed in order to check the attainment of the selected learning objectives and find out which parts still need to be deepened by the student. In fact, the system draws a set of isomorphic questions related to the objectives the student did not attain in his/her initial test. At the end of the test a report is delivered. According to the answers given by the student, two scenarios are possible. 1) The final score is positive, and then the student achieved his/her training path. At this point, a report with a graphic and textual representation of the results on the objectives is delivered. The course is achieved, but the student can still explore links/resources and consult the learning cards again. 2) The final score is negative, and then the student must plug his/her gap and retake the test. In particular, he/she can consult a map that graphically differentiates the acquired knowledge (active nodes) from the not acquired ones (disabled nodes). Then,

104 Fruition times are calculated according to the different features of learning objectives, like complexity level, semantic density, etc. For further details: Ronsivalle, G.B., Carta S., Metus, V., (2009).

the system suggests a customized path, updated after the final test results. At this point the student can choose a new path to follow and retake the final test when he/she is prepared.

By designing clusters of items in relation to each objective it is possible to draw different combination of items, and then administer different tests: in this way the knowledge measurement is rigorous and the learning effectiveness can be adequately verified.

6. Our model and McLuhan's Tetrad¹⁰⁵

The new model of learning object we described in the previous sections draws its inspiration from many concrete experiences and research projects aimed at promoting greater flexibility for the most obsolete tools of distance learning. In this way, the model tries to combine practical and contingent needs, sometimes also shown by the students themselves, with methodological needs, and, in general, with a new reading of e-learning evolution starting from McLuhan's thought.

In this sense, this model can be considered like a further step against the process of gradual obsolescence that constantly runs over the e-learning systems and tools still in use. In fact, according to us, the use of this new kind of learning object can contribute to improvements and innovations that can enhance the learning effectiveness in processes of both non-formal and informal learning.

Hence, our attention focuses on the reflections emerging from the theoretical framework of McLuhan's Tetrad in order to evaluate the capabilities of e-learning and, in particular, of a learning object structured on a concept map. As also Patkar (2009) underlined, thanks to McLuhan's tetrad we can better understand and analyse the effects that a tool, like ours, can produce on our students. The insertion of a concept map reinforces and amplifies the well-known capabilities of e-learning applications and represents, according to us, an evolutionary phenomenon in the local setting of distance learning.

Thanks to this kind of learning object, we can enhance students' previous knowledge on a specific subject, and, as a consequence, increase their involvement and motivation in the training programme by means of the selection of the contents they really need. In this way the new tool produces the unavoidable loss of value of the traditional courses, especially for two simple reasons: 1) traditional courses show nonfunctional and fixed learning paths that are always the same for all the students, independently from their specific learning needs, and, 2) they use a way of representing contents that can be considered obsolete and cryptic, if we think about the traditional textual index. Moreover, the adoption of this kind of learning object allows us to get back to a kind of customized learning that only teachers could, and still can, guarantee thanks to their direct and face-to-face relationship with students, on the basis of their real learning needs.

Furthermore, through the visual representation of content structures, we can retrieve and give a new value to a "flexible" and "live" interpretation of pieces of information, an interpretation that is more immediate and cross-cultural. In this sense, this methodological choice can also play a leading role in overcoming the problems that come out when we use a technology to extremes, and bring it to face its limitations, like, for example, the overload of information, the student's passive role or the fixed learning path.

105 McLuhan, M., McLuhan, E. (1988).

7. Application fields

On the basis of these premises, the model can be applied in all the contexts where the sharing of technical and specialized information and a flexible and dynamic access to contents for the management of critical situations are needed. In this sense, we refer to the training programmes to update the qualified workers involved in high-risk activities who are constantly asked to be prepared on data and models about new schemes of intervention, security systems and maintenance procedures.

Thanks to the interaction between the assessment module and the module for the targeted supply of contents, the system can also successfully answer the need to select people and certificate new recruits on extensive subject matters that require to reach a great number of objectives and cover many contents related to the reference company. In this way, one can guarantee an accurate check of the students grade of competence, both in relation to their previous knowledge on the contents, and according to their capability to adopt specific strategies in order to effectively look for information.

This model of learning object can also help university students' self study and revision, particularly when they have to delve into a topic with a lot of complex features, many cross-references and a high percentage of redundant information. If the "double" logic of navigation map and dynamic report was implemented on tablets and mobile phones, it could successfully facilitate the different styles of content examination that, when talking about young people, is more "compulsive" and "fragmentary". Because young students usually want to gain access to contents without any kind of spatial boundaries and with the sole aim of optimizing their study time in order to reach an adequate level of competence on the selected learning objectives.

Finally, if it was appropriately fed by a database of dynamic contents, it would be a very useful management tool for online life-long learning of freelances and employees in the financial business on the very fluid topics of the compulsory training programmes, with a special reference to rules and regulations on privacy, safety, anti money laundering, and to control measures of banks and insurance companies vigilance committees.

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New Technologies, New Environments: developing Personal Learning Environments in Secondary Education

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1. Introduction

The increasing access to information and the plethora of devices and interfaces available for users to connect through, and interact with, means that nowadays most learners are able to tap into resources and tools that only 15 years ago were accessible to just a very few of them. In fact, a common problem seems to be the overload of information and data, with the goal usually being *finding the right information* as opposed to just *finding the information*. Learners can also access the same information through a diversity of channels, depending on their personal preferences and how they choose to approach the learning process.

A substantial amount of research and efforts have been directed to the problem of tailoring contents to each individual preferences or style, but it is not clear whether this is still relevant given the sheer amount of data and information that is being generated and made readily available to users. Instead, it might make more sense to help learners create their own learning environments through which they can access, sort, filter, repurpose and create content, thus personalising the learning process.

The emergence of the so-called Web 2.0 has allowed consumers to turn into prosumers, simultaneously producing and consuming content, and making them active participants in the construction of knowledge. The concept of PLEs, Personal Learning Environments, emphasises the importance of users (and learners) as the guides of their own learning process. In this scenario, what is the role of teachers and educators?

Although there seems to be a widespread notion that the majority of the current generation of learners are familiar with computers and internet-based technologies and are capable of using Web 2.0 technologies for learning, there is no strong evidence that suggests that they are familiar with using Web 2.0 tools for formal learning. This generation, to which the labels Net Gens, Millennials or Digital Natives are usually applied, has indeed grown in a world where computers, new technologies and the Internet itself are part of their everyday lives; there is also evidence that learners do use a variety of Web 2.0 tools and applications. In the words of McLuhan himself (McLuhan, 1964):

“The young student today grows up in an electrically configured world. It is a world not of wheels but of circuits, not of fragments but of integral patterns. The student today lives mythically and in depth. At school, however, he encounters a situation organized by means of classified information. The subjects are unrelated. They are visually conceived in terms of a blueprint. The student

can find no possible means of involvement for himself, nor can he discover how the educational scene relates to the 'mythic' world of electronically processed data and experience that he takes for granted."

This points to several issues that are all too common in "traditional" approaches to education: isolated subjects, rigid learning paths dictated by the curriculum, homogeneity and a disconnect between what is taught at school and what students face in real life. Learners nowadays experience a dichotomy of sorts, as tools and devices that seem to be a constant part of their lives are excluded from the formal education process: videogames, mobile phones, netbooks, the Internet. The so-called new technologies, of which Web 2.0 is probably the tip of the iceberg, have pushed learners to develop new skills and competencies, yet there are very few initiatives toward the inclusion of these in the classroom.

Teachers should also be considered: how many of them are receiving the necessary training and guidance in implementing new technologies in their practice? Many countries are following the 1:1 trend, according to which students are provided with netbooks, and classrooms typically have an interactive whiteboard, projector and screen, wifi connection and in some cases digital texts are used in place of traditional textbooks. How can teachers turn these into "tools of the trade", seamlessly including these tools and devices in their teaching (and learning) process?

The *Hort Digital* project at Citilab-Cornellà, Spain, aims to close this digital divide, by helping secondary schools teachers in the development of Personal Learning Environments (PLE) based on Web 2.0 tools; by integrating these applications in the curriculum, and learning by doing, teachers in turn can guide their own students in creating their own PLEs, thus fostering the use of Web 2.0 applications in their everyday learning process, both inside and outside the classroom.

The use of Web 2.0 is dictated by their availability; as most of these applications are free, do not require payment or licences, and can be set up in a matter of minutes, students can open their own accounts and choose which tools are the most useful for them, thus personalising the learning process.

The project follows a Living Lab approach, as users are actively involved in all stages of the process; the course itself is designed as non-sequential modules, and thus can be easily changed or modified according to the needs and suggestions of participants.

During the 8-month course, that roughly follows an academic year, teachers develop a project proposal, focused on activities that can be carried out with their students and that take advantage of one or more tools or applications. During both face-to-face and one-to-one sessions, participants discover, propose and test new tools, brainstorming on how can they be applied in the classroom, and learning how to use them. This results, at the end of the year, in each one of them having a personal "toolbox" -the PLE-, to which they have been gradually adding (and in some cases, removing) applications and tools. A second course, which has emerged as a proposal from the teachers that participated in the pilot course, is focused on the development of activities that fulfill the curriculum objectives, and that can be enhanced by using technology. Their students have also been developing their own PLEs, following the example of their teachers, and the introduction of new tools by means of projects, activities and *e-tivities*.

This paper shows the evolution of the project and courses, the role of the participants in the design, and the results obtained during the first year, 2009-2010, in which 30 teachers

from 4 high schools participated. Some of the projects and activities will be discussed, showing examples of approaches that were successful, and outlining the problems and obstacles faced by teachers and students when implementing ICTs in the classroom.

2. The Hort Digital project: Personal Learning Environments, Living Lab and Web 2.0 in education

As mentioned before, the project and the courses follow a Living Lab approach; at the beginning of the pilot stage, there were many options open to the participants, as the structure of the courses was going to be decided and designed together with them. Although those in charge of the project had previous experience in the world of education and e-learning, a course of these characteristics had not been done before, taking into account such a diverse audience: teachers from different subjects and areas, a wide range of ages and background in the use of new technologies, which, in 90% of the cases did not go beyond the basic use of email and the browser to visit web pages.

The course was proposed as a meeting place for the exchange of experiences and ideas among the participants and the facilitators, whose professional profile and training is that of a learning technologist. It was understood that the facilitators would not dictate the content of the subjects the teachers were in charge of, for obvious reasons: it was assumed that the teachers have more of knowledge about the courses content than the facilitators; the diversity of the subjects, which range from physical education to religion, history, language and mathematics; and, above all, out of a sense of respect for their professionalism.

During the sessions, the facilitators would demonstrate and propose some digital tools that they considered suitable for education and these would be the starting point for discussion and analysis for possible application in the classroom; the main point would be the methodologies and strategies used to implement the use of these tools and applications in the classroom.

As they were introduced to digital tools, especially Web 2.0 sites such as blogs, wikis and closed social networks, the participants were practicing and understanding basic concepts and protocols related to the interactions in virtual spaces, management of email and passwords, and digital identity, to name just a few; and discussing key issues such as privacy and security in digital environments.

The first four months of the course, participants learned how to manage and use these basic tools and, above all, break barriers and lose their fear of computers and Internet communication which, in some cases, was one of the main obstacles for the adoption of ICTs in their practice.

From the fifth month on, it became evident that teachers began to realise the added value and advantages that ICTs had in their practice, as well as the possibilities they offer from the methodological point of view, and the new communication channels that are opened with their students and among the class: sharing academic content, collaborate in the creation of documents, searching for quality information and communicating in a more agile, dynamic and direct way.

The course is designed so it lasts approximately 8 months, the duration of an academic year; there were monthly face-to-face sessions, of two and a half hours, and in addition, activ-

ities and communication through virtual spaces -a closed social network is used as a hub, but a diversity of applications are used throughout the course- where the participants discuss and propose questions and issues, collaborate, and share information and even personal experiences that go beyond the contents of the course. It is important to note that the virtual space and the digital tools are just an extension of the course and sessions, and each participant decides how to use them in the way that they find the most convenient for the class.

Mid-way through the course, the participants were asked to think about a project that incorporated some ICT elements, and develop a methodology or classroom activity around it. The intention was not to focus solely on the digital tools, but use them as the means to achieve the learning objectives they have planned in their subjects.

From this point on, the facilitators served as mentors for each of the participants, and had individual meetings with them. The teachers would come up with ideas they wanted to do, objectives, and guidelines of the activities and projects they wished to develop, and at the same time learn how to use the tools and solve problems they might potentially find during their application in class.

The work in these tutorials was essential for their learning process. The group sessions were aimed at developing the knowledge and understanding of the tools, to share questions and answers with each other, and learn from their peers' experiences; but it is during the time that is shared face to face with the tutors that they develop the actual projects and activities, and discuss the results of testing them with their students, and the possibilities these tools offer in their particular cases.

It is at this point, that roughly occurs during the second of three trimesters in the academic year, that teachers understand and incorporate an essential aspect of their methodology: the possibility that their students become an active part in their own learning process. The teacher is responsible for making sure that the content that the student finds and publishes is relevant and of quality. But in order to achieve this, students need to be taught how to access the information, how to collaborate with others, the need to respect and focus on the achievement of objectives relating to the course content, process and filter the information, and generate knowledge that can be accessed and shared by peers.

Participants had first thought of virtual spaces as places to publish and share information, and establish contact with students - blogs, wikis, search engines, music and video players, closed social networks, visualisation tools -. Through the effective implementation and application in the classroom, they were able to see the reaction of students, which was for the most part very active and participatory. In this way the teachers realised the possibilities that these digital environments offer when the door is opened for the students to participate in them actively, posting on blogs and wikis, including their video selections related to the subject, or creating playlists with the music they like and that motivates them.

The teachers also realise that ICTs can help incorporate the students' opinions, experiences and tastes in the learning process; the students join and take part in the activities, share photos they have took themselves, the music they listen to, and create content from the information on the web, selecting and working to publish their own contributions to the virtual spaces that are related to the subject they are studying.

This helps promote social competence, as students interact both on an artistic and academic level. It also promotes analysis and opinion building among the students, as they get used to having a space where to express themselves, where their opinion and points of view are valued and encouraged by the group. It also facilitates the inclusion of students that in

the real-world environment are more reluctant to participate, either because of physical or language barriers – hearing or vision-impaired individuals, speech problems, foreign students in the process of learning the lingua franca of the class, etc. – or because of their personality - shyness, lack of confidence, difficulties in establishing links with the group. Having a (virtual) space that is always open, where they can relate to the other and where every participant has the opportunity to express themselves makes all the difference for some of them.

Students also learn to work with information on the Internet; learn to find valuable information and to discriminate, filter, select from which information they can create quality content for publication in the classroom environments created for that purpose.

1. Examples of new learning environments based on Learning and Knowledge Technologies.

1.1 The Industrial Technology wiki

The teacher who developed this activity worked with a small group of 11 students, at 1st year, high-school level, in the Industrial Technology subject. She wanted to create a wiki with a very simple structure: each student would be responsible for developing the content for describing a type of energy source (nuclear, wind, solar, etc.); these topics were randomly assigned, and the participants were in charge of doing the research and took responsibility for developing that section in the wiki. The teacher established a content structure, and each student would work on the contents for that source of energy: information, transportation, distribution, environmental impact and economics. There was a basic rule they had to observe throughout the activity: cut-and-paste was strictly forbidden. The work was carried out individually, but at the same students were collaborating in the generation of content, through the creation of a shared website, a wiki. It was a different way of focusing the content of the subject, a depart from the traditional classroom work where the teacher explains and the students take notes. The part of the activity that was done using the digital environment was much more active and engaging, according to the students themselves. In order to motivate the students and create a dynamic based on peer assessment, the teacher suggested that the students proposed exercises and questions as a way of guiding their peers through the contents they were in charge of. They would answer the questions and exercises, send them to the student responsible for that topic and then mail them to the teacher, who would be responsible for evaluating the process and outcome.

The assessment of the exercise by the teacher was very positive; the collaboration between students, evaluation of the published texts and the final result were all aspects that enhanced learning and the development of valuable skills: learning to learn, to seek information, collaborate and develop their own content. The students discovered that there were other sources besides Wikipedia. They realized that searching the Internet requires some knowledge, strategies and dedication. They practiced their reading and writing skills, something not always easy in the context of a technology-oriented class.

1.2. Tecnomac 1. Technology Tales

The teacher responsible for this activity wanted to include all the students from the same level: four groups of 1^o ESO (12 and 13 years), about 80 students in total. She wanted to work

on some concepts studied in the technology course, and reinforce them through written expression. In previous years it had been proposed that the students created texts, tales and fables about specific themes covered in other subjects. This time, she used the same approach, but introducing some collaborative aspects, oriented mainly to sharing the texts they produced with their peers, and promote participation and opinion.

She chose a closed social network that they called Tecnomac 1 and that allowed the participants to create participation forums to answer questions and doubts, and also integrated a blogging platform. During class, the teacher explained the exercise and the steps to be followed by the participants, and established the rules to be followed for the activity, in a specific section of the social network. She started a series of threads in the forum to discuss topics related to the activity, and it was established that any communication concerning the activity would be carried out through the Tecnomac 1 website. The aim of this exercise was to help students realise the differences in use and objectives in each of the new virtual spaces within the network: notes to inform and comment, the forum to discuss, ask and have a communication among all the participants, and the blog to publish the final text. Participants could vote up to five days before the deadline, when an award would be given to the most voted story. They also organized a public reading of the stories.

The use of a virtual environment facilitated the participants the reading of all the contributed texts: they were practicing reading, listening, learning, and even evaluation and reflection skills, as the second part of the exercise was to vote for their favorite texts. This approach would have not been feasible without the use of digital media and tools. The closest they had gotten to implementing this activity with “traditional” media was to have the teacher read a few of the contributions, or display them on panels or on the classroom. This option is probably the best one when it comes to the exhibiton of drawings, as all participants can see the drawings made by their peers and these can be exhibited for some time, decorating the classroom; however, when it comes to text the effect is not the same. It is not easy to read the contributions when they are posted on the walls. Publishing and reading in the blogs was a very positive experience, the students understood and got engaged in the dynamic, and the overall results were good. We believe that one of the key factors that led to this activity success was the fact that it was carried out through blogs and a virtual space. It was an important step for these students in the introduction of using and understanding more complex learning environments, such as the closed social network. We expect that in time they will become more familiar with these kind of tools, learn how to use all their potential and adapt them to their needs, thereby promoting the personalization of this type of virtual spaces.

1.3. Projectes Mediambientals

This teacher carried out an interesting project for the subject *Projectes Mediambientals* (Environmental Projects). This is an optional subject, offered as an alternative to Religion at 3rd ESO level (ages 14 and 15). The main objective of this course is for students to acquire skills and knowledge from practical experience, by managing projects that impact their environment and the school, in order to improve the quality of life of the members of the community.

One of the objectives of integrating ICTs in the subject was the publication of the actions that students took place at the institute, during the projects and activities. In a blog, the students are responsible for the publication of numerous entries on topics related to monitoring the development of certain tasks, such as waste management and the paper recycling center,

writing articles about issues related to renewable energies, the maintenance of an aquarium at the school, and the observation of flowers, plants and trees in the surroundings. This activity generates knowledge, as students publish and share their experiences, read those of their peers and even make contact with students from other institutions through comments on the blog. The teacher also created a closed social network, with the aim of organizing work teams, have a space for discussion, create a section for solving doubts and asking for help when needed, be aware of what the other students are doing, raise questions, post pictures. In addition, another outstanding objective of this network was to be a focal point and meeting place for people's awareness on environmental issues, so that students, regardless of who was participating in the project at any given semester, could still remain "connected" to each other by sharing these concerns, and could also integrate other individuals, inside and outside the school. The social network and blog were the main spaces for publishing and sharing photos, but the group also opened an account at Flickr to collect and provide access to all the photos taken throughout the course, so the graphic documentation of the activity was accessible to all participants, the school and anyone else that could be interested.

The teacher was very aware of the work done by students when doing the assessment and establishing the evaluation criteria for specific actions in the virtual environment such as the correct use of the blog, the proper use of e-mail -replying, attaching documents and files, being respectful and observing good practices-, to be responsible for the tasks that has been assigned to them (deadlines, use feedback to correct and improve tasks, homework...), appropriate use of the blog and the social network, and be respectful of their peers and their work. In this way, the teacher managed to fully integrate the knowledge of digital tools and their correct application to the subject they studied.

This is an innovative, and extremely interesting, view of how the new curricula should integrate both content and skills.

1.4. A network in French

In this French class, with 19 students at 3rd ESO level (15 years), the teacher proposed to use a closed social network. The proposal implied a need for communication and negotiation in the new virtual space. The teacher introduced this tool as an extension of the class and as a publishing platform for exercises of different types and with a variety of learning objectives.

At a technological level, the new platform supposed no problems for students, as they are accustomed to using social networks and interact within them; examples are Facebook and Tuenti. As a first step, the teacher started by negotiating the rules of behavior in this virtual space for academic purposes. Text documents, audio and video to be published should always be related to the class, the academic goals and following the communication dynamics that were established; and would never be unrelated to the subject or of a private nature. Respect should be shown for all participants and their opinions. All communication would take place in the language they were studying, French. This negotiation was conducted in this language and using the forum space on the network.

Moreover, the teacher made it clear that each of the activities to be carried out by the students would be fully explained in the network, as well as the points they would get for each action. In this way the teacher established the academic nature of the activity and motivated the students to participate. This was not a ludic virtual network in which the language happened to be the foreign language they were studying, but it was a workspace in which all activities had an evaluation and a grade associated to them.

The next proposed activity was to ask each student to post on their personal page on the website links to three songs in French, and to add the lyrics to one of them. Furthermore, they were asked to write a comment about the song, artist, composer and a personal opinion on it. After a few days, each student should discuss and comment the contribution of at least one of their classmates.

To work the past tense verb form, the teacher suggested that students posted two pictures of themselves on the network, one from a few years ago and a recent one. These photos would be used as the basis for a text in which each one of them would describe and analyze the changes that had undergone through the years.

To complete this exercise, it was necessary to carry out some work throughout several sessions prior to it, with the aim of preparing the grammatical base of the text. In a third exercise, each student would post a photo of a painting by Toulouse-Lautrec and write a description, thus practicing vocabulary and adjectives; this, of course, was also in French. The photos posted became a virtual mini-exhibition of 10 paintings by the artist, with reviews by all 19 students.

The teacher corrected the comments and the students were able to improve the texts using these corrections.

After these activities the teacher realised the wealth of information the class had collected through their personal pages, and that was accessible to all the students and the teacher. Two points stood out: first, the fact that students had taken the time and effort to personalise their personal pages using graphic elements; this suggested her an idea: another activity, in which student would vote the personal page they liked the most. Second, that participation was so high, that even those students that in class usually kept quiet and were shy, would participate and publish content, and openly express their opinion in the forum, through texts, drawings and photos.

The activities proposed in this closed social network are known to all those who have studied a second language: exercises with songs and lyrics, photos of before and after, describing pictures, etc. However, the environment of communication and exchange of documents (photos, videos, songs, reviews) established a new framework for the process of learning in which students brought and shared knowledge, and thus enriched their learning process.

From a pedagogical point of view the social network meant the perfect excuse to communicate in the language they were studying. It helped strengthen the content that was being studied in the classroom, and increased communicative competences by the mere act of participating in this virtual space.

Students were able to customize the exercises: publishing your favorite music and work, and their views on their peers'; describing the pictures they liked, the changes that they had gone through over the years, and so on. This customization increased motivation and helped strengthen relationships in the group, opened the way for expressing personal opinion, for debating, and for getting involved in the content of the course.

The publication of the texts, so they were available to everyone, and so the corrections were also public knowledge, benefits all students, who can improve their own work thanks to the collective knowledge. The exercises on Toulouse Lautrec's paintings, and on songs help them become more proficient in the culture of the language they study.

Finally, as already noted, it is important to consider the network as a tool that promotes the integration of students who for various reasons are withdrawn when participating in class.

1.5. A learning environment for poetry

This Catalan literature teacher was responsible for a group of 16 students at high school level (ages 15 and 16). Part of the program was devoted to poetry, and as a teacher and a lover of literature, she believes that the students best learn to understand and feel the poetry by reading aloud. It was also one of the parts of the programme that students found more difficult.

a. Poems of Marius Torres: this activity used video as format. For this activity, the teacher created a very simple, closed social network whose primary goal was to serve as a communication channel for this exercise, by using the forum and by posting videos to share with the other students. First, the teacher made a selection of videos of Marius Torres, which showed the poet reading his own poems, which were part of the content that should be explored in the course. The listening of these texts provided valuable references for students. Then each student would select a poem, read it, understand it, work on it and record their reading on video, and finally post it to the network. Previously, in class, they would rehearse the interpretation of the poem and then comment the text. The last step was a joint reading of tanka (Japanese poetry) during the graduation ceremony on the day of Sant Jordi, accompanied on piano by a student who played a piece by Ryuichi Sakamoto.

At first the students were reluctant to interpret the poems in class and make the video public. After the teacher encouraged the possibility to choose “their” poem, they started to get involved in the activity and overcame their fears. It was difficult to make an expressive and interpretative reading. The activity during class focused on the rehearsals: they did relaxation exercises, voice and body, imagery, diction, intonation. Students improved their understanding of the poems, which was one of the main objectives set by the teacher for this exercise.

The video recording was a challenge that students faced with a nice disposition and limited resources. Some of them made do with just a mobile phone camera, webcams on their computers, without using lots of effects, but they all completed the task and participated in the activity. Each student had the choice to read and interpret a poem published in their personal environment.

Technically, the recordings have room for improvement. But the exercise proved to be a rewarding experience for the students. They watched their videos repeatedly on the social network and sent many positive and encouraging comments to each other. The assessment of the teacher of the experience and the evaluation of the exercise (carried out by having conversations with her students) was very positive. She emphasises the engagement of the students in the activity, the increased motivation, the degree of understanding and identification achieved by reading and recording, and the interaction established among them through the dynamics of the activity.

2. Results and conclusions.

This is just a small sample of the projects generated during the first year of the project and courses. From these experiences, it is evident that some common themes emerge. A previous study, based on the PELICANS (Personal E-Learning In Communities And Networking Spaces) project (Torres Kompen et al, 2010) identified three main areas of impact, regarding the use of ICTs in education, following the PLE approach: organisation and management of content, promotion of social interactions, and learning and developing skills. In the course of these experiences the teachers not only develop their own Personal Learning Environments, but

also helped their students in creating their own. The experiences discussed earlier in this paper and the themes that emerged can be grouped within these three categories, as follows.

- Evidence of PLEs as organisation and management tools

The majority of these projects had a major input from the students themselves, who decided in many cases in which order to execute the steps of the activity, how to approach the tasks and how to organise in teams. There were also situations that required them to do some project management and decision-making. Students used the virtual tools and spaces to collaborate and share information, in many cases without direct intervention from the teacher.

- Evidence of strengthening social interactions

Most of the activities and projects developed required participants to create and manage profiles in several digital applications, and the participation in virtual groups and communities. There was also an emphasis in individual's voice, which motivated empowerment, and opened the way for sharing experiences and start new connections. The inclusion of students that up to that point did not participate actively in class, due to several circumstances, was another positive point that stemmed from the use of digital channels for communication.

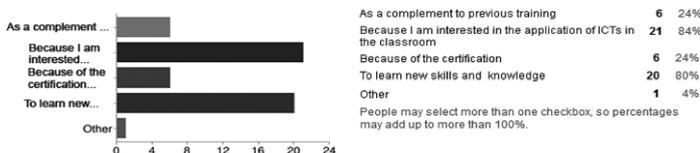
- Evidence of learning and developing skills

The students that participated showed an increase in motivation, participation, and engagement. The activities required practicing skills and competences that were not necessarily related in a direct way to the subject, but are valuable nonetheless: reading and writing, netiquette, and values such as respect for others' opinions. They also had to learn to differentiate and critique content depending on the sources, and learn how to find information (both sources and methods).

As part of the work done during this first experience of the Hort Digital project, we conducted surveys, both on participants and their students - actors and end users of this training - to learn their level of satisfaction and learning acquired, and to assess the effectiveness of the course and its contents. Below is a summary of the responses obtained from these surveys. The questionnaire applied was designed so that it covers the following points: motivation of participants, level satisfaction regarding the training received, the methodology used and the contents, evaluation of teachers, applicability of the contents during this school year and interest in continuing the training, among others. The total sample was 25 persons. Some of the results are shown below:

2.1. Teachers survey

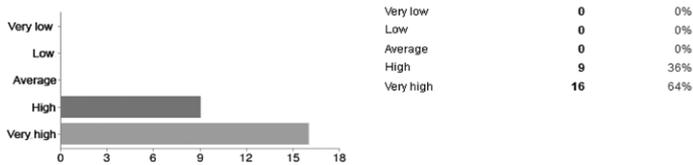
Question 1. Why did you enroll in this course?



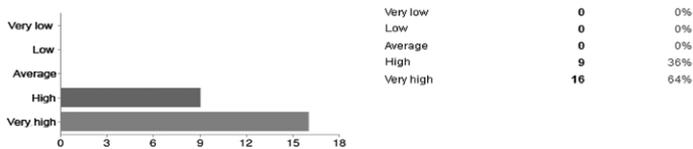
Question 2. What kind of possibilities did you see for applying ICTs in the classroom BEFORE taking this course?

*I only used the Internet to search for information and proposed exercises to the students that they could carry out in class with the help of computers
Access to information*

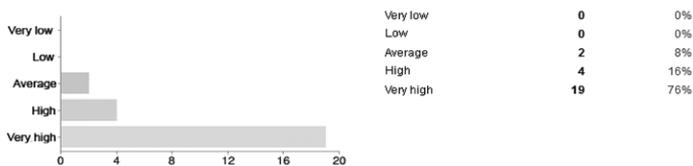
Question 3. What is your level of satisfaction regarding – satisfaction with the course:



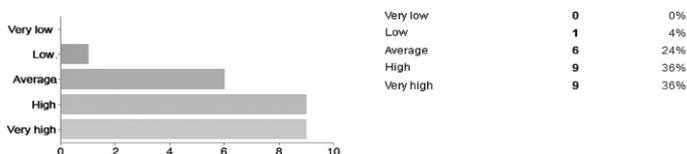
Question 4. What is your level of satisfaction regarding – satisfaction with the contents:



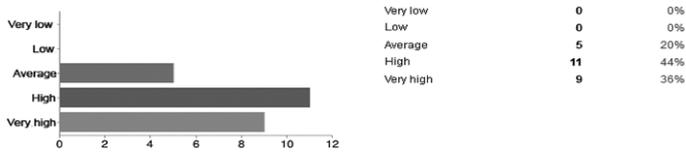
Question 5. What is your level of satisfaction regarding – satisfaction with the methodology:



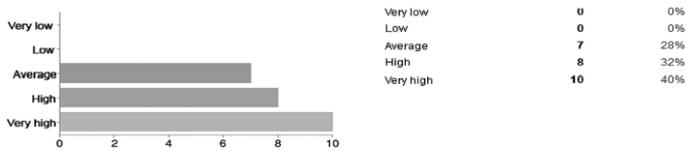
Question 6. How would you rate the contribution of the following activities to your learning process? – Development of a practical project.



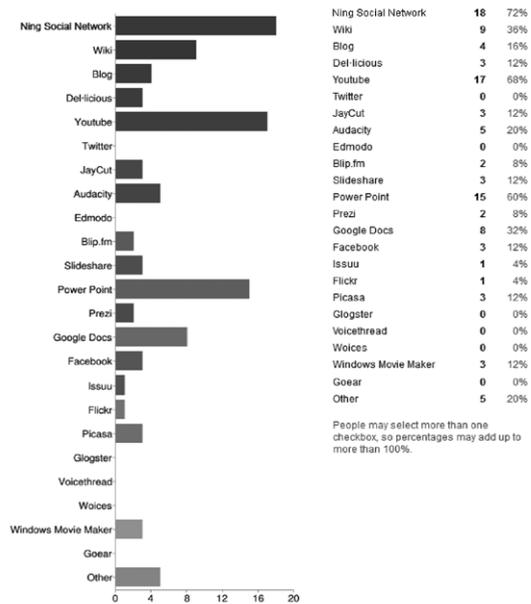
Question 7. How would you rate the contribution of the following activities to your learning process? – Personalised sessions and tutorials.



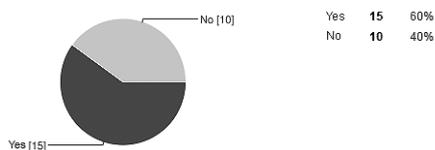
Question 8. How would you rate the contribution of the following activities to your learning process? –Use of a virtual space, Ning



Question 9. Select the tools and applications that you used with your students during this academic year



Question 10. Do you think you have a Personal Learning Environment, PLE?



Question 11. If your answer is “yes”, how does the PLE help you organise contents and resources, create new connections or strengthen the ones you already have, and learn new skills and abilities?

Until recently, my PLE was books and videos, luckily I have now begun to enrich it with digital tools. But I need to make better use of these ones, I still need to learn how to organise and manage them.

It has helped me innovate day after day, and learn. It is a lot of work, but it is worth it in the long run. Lectures are less and less the main component of the learning process, and thanks to the PLE concept, learning to learn is becoming more important

Question 12. Do you have plans to, or have you already helped your students creating their own PLEs?

After learning about PLEs, I think they should be considered as a tool for next year's students.

I would like to help them create their own PLEs

Question 13. Which potential do you see for the use of technology in the classroom after taking the Hort Digital course?

For now, it is another tool that I can use to work and communicate with my students. Since it is closer to them, it can facilitate communication and work, among them and with myself. It also allows for the joint creation of content, changes the way communication and information flows in the group.

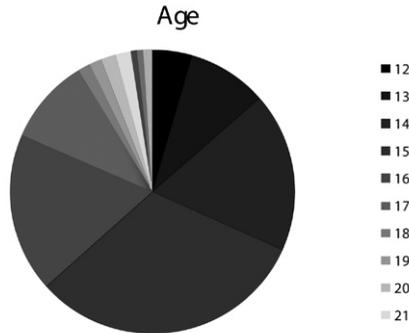
A lot, because I think it motivates students to participate, increases creativity and empowers students in their learning process.

These results show a high level of satisfaction with the course and with the creation of learning environments, whether they are shared or personal, physical or virtual. The teachers value the methodology and the knowledge and skills acquired. It also reflects the strong motivation and involvement by the participants. This is shown through the relatively high number of activities designed and developed using multiple ICT and web tools CAT, and the express desire of 100% of the respondents in continuing their training with a second level of the Hort Digital course.

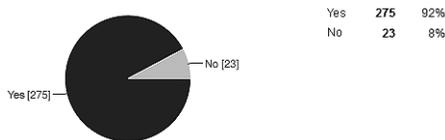
The following survey was conducted among the students who had been involved in activities designed by their teachers and that made use of ICT and web tools. The total sample was 296 surveys, from a variety of levels, both at high school and vocational training. Below are the most significant results and a brief analysis of some of the issues surveyed.

2.1. Students survey

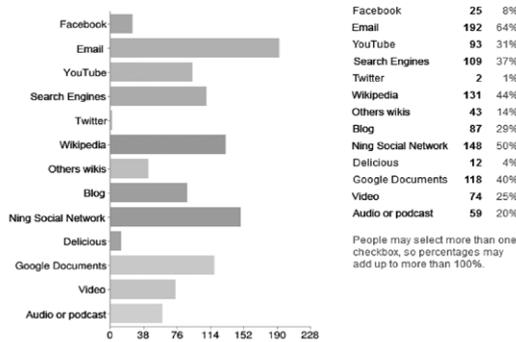
Question 1. Age



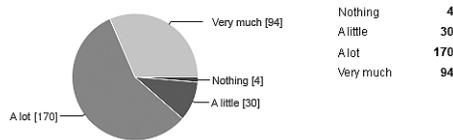
Question 2. Do you enjoy using these types of tools and applications in class?



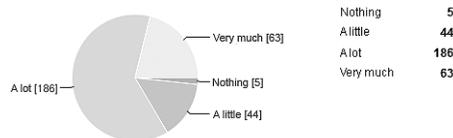
Question 3. Which of the following tools and applications have you used in the context of this class?



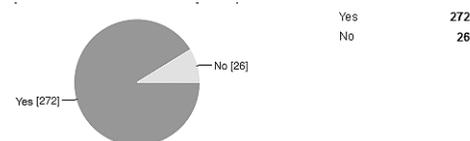
Question 4. Have you enjoyed working with these Web applications in this subject?



Question 5. How much have you learned about the content of this subject using these Web tools?



Question 6. Would you like that other teachers and subject implemented the use of these tools?



Question 7. What is your opinion about the use of these web tools and applications in this subject, and what comments and suggestions would you propose?

I think it is a good tool for using and working in class, because it makes the subject more dynamic, and we are not only working with books.

I have enjoyed using these tools because it is a different way of studying, and breaks the monotony. I would like to keep usinn this approach.

I think it is important, since these tools are more and more common in our lives, and it is necessary to keep up with changes.

From these results, a large number of students, based on their experience last year, believes in using technology as tools for learning and would like to incorporate this way of working in other subjects; more than 75% of them have experienced learning using technological support and note that this promotes new dynamics in the classroom, and increased motivation.

To see the full results of both surveys and more information about the project, you can see the project wiki at : <http://projectehortdigital.wikispaces.com/Resultats> and the project website: <http://hortdigital.net> .

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It Takes a Global Village: Distributed Cognition and the Digital-Age Classroom

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1. Introduction

This paper analyses some of the challenges and opportunities of teaching “digital natives” in connected classrooms, by applying McLuhan’s “global village” and “collective unconscious” metaphors to computer-mediated communication and network technologies in order to understand changes brought to higher education by computers and digital networks. My argument will focus on the restructuring of communication and information flows, from the standpoint of the effects of information availability upon the nature of work and roles in the higher education classroom. Information and communication technologies (ICT) can be viewed as elements of a cognitive system that comprises the classroom and its material, normative and human elements.

I have undertaken a critical review of arguments for and against the notion of “digital natives” and, following its standard definition as a generational group shaped by specific technologies and practices, established a link to McLuhan’s work on the sensory properties of communication technologies and their influence upon culture and society. His concepts of “global village” and “collective unconscious” were analysed against the backdrop of the new network technologies, establishing a theoretical framework for further research into the dynamic relations between higher education and ICT.

2 Distributed Cognition

A distributed cognition system, i.e., a set of elements that enable the creation, transfer and processing of information and knowledge, can include various phenomenological and ontological elements, arranged in a more or less flexible manner. ICT simplify the creation of these systems. However, Internet-enabled computers can be seen as threats to the constitutive power distribution in the classroom, with its classic asymmetry between teacher and student.

The very notion of expository teaching is challenged by easy access to information. Teaching became akin to an extended, branching conversation between teacher, students and vast online resources, close at hand but unstructured. Something which at first seems to undermine teachers’ role (hence the “moral panic” to which Bennett et al. allude [1, p. 182]) also entails the possibility of using new tools to promote dynamic, innovative information and knowledge evaluation skills and methodologies.

A Definition. Distributed cognition (DC) can be broadly defined as an anthropological and psychological theory of information processing. It recognises the hybrid, social and interactive character of mental processes. Cognition appears as a communicational, collaborative and dialogic process, the discursive character of which is embedded into concrete interactions with resources outside the individual's brain. In this account, such practices result in a cognitive state which differs from the individual's state, either because of the presence of multiple agents or because the latter initiate meaningful symbolic exchanges with the environment, thus adding to the information flow.

Cognition as a result of internal features of an entity with mental states (usually a human being) comes from a dualistic (cartesian) conception of mind which has no place for inanimate objects and places thought exclusively inside the subject's head. As origin of meaning, the subject is also the locus of cognition and knowledge in intellectual functions. However, adopting a less narrow view has the advantage of transcending the limits of an individual's body when studying symbolic exchanges, thereby overcoming the cartesian view of a disembodied monadic mind acting upon passive objects.

Distributed cognition reduces epistemological divisions between interior and exterior and emphasises communication flows through the media used by individuals and/ or groups [2, pp.1-2]. This broadened phenomenology includes individuals, artefacts and representations, whose functions are traceable but not necessarily fixed. Thus, as a theoretical and methodological approach, DC cannot be separated from material technological phenomena. An example of a DC solution linked to cultural and social change can be found in the diffusion of collaborative cognitive technologies [3, p. 56].

Such topology gives special import to the phenomenological continuity between internal and external representations. By displacing representations in and out of individuals and combining them into several material forms, cognitive systems remain unstable, but creative. Their socially hybrid character is particularly noticeable in the use of technologies with cognitive-mimetic properties, such as computers, mobile phones and communication networks.

Distributed Cognition Systems. In his pioneering works, Edwin Hutchins [4], [5] abandoned the monadic approach and adopted as an unit of analysis the set of elements used to perform a given task. Despite distinguishing between individuals and artefacts, Hutchins integrates them into a representational system for a more minute description of the circulation and processing of information. The author shows how this distribution function makes problem resolution more efficient, not through the description of human behaviour, but of the overall performance of the (representational) system of which the agent is a part – focusing on the material means used in representation processing [4, p. 266].

Distributed cognition systems are characterized by the variety of informational exchanges and by the adjustment of the distribution and access of information to the needs of the system as a whole [2, pp. 3-4]. According to J. Sutton, the resources of a distributed system can take many forms, emphasizing the “transactional” and “collaborative” nature of cognition: a) artefacts, cultural tools and systems of external symbols (“material culture”); b) natural resources (used to establish routines and procedures. Example: natural landmarks); c) Interpersonal and social structure (such as sharing memories in social groups); d) Incorporated abilities and skills and, e) internalized cognitive artefacts (e.g., mnemonics) [6, p. 47 ff.].¹⁰⁶

3. “Invasion” of the “Digital Natives”

The use of ICT in the classroom is a major challenge to dominant notions of digital literacy. Decade-long debates about “digital natives” [1], [8-12] suggest that it may be moot to discuss whether they can be expected to abstain from using computers and smart phones to access information in the classroom. Instead, some approaches deem more useful to question the true extent of their digital literacy [13-16], a task which might lead to new forms of classroom engagement conducive to good practices of digital learning. Usually limited to access skills, digital gaps should be construed primarily as differences in the appropriation of information, and addressed by an adequate concept of information literacy.

“Net-Generation” and “Digital Natives”. ICT have entered all aspects of social and economic life and, as Sonia Livingstone observes, “the social contexts of media use are inevitably also the everyday contexts within which we live out our social relationships and construct our social identities.” [17, p. 211]. It is to be expected that people who use digital media intensively in their social lives will apply their communication practices in all other contexts.

As Don Tapscott noted, “[h]istorically, the field of education has been oriented toward models of learning which focus on instruction – what we can call *broadcast learning*” [18, p. 129, original emphasis], whereas today “[t]he new media enable – and the N-Gen needs for learning demand – a shift from broadcast learning to what I call *Interactive Learning*” [18, p. 139]. Digital technologies have made their way into the classroom.

Dan Tapscott referred to those young technophiles as “the Net generation”, or N-Gen: “(...) the generation of children who, in 1999, will be between the ages of two and twenty-two, not just those who are active on the Internet” [18, p. 3], on the grounds that this generation was the first to be completely comfortable with new information technologies. By using them in everyday tasks, they have created a form of “generational learning” [18, p. 9], whereby its members learn together, interacting online with each other and in groups. No aspect of learning was left untouched in Tapscott’s account, but the crux of the change remained quite clear: learning became decentralized because of new cognitive demands [18, pp. 43-9]. The meaning of learning was changed by the sheer availability of information and ease of access. The networked character of digital media added a social, interactive level to learning and work. Finally, this decentralization occurred as reaction, i.e., demographic changes in the student population force institutions to answer a demand (either real or perceived) for more interactive and technologically mediated teaching and learning methods.

Marc Prensky also pointed out this generational difference, arguing that, sooner or later, educational practices must change to accommodate the potential of new technologies. In both parts of his two-part controversial article titled “Digital Natives, Digital Immigrants” [8], [9], Prensky argued that the technological practices of the generation of students then reaching higher education systems differed radically from the lecturers who were supposed to teach them. He deems the latter “digital immigrants” who have not acquired habits like turning to the Internet as a primary source of information. A further challenge would reside in fostering the ability to explore the technological predisposition of the “digital natives” and its cognitive effects to use those the new tools with adequately structured curricula – i.e. by embracing ‘gamification’ and ‘edutainment’ [9, p. 5-6].

“Moral Panic” and Uses of ICT. Descriptions of generational gaps usually follow a “simple model of causality” [19, p. 349] based on anecdotal evidence and over-generalising assumptions, leading to a “one-way determinism, forcing institutions and teachers to change” [19, p. 345]. Bennett et al. did not hesitate referring to it as “an academic form of moral panic” [1, p. 782] in the guise of contradictory discourses about age-determinism as well as misunderstandings of the cognitive effects of ICT.¹⁰⁷ As institutions adapt themselves to the use of digital media both in and out of classrooms, a need arises for new methodologies that harness their interactive affordances for instructional purposes. However, aspiring to keep an idealized “Net generation” engaged entails the risk of overlooking differences within that age group [11], [19], [22].

Recent research has called into question the usefulness of Prensky’s overarching assumptions and especially the generational divide. In 2008, an Australian study conducted among higher education entry-level students undermined Prensky’s construct by showing that, in fact, practices and technologies vary considerably even within the same age group, adding to this anti-generational critique a more sophisticated idea of technological and informational literacy¹⁰⁸: “Clearly we cannot assume that being a member of the ‘Net Generation’ is synonymous with knowing how to employ technology based tools strategically to optimise learning experiences in university settings” [26, pp. 117-8]. After access to ICT has been assured, an information literacy issue arises because of asymmetries in skills and usages, creating a second digital divide [13-16], [22].

According to Kennedy et. al., adapting “living technologies” into “learning technologies” demands questioning “whether the students’ everyday skills with emerging technologies will correspond to skills associated with beneficial technology based learning” [26, p. 119]. Trying to determine exactly who is a “digital native”¹⁰⁹, Helsper & Eynon [27] have tested the variables related to age, experience and breadth of use of the Internet, concluding that there is not enough evidence of a generational gap. In fact, age-deterministic assumptions are contradicted by the presence and use of ICT in family households, supporting the idea of a continuum of use where generations converge [27, pp. 515-8].

107 Prensky’s claim that digital natives’ brains are “almost certainly physiologically different” [9, p. 4] from analogical generations’ (also present in [18] and [20]) fails to establish an exclusive causal connection with the use of ICT. Robert Epstein points out that behavioural changes in adolescents (in this case, differences in learning), can be traced to differences in brain development caused by a variety of environmental factors such as “culture, nutrition and even the teen’s own behavior” [21, p. 58], where it is possible to include the use of technology without necessarily deeming it the sole cause. It would be incorrect to circumscribe those changes to an age cohort, since brain development takes place in a life-long continuum.

108 Eisenberg [23] and Koltay [24], [25] gathered several critical concepts of literacy, variously adapted to specific contexts. Information literacy, in particular, “(...) emphasises the need for careful retrieval and selection of information (...). Information literacy education emphasises critical thinking, meta-cognitive and procedural knowledge used to locate information in specific domains, fields and contexts” [25, p. 215].

109 A digital native is defined as “(...) someone who multi-tasks, has access to a range of new technologies, is confident in their use of technologies, uses the Internet as a first port of call for information and (...) uses the Internet for learning as well as other activities” [27, p. 506].

4. McLuhan's heritage¹¹⁰

McLuhan's own idea of a re-tribalization of society through electronic technologies is useful to understand Tapscott's "generational learning" or Prensky's "generational neuroplasticity". Given McLuhan historicism and focus on the conditioning of culture by technology, it seems clear that he would probably support the "natives vs. immigrants" view. The general trend of increased interactivity and global reach of cultural artefacts has only accelerated the remaking of the world of McLuhan's "typographic man" [29]. The crucial differences of digital media may be pinpointed to an expansion and convergence of the cognitive horizon of consumers and producers towards a more organic multiplicity of media.

In the "Global Village"? McLuhan's relevance as a critic and visionary cannot be overstated. His view on oral vs. alphabetized cultures was clearly directed at the printing press in *The Gutenberg Galaxy*, and was further refined as he established the dichotomy of hot and cool media and cultures.¹¹¹ By opposing the disciplinary character of typography to the orally rich (hot) tribal cultures, the Canadian professor critiqued the whole modern project as the suppression of the orally structured community. He interpreted the linearisation of expression as a function of the material conditions of typography – the making of modern western subjectivity through the mechanization of the alphabetical order, as opposed to the predominantly oral culture of the tribal man. On the other hand, linearisation can also be seen as the condition *sine qua non* of modern science, giving rise to the electronic technologies McLuhan saw as allowing the re-emergence of oral culture.

Socially and individually, this would entail a new cognitive disposition. The re-tribalizing effect of the transition back to acoustic space of electronic communications was based on the uniting effects of human voice and interaction, potentially giving rise to a global society, this time as a continuum of connections and communication. The prevalence of the "global village" metaphor notwithstanding, this vision of unity has not come to full fruition. Even though communications have become instantaneous and cheap, the union of the globe is an economic reality more than anything else. Electronic communications (new media and, in a wider sense, information and communication technologies) span the globe, but have also created isolated groups (tribes) of networked individuals,¹¹² while leaving behind portions of the globe. Despite the seminal character of his writings, contemporary re-appropriations of McLuhan's ideas are considered to misconceive the current reality of technology by insisting on ignoring the political economy of technology in favour of a deterministic stance [33], [32].

However, McLuhan's "global village" may be seen as present in the connected classroom. Network technologies allow the retrieval of data from sources far from specific social settings, such as the normative contexts of uses of technology allowed by local regulations. The computers students use in class go much further than the traditional handwritten notebook, both

110 See [28] for a review of the main sources and influences of McLuhan's thought.

111 Notoriously difficult as it is to classify meta-media such as computers or the Internet as hot or cool [30, p. 78], multimedia resources and applications may be considered re-mediated versions of old media [31], now converging into a single language and onto a single screen.

112 Proulx highlighted this as a sign of the utopian character of the idea of a "global village" [32, p. 140].

as bibliographic tools and as registering media for classroom dialogue or streams of thought.

Collective Unconscious. The challenge of new technologies in the classroom seems to lie less in the contents of media than in the specific nature of the mixed functions of multimedia technology. Classroom interaction now occurs against a backdrop of pervasive networking which may appear daunting in its immensity and plasticity.

McLuhan's stance regarding the re-establishment of a technological form of "collective unconscious" [34, p. 80] is set out in his book *Understanding Media*. Not unlike Jung's, McLuhan's notion of collective unconscious rests on non-verbal representation. It is ultimately recognizable as an expression of the archetypical *logos*.¹¹³ The Canadian author construed media as progressively abstract ways of knowing and communicating, in a narrative not unlike the myth of the Tower of Babel. Primordial, non-mediated communication allowed human beings to establish transcendent, direct and non-instrumental links with Nature as well as one another. The disruption of non-verbal communication is attributed to language itself, understood as a distancing mediation vis-a-vis the world. McLuhan expected global communications to recreate a pre-discursive unified field of communication [34, p. 80 ff.].

Communication technologies add layers of mediation, thus aggravating the individual's alienation from McLuhan's symbolic commonality and exposing frailties in his hopes for global communications. D. Carveth's appalled assessment of McLuhan's concept of "collective unconscious" rests on the view that "it is through symbolization that we become human *subjects*" [36, p. 45, original emphasis]. It is language that allows the individual to express difference, thereby creating the possibility of knowledge (of something other than the individual, i.e., the Object) and interpersonal communication without constantly regressing into solipsism.

Digital networks' role as contemporary collective unconscious is a technological after-effect of an historical attempt to preserve flows of communication, re-purposed as a multimedia, multi-sensorial general library of experience and knowledge. Digital technologies allowed the creation of a 'networked collective unconscious' consisting of numerous, non-linear, dynamic distributed archives.¹¹⁴ It is unconscious insofar as it is not immediately accessible, requiring intentional action to access through a plethora of devices mediating its conversion to individual conscience. Digital contents, quickly reproducible and transmitted, are constantly created and recreated. On the other hand, social dynamics like interest groups (political, social, cultural, linguistic, etc.) reconfigure themselves and their output incessantly. From the computer screen emerge the ebb and flow of these twin phenomena, finding their way into all aspects of everyday life.

The limits of mcluhanism. As Bolter and Grusin [31] have tried to show, new media "re-mediate" previous media, that is, they multiply them and try to erase their signs by making their successive iterations closer to our "natural senses". In that process, new media often

113 For a study of the importance of the *logos* doctrine and the psychoanalytical theories of Freud and Jung in McLuhan's work, especially his notion of collective unconscious, see [35].

114 The notion of cognisphere can be considered adjacent to this 'networked collective unconscious': "Expanded to include not only the Internet but also networked and programmable systems that feed into it, including wired and wireless data flows across the electromagnetic spectrum, the *cognisphere* gives a name and shape to the *globally interconnected cognitive systems in which humans are increasingly embedded*. As the name implies, humans are not the only actors within this system; machine cognizers are crucial players as well" [37, p. 161, emphasis added].

retain their predecessor's taxonomy ("Internet radio", "electronic paper") and practices, while also claiming to improve upon them.¹¹⁵ New media technologies do not replace the literary practices of pre-Internet schooling. The shift occurs mainly in the speed and availability of information: networks disseminate and simplify practices of creation and sharing of new content, while also "recycling" the content of old media. This remedial perspective suggests that a new medium adopts and expands its predecessor; in the case of the Internet, according to Levinson, it is the "remedial medium of remedial media" [38, p. 179], where all media converge and new re-mediation occurs.

The written word has not merely retained its central place; it has proven its plasticity in the transition to a non-linear model of information acquisition and appropriation. In this sense, the abstract printed character has found new parallels in the digital world, where composition and de-linearisation are crucial. As Paul Levinson notes [38, p. 164 ff.], the discontinuity between support and expression is taken further by binary code, which is a vehicle for storage and transmission that reduces any complex message to two simple states (0 and 1), establishing what may be called a multimedia phenomenology. In fact, if McLuhan's participatory tactile-acoustic space is extended to global proportions by digital media – in the process started with electric mass media –, it is due in part to the absorption of the written word as just one part of the larger sensory breadth of the multimedia.

However, it is awkward to group electronic media under the same acoustic typology on the grounds that telephone, radio and television convey the word as sound. Originally, McLuhan seems to have placed in the technological structure the role of the nervous system in the decoding and completion of the "message" of a cool medium such as television, which might undermine his theoretical distinction of hot and cool media. An acoustic-rich medium requires no less cognitive processing than a visual one, especially as sophisticated techniques tend to overlap several informational codes to capture the audience's attention. Electronic media also have disciplinary effects, while print media cannot be said to lack interpretive, creative and collaborative possibilities. By stressing the alienating effect of print while extolling the renewal of the communitarian effects of the electric media which changed "the patterns of human perception" [29, p. 265], 'mcluhanism' underestimates the pluralistic and creative (mythic) character of the written word, even while disclosing its effect upon the perception space of modern man.

Perhaps it is McLuhan's extreme position on this particular problem that makes studying of network and multimedia technologies, in light of his theories and 'probing' concepts, somewhat anachronistic. As C. Horrocks pointed out, the Canadian author did not claim any predictive value for his ideas, which is why they should be re-evaluated in a more critical light [33, pp. 324-5]. McLuhan's focus on the 'sensorium' and the multiple combinations of senses of visual and acoustic, hot and cool media, breaks down as the "collective unconscious" produced by the aggregate multimedia expression replaces the single utopian community with a fast, multisensorial online public space, which is more organic and less transparent in its hypermediation.¹¹⁶

115 "Each new medium is justified because it fills a lack or repairs a fault in its predecessor, because it fulfils the unkept promise of an older medium. (...) The rhetoric of remediation favors immediacy and transparency, even though as the medium matures it offer new opportunities for hypermediacy" [31, p. 60]. Even though this point of view is indebted to McLuhan's work, the authors did not establish the same radical historicist distinction between media technologies.

116 P. Levinson recognises that he had to "(...) stand McLuhan on his head" [38, p. 46], thus acknowledging the difficulty of applying the Canadian's notion of "acoustic space" to the abstract, modular Web.

5. Communication Flows in the Connected Classroom

“Kids, the worry goes, are channel-surfing through their education, and their brains are being rewired in the process” [20, p. 240]. This sentence sums up the gist of the debates about teaching “digital natives” and their ideological roots in the purported breakdown of concepts of literacy and education which gravitate around the twin legitimacies of the book and the teacher. While it is true that digital technologies have made their way into education systems, the challenge might not dwell in its presence (access), but in the way it has evolved into other kinds of inequalities. An example of such inequalities – moreover, one in which formal education may play a crucial, albeit not exclusive, part – is the “education-based knowledge gap” linked to the informational use of the Internet for political knowledge acquisition [22].

The teacher’s voice is but one of many other voices, most of which reach the classroom through the Internet. Instead of books and linear expression, digital networks bring interactive, hypermedia-type tools into the mix. Even though the variety of sources of information is too large to measure, it is quite possible for those voices to be just as authoritative as the teacher. Teachers are challenged to draw on globally available resources and make them available to the pupils in a meaningful way. Or, more to the point, in order to confront the sheer volume of information available online, the teacher must handle its availability as a challenge to the student’s own analytical (the ability to find and evaluate sources and contents) and synthetic (the ability to sort and make sense of information) skills.

The availability of information and the multiple voices that shape communication networks are challenging because they do not replicate hierarchical role distributions. The original purpose of computer networks was to ensure efficient and sustained communication between any two given points without relying on single nodes. Their non-hierarchical character stemmed from a deliberate effort to reshape classical forms of control. In this decentralized network, learning institutions find themselves with a new but pivotal part to play as one among many sources of information and knowledge, amidst policy changes, technological hype, and permanent scrutiny.

The Restructuring of Information Flows. The distributed cognition framework highlights the fact that human individuals are not the only elements of a cognitive system. It takes an optimistic, evolutionary view of human culture as the “recruiting”, “arranging” and “refashioning” [39, p. 107] of physical and human elements into cognitive systems. The addition of physical objects and artefacts to the system gives relevance to the need of developing appropriate skills for activity purposes.

A classroom can get connected in several ways: for example, installing or allowing Internet access and integrating them with hardware and software like interactive boards, virtual learning environments (VLE) and learning management systems (LMS). Or, more passively, by allowing students and teacher freedom to access the Web as they please. Conversely, it is easy to find counterexamples in restrictive practices of institutions that follow less progressive agendas and/ or maintain a less optimistic view of the effects of permanent Internet access. On this matter, and because of the cacophonous effect of catchphrases even on the definition of educational, pedagogical and communicational policies, it is urgent to refuse, as Bayne and Ross, “(...) the structural de-privileging of the teacher, a marketised vision of higher education, a racialised and divisive understanding of student/teacher relationships and an associated series of metaphors which ‘write out’ the possibility of learner and teacher agency in the

face of technological change" [40, "In Conclusion"], reasserting the commonness of context and technological tooling for students and teachers.

Younger and older generations share a technological context and information literacy challenges. However, that presence may obscure literacy differences, which can only be bridged by questioning asymmetric uses of technology. Helsper and Eynon highlight the multiple practices and uses of several different media to suggest that formal and informal education have important roles in equalizing differences by trying to harness digital tools by combining access to technology with critical skills [27, pp. 516-18], dynamically applied to living and learning situations mediated by the presence of ICT. This is also supported by Bennett and Maton in a review of the discussion [41] in which they argue that "the familiar issues of equity and student training still need to be considered" and that "[w]e also need to move beyond a simple dichotomy between 'everyday' and 'education'" [41, pp.325-6]. This dichotomy (a) obscures the fact that most resources – the Internet being the obvious example – are cross-contextual and their uses manifold, and, (b) underestimates the importance of sustained life-long formal and informal learning.

Classrooms are predominantly acoustic media environments, even though the written word is the essence of institutional scholarship. The physical spaces of learning are designed to accommodate both practices, but authority asymmetries are revealed in the modes of communication. The social, material and cognitive structure is clear and presented as the optimum solution for the transmission of information and knowledge.

Network technologies disrupt this system by introducing dynamic, unstable media. The multiplicity of voices is apparent in multiple-pathway situations such as real-time fact checking, classroom activities, group activities or mere distraction. As Mayer et al. have shown, educational practices can explore these affordances and be reconfigured according to specific teaching priorities which exploit the system's cognitive properties – allowing a methodologically sound analysis of its effects [42, p. 49 ff.]. The teacher is not a gatekeeper, but one of the members of an epistemic network, with the responsibility of ensuring, for example, the optimal use of ICT resources. In fact, it has been argued that experience in use can lead to higher levels of achievement only until a certain point, where that relation is inverted and ICT use begets poorer results [43]. This non-linear correlation supports a moderate view of teachers' roles. The connected classroom has the potential to acquire a new significance as the locus of interpretive processing of information, knowledge and, generally, resources made available by the networked collective unconscious.

Distributed Cognition and the Politics of Educational Interactive Communication. While there are varying degrees of digital literacy and several technological gaps to consider, it is true that ICT have come to the classrooms to stay. The debunking of the concept of "digital native" has left intact the value of the use of digital technologies in the classroom. The uses, practices and activities which tie teachers and students together can be subjected to multiple forms of negotiation and social construction, even while maintaining status differences as a convenient normative technique of bridging those cultural capital differentials [44]. This assertion recognises that ICT are already ubiquitous in higher education and, in all likelihood, emerging technologies will impact current practices [45, pp. 33-4].

The 'networked collective unconscious' is an image of the implications of the socio-technological nexus of ICT. A communicational approach towards learning and teaching, as well as a sense of the shared conditions of the construction of self and knowledge through

technology, can be seen a realization of the distributed character of cognition in the new technological context.

The adoption of this point of view as theoretical and practical framework unveils new ways of harnessing the multiple voices converging on the classroom. As previously noted, it is a mistake to assume that everyone in a classroom is equally technologically literate (or even considers him or herself knowledgeable in the use of technologies) on the basis that it has been a part of his or her life for a long time. For instance, it is clear that some forms of networking, such as the use of social network services and applications, while useful in general, may bring little more than yet another form of distraction if left out of the dynamic construction of the classroom as distributed cognition system.¹¹⁷ Besides being a presential community, the classroom acquires the virtual component of an imagined community continuously (and socially) made manifest by research, teaching and learning.

6. Closing Remarks

This discussion indicates that, even if the younger generations now reaching higher education were, in fact, indisputably more technologically oriented than teachers and institutions, it would still be necessary to assess what learning practices that prowess may foster. While it is true that information is easy to come about in the connected classroom, guidance is still necessary in order to integrate whatever tools are considered necessary into the cognitive ecology of the classroom. Therefore, it seems appropriate to conclude that the promotion of information literacy is one of the main tasks of every educational level.

My description of the new information flows tries to address such facts as: extensive use of mobile technologies, permanent access to the Internet, the institutional redefinition of the teacher's role as guide instead of gatekeeper and students' expectations regarding the potential of network technologies. While it is true that the fixed authority of the written word and academia are being challenged by networked distributed cognition, it does not follow that the latter can replace, as method and source, the institutional structure of formal education. Arguments for adaptation and 'gamification' of contents for a new generation of learners overlook essential aspects of education, failing to notice intra-generational technological and literacy gaps precisely when their bridging is most urgent. Just as McLuhan underestimated the homogenizing normative effects of electronic media while comparing them with print media, so age-determinists fail to take into account the cognitive effects of use differentials, especially as they are brought to the fore by formal or informal contexts with varying literacy skills and demands.

The educational use of ICT has transformed practices and institutions. It has drawn in a plurality of voices previously kept out and, in effect, created new pathways of authority and cognition within the social space of a class. These absent presences, as well as their interpreters, can be perceived not as a "village", but as a networked "collective unconscious" [29], [34]

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Ellison et al. suggest that higher learning institutions might use Facebook's social capital affordances to encourage the transition to/ from other life contexts, besides using it for all activities relying on social ties [46, pp. 1164-5]. This confirms, to some extent, that the use of Internet technologies does not necessarily disrupt conventional educational functions and can even be said to reinforce institutional roles [47].

comprised of overlapping distributed cognitive systems. It is not an effect of the expansion of the volume of available knowledge or an archetypical pre-verbal space, but as vast repository of resources which can and should be critically embedded into learning practices. The specific forms this distributed system may take demand further quantitative and qualitative studies. This paper aimed to map a theoretical framework that would allow such work, accounting for the role of the several elements that comprise the expanded cognitive and epistemic space of the connected classroom.

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Educommunication in distance education: e-mentor communication processes for dialogue development

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1. Introduction

The emergence of new technologies and the use of them to develop the area of distance learning put focus on the necessity for a better knowledge about the communication processes for online learning communities. In addition to this, there is the possibility of establishing a closer interaction among the actors of these environments which has started with the review of the learning processes for distance education, aiming to understand and identify the most effective educational methodologies to be adopted for these courses.

In fact, McLuhan (1996) started a debate about the importance of knowing the communication processes as every new medium development modifies mankind's relationships and creates a totally new human environment. He defends that the media are extensions of the human body and that would be the reason for man to always be fascinated with every sort of technology. He also talked about the breaks caused in any system because of the interaction between old and new forms of media. Regarding the internet specifically, according to his main writings on this subject, he would have considered it as a multiplicity of many media that offer resources such as text, voice, video and image, among others.

McLuhan's concept of global village pointed out that there is a transformation of the perception model, and that dialogue happens globally through all these different media. He also talked about the importance of media studies in order to understand the effect of their use in the education environment. He has highlighted the need for observing the significance of the message, as it cannot be understood merely as a result of the alternate production, transmission and reception, but for what he called the hybridization between the sender, the statement conveyed, and the recipient. That means that in the Information Age the subject is both receiving and sending messages. Finally, he pointed to the great challenge for teachers to deal with all these different media in the classroom.

On the other hand, Castells (2009) points out that the communication process happens as a result on the society structure, culture, organization and technology of communication. And it is this communication process that mediates the way that communication relationships are structured for social practices.

Because of these communication tendencies, the School of Communications and Arts, of the University of Sao Paulo, is dedicating special attention to the interrelation between communication and education – also called Educommunication, which is an emerging interdisciplinary area of great importance to these two fields of knowledge. It is structured “in a procedural,

media, transdisciplinary and interdiscursive mode, being experienced in the practice of social actors through specific areas of social intervention" (Soares, 1999, p. 24).

Educommunication is a field of convergence not only in the areas of communication and education, but in all areas of the humanities, and has its strength in pursuit of citizenship and participation. The goal of this new field is not to occupy the fields known today as Education and Communication. Its purpose is to study the interrelationships among them, to contribute to the identification of new teaching methodologies with the use of communication media that are known and accessible. The research in this new field emphasizes the dialectic interaction between people and their reality, where all the agents of the process are transmitters and receivers at the same time (Soares, 1999).

So, this study is about communication processes mediated by the e-moderating in the distance education course setting through virtual learning environments that use various digital communication tools to verify the communication process management of referred participant in this kind of community, to check how he/she converse among all the participants.

Some key recent theories of Distance Education from countries like Canada, USA, and UK during these last 20-30 years were reviewed as they underpin and consolidate practices of dialogical communication in these virtual spaces built in processes linked to communication management and developed by e-mentoring, so we could map indicators which were also common to the new educommunication practices.

2. Educommunication and Reflexive Dialogue

The Centre of Communication and Education (NCE – Núcleo de Comunicação e Educação) of the University of Sao Paulo has developed a research, from 1997 to 1999, entitled "Interrelationship Communication and Education in Latin American Culture", coordinated by PhD. Ismar de Oliveira Soares, which identified that this new social intervention field has gained stature:

"Educommunication is a set of actions focused on the creation of communication ecosystems and creative education spaces, favoring both dialogue-type relations between people and groups as well as creative appropriation of information resources along the processes of cultural production and knowledge dissemination. The new field seems to be interdiscursive, interdisciplinary and mediated by information technology" (Soares, 2003:91).

The studies on this new field are based on four themes: media education; technological mediation in education; communication management for education projects; epistemological reflection of the new field. In addition, the implementation of educommunicative projects has led to participant leadership as well as the development of reflexive dialogue for critical thinking.

This study was developed from the standpoint of the interrelation between Communication and Education, thereby focusing on communication management and the observation made in distance learning courses that points to the necessity of better knowing e-mentor practices. It is important to look at this not just from a purely Communication or Education view in order not to run the risk of not seeing the real potential of transformation that this

interface can foster, which was also pointed out by McLuhan (1996). As a result, the studies were focused on knowing more about the management of communication within the e-moderator practices for the establishment of a real virtual learning community based on the development of dialogue and critical thinking.

Communication management consists on dealing with communication as a process in which the agent is responsible to promote dialogue and pluralism by mediating specific interactions for the relationships (Costa & Lima, 2009). Specifically about communication management in educational spaces, it means to work on planning and conducting achievement for programs and projects articulated in the context where the interrelation Communication/Information/Education happens, creating and implementing communicative ecosystems (Soares, 2002).

Many years ago, McLuhan (1996) already defended that we need to understand the technologies of communication, as well the way they affect our lives, in order to fully understand society transformation. In fact, when we had only the analog media, with a one way transmission and a one-to-all communication model, the theories of mass communication helped with the comprehension of the process of message transmission. It is now very difficult, though not impossible, to explain the processes of one-to-one and all-to-all communication based on this theory. We now have mediated computing interaction and the growth of the use of these tools by the learning processes with intense collaboration among participants. This new scenario demands other communication methods based on human interpersonal and group communication (Primo, 2008).

Martin-Barbero (2002) alerted for the fact that one of the biggest modern challenges is to establish a communicative ecosystem based on diversified culture experiences, which also still provides education as the place where you have a learning and still maintain its sense of enchantment. For him there is no way to have real transformation in the structure of learning, methodologies and practices without a transformation of the current school mentality.

For communicative action, Habermas (2003) points that the main path of social investigation is communication, not the work or the production, and he suggested the importance of analysis of the communication praxis. His ideas and analysis were not focused on education, but rather on the social world. He presented a model of communicative action which points out that people use language to organize themselves socially, and that this happens based on the interaction of interlocutors who seek consensus and the extinction of all internal coercion. Communicative action is based on the argument that aims towards recognition and validation of the principles originated from group interaction and whose speech is regarded as the ideal linguistic situation. The theory of communicative action argues that interaction seeks out the mutual comprehension arising from the communication process, as the validity of propositions or legitimacy rules can happen only with the agreement among participants through speech. This interaction reflects the exchange among participants who communicate freely through this speech.

In parallel to this, Paulo Freire (2002) defended the emancipation of education by arguing that education is dialogue and communication: "... it is not just knowledge transference but a meeting of interlocutors who look for the meaning of meaning" (Freire, 2002). The learner must be respected as a thinking person with previous knowledge and internal references and who is able to reflect on and discuss a specific topic based on previous experiences and knowledge. For this author, dialogue is established only when there is an adjustment of signs and so that those involved can discuss a particular object for the construction of new meanings.

He affirmed that the liberating praxis is based on human reflection and action near the world in order to transform it. He reflected on the relationship between oppressor and oppressed, defending the need to free the oppressed from the oppressors and also from themselves by abandoning the feeling of being less than others. However, the restoration of humanity would not happen by the oppression of oppressors but by the restoration of humanity of every person, which involves collaboration in communication process among two or more participants, and not just from one to another. The liberation of the oppressed is not simply an awareness, but rather a major empowerment of each person's right to practice freedom without leaning to the other extreme and becoming oppressive. To this author, freedom praxis means human reflection and action upon the world to transform it.

The legitimate process of dialogue happens only when the contributions among participants are real and authentic, with real intent of exchanging views and consequent joint reflection without any manipulation from any participant, with no room for oppressor or oppressed, just the same interaction for the joint construction of knowledge about a specific theme. The current posture of many educators must be reviewed in order for them to assume more of a mediation posture than a mere transmitter of content or even oppressive posture, imposing their points of view with no room for contributions and true reflections.

Freire (2002) proposed the planning and implementation of activities that turn the education spaces into true dialogic and reflexive spaces which would lead to the development of critical thinking.

We could talk a lot more about theories of these two authors, but the main point for now worth mentioning is a coming together of the theory of emancipation from Paulo Freire (2002), and the theory of communicative action, proposed by Jürgen Habermas (2002). They both highlighted two important points for our research here: people are not naturally critical, and people don't know naturally how to develop a dialogue. Both of them, from different approaches, affirmed that the dialogue process must be stimulated by a mediator, who would be the teacher in education or, in our case, the e-mentor in distance education (Torres, Morrow, 2002).

3. Adult Education and Distance Education Foundations

Distance education has been practiced for some centuries now, but it was mainly since the mid 1960's that there was a consistent interest growth in understanding more about communication and pedagogical approaches that could be used by the referred model, though at this time the most practiced model was the distance education by correspondence. Later, with the beginning of the Information Age and the emergence of so-called new digital media, there was a consistent and challenging transformation in how people communicate and interact, and we have been observing the amplification of communication processes little explored until this point.

It is important to clarify that for distance education we mean the offering of courses that use digital communication tools to keep their participants in contact, who are otherwise not in the same place, by way of accessing the course tools at different times. The adoption of digital media by education enabled the development of new communication processes and updated pedagogical practices, depending on technologies adopted (Pratt, Palloff, 2006).

Some specialists say the fifth generation of post industrial distance education with new

technologies is in progress and it allows different grades of interaction among the participants of courses, depending on the skill aimed at being developed. The evolution of these media has generated the necessity to better know the communication and pedagogical quality of those programs.

As this research is focused on higher education institutes that adopt the distance education model, it is important to talk about adult education before talking about distance education foundations. Andragogy, a theory proposal for adult education, defends that a course offered to adult students must consider some pedagogical and communicative actions planned based on six principles: learners need to know; self-concept of the learner; prior experience of the learner; readiness to learn; orientation to learning; motivation to learn. And although there are six principles, for this moment we will talk mainly about the self-concept and autonomy aspects (Knowles, Holton III, Swanson, 2005).

Malcolm Knowles, considered the father of Andragogy in the USA, defended the fact that the learner can present the capacity of self-learning but this can vary depending on the theme in study. It is also possible to have the capacity of autonomy which means he can organize himself for learning activities, having auto-discipline and auto-motivation, determining times for studying and doing research. He pointed out that although some learners can have this capacity it does not mean that they want to do everything alone without sharing with peers. Instead, he argued that there are many grades of autonomy depending on learners' backgrounds and personalities.

This author did not specifically research about distance education but he affirmed that the teacher is responsible for teaching and developing this learner's autonomy capacity. He explained that the USA and most other countries still adopt industrial pedagogical approaches, also called "educação bancária" by Paulo Freire (2002), where the student is considered a mere information repository, who is almost totally submissive. Due to this, most of the learners do not know how to have learning autonomy, and this can be learnt via their teachers.

One of the first theories that emerged at the beginning of the 1970's was the Theory of Transactional Distance, from Michael Moore which consists in:

"... the gap of comprehension and communication between teachers and learners caused by the geographic distance that must be supplanted by different procedures in the planning of instruction and the fostering of interaction" (Moore, Kearsley, 2007:240).

This new context demands the development of new pedagogical approaches with more effective communication by the e-mentor in order to reduce the sense of emotional distance that arises among participants in these kinds of courses, aiming at the establishment of a more intense dialogue in the virtual learning community and the consequent development of critical thinking. Therefore, this theory is based on the study of the grade of emotional distance that participants develop depending on the course structure and on the intensity of dialogue established for the whole course.

The structure can be rigid or flexible, depending on the pedagogical and communicative philosophy adopted by the learning institution, and it has a direct influence on the whole planning of the course, including the definition of the content processes, the learning objectives and the learning assessment.

Dialogue can be established with specific interactions that can vary in terms of intensity depending on some of the characteristics of course environment such as student profiles,

technologies and languages adopted. Although there are many interactive media being used by distance education, the adoption of them does not mean that there will necessarily be dialogue in that virtual classroom. Also, there are different grades of interaction depending on the pedagogical activities adopted for a specific discipline.

Moore (2007) defends the importance of better communication among course participants developed with the planning of collaboration interaction and procedures between e-mentor and students, which is also established considering a third aspect, the autonomy of students themselves, a point also mentioned by Andragogy Theory from Malcolm Knowles (Knowles, Holton III, Swanson, 2005).

Student autonomy would be the capacity to make decisions along their own learning process (Moore, Kearsley, 2007). Due to this, we must consider and accept personal student differences as an enriching aspect for the learning process. So a distance learning course shall be planned by an education institution considering its structures, the student autonomy and the grades of dialogue that are necessary to stimulate the exchange of ideas and reflections among students for the development of a solid knowledge about the theme in study. He suggests that different possibilities of interaction must be planned but they must be thought considering there will be e-mentors as communication managers along the whole mediation process.

There is also a theory proposal for distance education called Community of Inquiry which was suggested by a group of Canadian researchers from Alberta University and Athabasca University. They invested many years working on understanding how critical thinking process and reflection to construct personal meanings could be implemented near virtual text-based learning environments by analyzing the e-mentor practices and the whole communication processes managed by this education agent, among other issues. Based on their ideas, the:

“Community of Inquiry theoretical framework represents a process of creating a deep and meaningful (collaborative-constructivist) learning experience through the development of three interdependent elements – social, cognitive and teaching presence” (Community of Inquiry, 2010).

In fact, this group points out that communication processes established by the e-mentor can support the development of these three presences and argue that depending on the type of communication – synchronous or asynchronous – and on the communication way – one-all, one-one and all-all – needed to develop near these virtual environments e-mentor must define and implement many activities focusing on the establishment of an interpersonal and/or group communication developed between learners and the participant, as well as among learners (learner-learner).

Social Presence reflects on the social capacity and ability of participants to create a strong bond with each other by establishing interpersonal relationships, communicating about specific themes and issues and developing an identity with this virtual learning community (Garrison, Archer, 2000). This presence is planned and implemented based on the expression of personal emotions and individual ideas, as well as on stimulus of collaboration among participants and on the open communication necessary among learners for group cohesion. We are talking about managing communication for the development of specific social skills and particular emotional aspects of each participant aiming at reducing the emotional distance.

Teaching Presence consists of the course structure developed based on the planning and the instructional management of it as well as on the processes for the knowledge construction and direct instruction on activities to be implemented. It is “the design, facilitation, and

direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Community of Inquiry, 2010).

Cognitive Presence reflects a context about cognition state of participants, and shows if and/or how students reached a state of sustained reflection and discourse through a learning process developed on construction and confirmation meaning. Cognitive presence is possible to be observed when it is possible to identify aspects like sense of puzzlement, connected ideas or even the application of new ideas by participants near the virtual environment. Analyzing the cognitive presence leads to the understanding of how the learning experience happens along the phases of practical inquiry model (cognition trigger, exploration, integration and resolution activities). The definition of cognition characteristics needed would be based on the content to be studied and on the description of mediations necessary to the learning process.

Observing the computer mediated communication course under this theory makes it possible to understand how the Educational Experience happens when there are these three presences. In fact, the interface analysis of cognitive and teaching presences reflects the content to be taught and when we talk about cognitive and social presences interface, it is possible to notice the grade of dialogue that shall be implemented and nurtured throughout the course. The interface between Social and Teaching presences can guide the climate among participants (Garrison, Anderson, Archer 2004).

Finally, as we are talking about e-mentoring practices around virtual learning environments, we would like to mention one last proposal of methodology developed by Salmon (2004). This author agrees that the establishment of a consistent dialogue among participants regarding distance learning courses is fundamental for the knowledge construction. In order to make this happen, the e-mentor needs to have a methodology for the execution of these practices, composed of indication of different communication approaches developed from various interactions with different grades of proximity.

In fact she proposes the Five Steps Model, which is composed of the following stages: access and motivation, online socialization, information exchange on content, joint knowledge construction and learning development. Based on this model, e-mentoring and technical support practices are essential to reach a consistent learning goal at the end of a course.

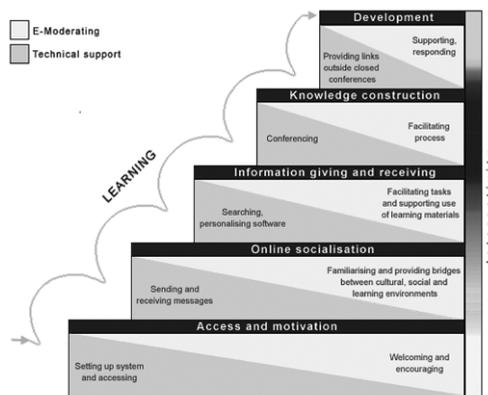


Figure 1: Five Steps Model (Salmon, 2004)

Specific to e-mentoring practices, this model stresses “access and motivation” of the new students, and the importance of giving them orientation on how to navigate in this environment. The e-mentor is also responsible for fomenting personal presentations at the beginning of the course for learners to start to get to know each other. This is the component of online socialization. The third step is dedicated to informing learners about the content tasks they need to develop in the course, and clarifies doubts about the content. At the “knowledge construction” step, the e-mentor works on building group cohesion which is developed by promoting learners in the virtual environment and stimulating the exchange of risk-free expressions and the socialization among them by implementing some specific communication practices throughout this environment. Once the identity of the group is enforced, the e-mentor should address issues related to the course itself such as guidance on tasks to be performed as well as support and clarification of doubts about material and content provided for the course. The following step is dedicated to the knowledge building by fostering individual (e-mentor – learner) and group discussions about specific topics of content aiming at the establishment of dialogue among course participants. Once the debate climate and mutual interaction among participant is established, the e-mentor can focus on monitoring the discussions and making them more and more reflexive.

However, it is really important to mention that the technical support activities must be planned based on the steps developed by the e-mentor throughout the course as those activities can directly influence the outcome of e-mentor’s mediation, remembering that the non-existence of this parallel plan can compromise the whole e-mentoring work.

Therefore, at the first step technical support is focused on opening up access and preparing virtual learning environment for learners to access and browse through it in order to quickly familiarize themselves on this education model. After that, the technical support must focus on tools for exchanging messages among all participants so that the communication starts to occur. The care with operating the media should happen for the following steps, but at the third step they also have to look for a customization of the environment. Then, at the fourth step, it is important to give special support to more increased people interaction tools, which allow learners to interact more intensively with each other. To understand the last step, it is necessary to remember that one of the goals along this whole learning process is to develop learners’ abilities for autonomy, and as a result, it is essential that technical support be provided for complementary research activities that could be developed by learners.

When methodology proposed by Salmon (2004) is analyzed together with the distance education theory proposed by Garrison, Anderson and Archer (2004) and the theory proposed by Moore (2007), it is possible to observe complementary aspects between the three of them, specially regarding the establishment of dialogue processes for knowledge construction. Based on what these different authors point out, this argument exchange can only happen if socialization among learners is established based on a series of communication procedures mediated by e-mentor.

Assuming that communication is “shared action” and that interaction is an “action between”, the aiming point here is to know and understand what happens with communication participants. It is necessary to understand communication procedures mediated by an e-mentor, taking into consideration the relationships that are established exactly because of procedures adopted in a virtual environment consisting of so many communication tools. It is necessary to consider not only the media, but also the communication among participants, and what (and how) they do with and through these media to communicate with each other (Primo, 2007).

As McLuhan (1996) used to say “media is the message”, and depending on the media adopted it is necessary to have a good communication process managed by an e-mentor in order to develop the reflexive dialogue among participants.

When an attempt of approximation between these theories and the educommunicative approach is done regarding if the e-mentor could be called “educommunicator”, it emerges a reflection about if it would be possible to say that the e-mentor and his mediations focused on the development of specific communicative procedures in virtual learning environments are responsible for transforming these education spaces into communication ecosystems with emphasis on the establishment of dialogical relationships among participants and with the use of different digital media.

In terms of indicators, when reviewing the proposed format of distance learning courses from Garrison, Anderson and Archer (2004) as well as the theory proposed by Moore (2007) and Salmon’s methodology (2004), it can be observed that the three of them seem to be both educommunicative and constructivist, since they seem to emphasize two main aspects of educommunication approach: sense of participation, development of subject’s autonomy, collaborative dialogue, search for the critical thinking development and encourage the full use of information technology resource for distance education models.

Theoretically speaking the e-mentor of a virtual distance environment could be called educommunicator or a communication process manager if this agent makes a detailed planning of his mediations planned to develop the critical thinking based on the communication management around the course, considering collaborative participation and stimulation to a reflexive dialogue. In fact, Garrison and Anderson (2003) point that the planning of a virtual learning environment for the adult learner should preview the e-mentor communication management of all mediations near his learners.

But more than everything when we talk about distance learning courses offered through a virtual learning environment built with digital media we notice that education procedures must be planned considering not only a set of general communication procedures, but also the planning needs to contain a sequence of this practices developed based on a specific goal and considering the communication tools that will be used.

As Castells (2009) argues, it is the communication process that mediates the way the communication relationships are structured at the social practices.

4. FGV Online Case

After this theoretical exposure we would like to briefly mention some aspects and results obtained from field research made on the distance education program of Getulio Vargas Foundation, FGV Online. We opted to develop a case study of communication processes mediated by the e-mentor at distance education courses through virtual learning environments that use various digital communication tools, to verify the communication process management of referred agent near this kind of community to check how to stimulate a reflexive dialogue among all participants happens.

FGV Online program was chosen specially because of two reasons. Its whole structure understands the e-mentor as essential for the communication processes management near the virtual learning environment and also due to the results of a recent research made of more

than 15,000 ex-students of distance education courses in Brazil which pointed that this is the best program currently offered in this country.

About the referred program, it has a team of more than 1,200 e-mentors responsible for all mediations of communication processes (10% PhD degree, 49% master degrees and 41% specialist degree) and also counts on 550 professors as content authors, most of them – 75% - with Master degree. There are also more than 200 employees working as instructional designers, technical support attendees and logistic representatives, among others, and they are responsible for the customization of Moodle LMS, including creation of short educative cartoons made available via the virtual environment; editing the theoretical content for virtual, printed and digital formats; controlling and monitoring of e-mentoring activities for each discipline; technical support system for learners and e-mentors; special support to locate the “missing learners” (students who do not access virtual environment for over two weeks, who has not been participating in virtual discussions or who has pending tasks), among others issues.

This educational institution focuses on business administration courses and offers extension courses as well as graduate courses, post graduate courses, and corporate courses, which usually have a length of 30 hours per discipline. Therefore, their offers go from open/individual disciplines (duration of 30 hours), to graduation course in Process Management (lasts a total of 1800 hours; taught over three years) and post graduation courses in Business Management (average duration of 410 hours). Important emphasize is that 95% of the course is delivered through virtual learning tools.

Regarding e-mentor training and formation, they offer an online course on Virtual Learning Methodologies, Virtual Learning Research and E-mentoring Practices which lasts a total of 90 hours and depending on the learners' grades, they hire them as e-mentor trainees. They give the e-mentor a first class to teach, but there is another e-mentor with much more experience who accompanies this “trainee” during the whole discipline, giving orientation and tips of e-mentoring as well as evaluating the performance of the candidate. Only after this stage can the professional be considered a real e-mentor for the program.

They have a list of very precise procedures that the e-mentor must practice with a priority scale, which signals that they do have practices that reflect the practices proposed by the distance education authors here mentioned. In fact, we develop the whole field research considering main indicator of reviewed key recent theories of distance education mentioned before which underpin and consolidate practices of dialogical communication in these virtual spaces built in processes linked to communication management that are developed by the e-mentoring.

In order to verify the interrelations between distance education and communication based on the practices of that education agent, we adopted the method of case study to conduct our field research, which included the examination of the practices of this e-mentor along with fourteen virtual classrooms of this program, and the use of questionnaires answered by 78 e-mentors (total e-mentors contacted: 820) and 35 learners (total learners contacted: 430) of that institution.

The results pointed that it is possible to establish reflexive dialogue in the virtual learning environments if the e-mentor follows a previous communication planning which contains a detailed and ordered description of all the communication procedures that will be adopted along the course.

But it was a complete surprise to verify that despite the fact that they have a very well

defined list of e-mentor procedures with activities that must be implemented, there is not a specific orientation on communication management when they are developing the procedures. When we analyzed the individual interviews with some e-mentors and learners as well as the results of observation near the fourteen virtual classrooms based on indicators from distance education theories mentioned and educommunicative proposal, we found that the reflexive dialogue only happened when the e-mentor had a specific orientation or formation on communication management and performed his/her obligatory e-mentor tasks based on this knowledge.

We are talking about verifying message by message in the virtual environment, checking if there is stimulation of reflexive thinking on the content together with motivation for debate among learners and not only with e-mentor, besides other indicators. For example, all e-mentors must “open” a “welcome” discussion area as forecasted on the list procedures but what we call the “educommunicative” e-mentors really interact with learners as they were in a present classroom. Their focus is not only to work the list of procedures, but also to generate and manage the communication and interaction among learners in order for them to build the group identity and go deeper during the content debates, generating the reflexive dialogue at this virtual learning environment.

Conclusion

The decision to observe the e-mentoring practices based on the indicators defined from Andragogy and distance learning theories as well as from educommunication, made it possible to identify some factors that directly influence the results of communication procedures developed by the e-mentors for the development of reflexive dialogue and critical thinking. More than that, this process show how important communication management is, depending on the educational goals of a course.

These initial studies on the management of e-mentoring communication processes indicate that we have a long way to still travel, but the results show that the necessity to work on orienting the e-mentor of the importance of communication management for virtual learning environments, especially in order to understand how communication happens through specific digital media and consequently how they can manage the communication for the reaching of education goals.

It is important that these virtual educators really know and understand how every communication tool works and how the type of communication developed through it can influence the result of the education process. It is important here to emphasize that we are talking about the development of the capacity for reflexive dialogue and critical thinking as education goals.

Speaking from the educommunication standpoint, when the e-mentor really works on managing the communication processes inherent within the virtual learning environment, we call them “educommunicators”.

Finally, we dare say that this communication management approach for education programs should be applied not only to distance learning courses, but also in presence courses which are also adopting the use of many digital tools. This is just a suggestion of reflection.

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Communication Processes at the “Distance Learning in the Amazon Forest Project”

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Abstract. This article deals with the relations between Communication and Education that occur in the usual education mediated by new technologies, and that are taken in a Project that offers live classes broadcast through an interactive videoconference model. It also aims to explain how the whole communication processes are managed in order to reach specific educational goals. It briefly presents the theoretical basis of Educommunication field, and then it works on thinking of the use of new technologies in education within an educommunicational perspective, looking for clarifying the importance of communication process management of projects as the “Distance Learning in the Amazon Forest”. “Distance Learning in the Amazon Forest Project” has adopted new technologies to broadcast live classes for elementary and high school education through a two way satellite technology (audio and video interaction) to 540 classrooms located all over Amazonas State, in Brazil.

Keywords: education mediated by technology; educommunication; distance learning; communication management; Amazon Forest.

1. Introduction

Information Era and the use of new communication technologies for education purposes are dramatically changing our society, in which everything is transversally articulated and the traditional institutions have less control of information and communication. In fact, everything is affected by this new scenario, from the new forms of online sociability to the new ways of social participation and political intervention. Also the emergence of the interactive media affected directly the education, as well as the use of these digital tools in distance learning environments demand knowledge of communication management of their processes.

McLuhan (1996) has pointed out that the use of different media can trigger different mechanisms of perception, which means that the content that one intends to communicate would be affected by the medium adopted to make this communication: the media is the message. Media are extensions of human body, which makes these digital tools so attractive for human being. Besides, every medium creates new human environments as they can affect people's relationships. McLuhan argued that a message is the result of a hybridization among

sender, message and receptor.

Regarding education issues, McLuhan (1996) highlighted the importance of studying the communication processes in order to understand how to manage the transmission of contents in educational environments. He talked about the need of training teachers on the management of the communication processes in these digital media. Also Castells (2009) points that society's structure, culture, organization and technology of communication compose the bases for communication process which mediates the way the communication relations are structured in the social practices.

The studies of Educommunication field on communication management comprehends communication as a process. The teacher responsible for this management mediates the relationships near a specific learning environment to promote dialogue among the participants of a course. This mediator's role is to stimulate an organized a free debate by adopting communication procedures previously planned. The use of new technologies is now demanding the training of teachers to review their pedagogical activities (Costa, Lima, 2009).

Distance Learning in the Amazon Forest Project was observed through its communicational processes according to these initial premises adopted by the ones involved with pedagogical coordination.

2. Communication Management in Education Programs

From 1997 to 1999, the Centre of Communication and Education' team of researchers (NCE – Núcleo de Comunicação e Educação), at the University of Sao Paulo, Brazil, has developed a thematic study named "Interrelationships between Communication and Education in Latin American Culture", which was coordinated by Dr. Ismar de Oliveira Soares.

The results confirmed the emergence of a new social intervention field that they called Educommunication, which is mediated by digital media and seems to be interdisciplinary and interdiscursive. In fact, it favors the creative appropriation of information resources along processes of cultural production and knowledge dissemination as well as dialogical relations between people and groups, and it is focused on the creation of innovative education spaces and communication ecosystems (Soares, 2003).

This study also identified that two of the main indicators of an educommunicative project are the development of reflexive dialogue among participants for the critical thinking and the occurrence of participants leadership, and pointed out that this new field is based on four themes: media education; technological mediation at education; communication management in education projects; epistemological reflection of the new field.

Since then, many Master and Doctor degree studies were conducted at the School of Communication and Arts, in the University of Sao Paulo, Brazil, in order to verify those four themes. In this present article, we will focus on how communication processes are managed in the Distance Learning in the Amazon Forest Project.

The mentioned team of researchers understands that the intensive use of communication technologies for education projects demands to be understood by its real potential of transformation that this interface can foster, not exclusively from the Communication view or from the Education view.

The developed study to understand this new field considers Paulo Freire (2002) as one of

the most important thinkers on the interrelation between communication and education. He states that education is communication, it is dialogue as for him the true communicative action happens through the dialogue, and he condemns the industrial education as it is yet today based on a transference of content from one person to another, without a consistent reflection about it, without an exchange of individual arguments built from the critical analysis of that content, making the learner a simple content receptor, almost a content repository. In this industrial scenario, we can notice the absence of collaborative participations for the construction of new meanings.

Despite the fact that he focused a yet common and traditional education model as in the past as well in current days, his ideas about education and communication remain remarkable. They have been even reinforced with the present evolution of communication tools due to the emergence of a more interactive media and to the growth of their use in educational environments. In fact, this new scenario has emphasized the need of rethinking the education from the point of view of communication process management.

McLuhan (2005) states that knowledge and information were larger in the classroom than off classes, in the past. The emergence of new digital media, along with all the strengthening and enrichment of information broadcast, has changed the school's function from instruction to discovering responsibility. The school should not reproduce contents merely, and not try to settle these contents on the brain of the learners. On the contrary, it should help the learners to open their perception for the external environment, which means a deeper paradigmatic change that can generate an intense shock for all participants of this process. We can currently observe an uncountable amount of available information resources, which allows children to search to developing educational activities as a team. That demands an evaluation from educators about their usual attitude, in order to recognize the fact that learners are able to deal with information and make it useful. Students want to interact, and they want to be part of the educational process by contributing through communication activities. However, educators have to learn how to coordinate classes within this new model. In fact, we are facing a time that the classroom and curriculum shall consider these changes. That means including the built-in pattern discovery, and considering the proper use of these new technologies, which demands the identification of specific communication procedures for each type of adopted medium. Walking this way, the discovery process is enabled and the learning outcome is reached.

Martin-Barbero (1996) complements that the true communication process proposal lies on the interaction that each medium allows to the receptor, and that it is based on the way this receptor uses one or more media, which also defines the social recognition of those tools. He points out that mediation process is actually an interaction process, a negotiation process of meaning.

As we approach the interrelation on Communication and Education, it is essential that we look at that interrelation from a strategic point of view, according to Martin-Barbero as:

“ a communicative ecosystem that constitutes a diffuse and off-centered educational environment in which we are immersed. A diffuse environment is composed by a mixture of languages and different knowledge that circulate among several media devices, but dense and intrinsically interconnected.” (Martin-Barbero, 1998: 215).

On these communicative ecosystems, Soares (1999: 41) points out that they are estab-

lished in the search for:

“a democratic and creative management of communicative action that includes the already known studies about reception and education for communication¹¹⁸, as well as the technological mediation areas due to the production and knowledge management that lead communities involved to transform their educative spaces into expressive communication ecosystem (Soares, 1999: 41).

Even though we can tell this whole change in society because of new digital media, we still observe a view of education from something that specialists call ‘behavioral epistemology of communication’, which argues that the transmitter is the only responsible for the whole communicative activity, and that the receptor is a mere content receiver, a “plank shallow”, as highlighted by Martin-Barbero (2002), reflecting the image of a manipulated and oppressed receptor (Freire, 2002).

Dealing with the dialogic texture of communication, we observe that the individual, as a social human being, interacts and is interdependent of other individuals. He or she communicates in otherness, and this individual suffers the mediation of many factors when he or she communicates, which influences the final reception of the original message once sent. There is a fragmentation of cultural *habitat* that Martin-Barbero (2002) calls “*destiemplos*”¹¹⁹ situation composed by a large cultural diversity developed along different times, in past, residual and emerging cultures. Therefore, it is necessary to ask for the ways that people get together, how they recognize each other in a context full of communication media options which offer many contents to different consumer profiles.

According to Martin-Barbero, that fragmentation:

“... reinforces an older and more structured social division that is the division between the ones who take over in some ways or have information to make decisions – and we know that today power is information – and the population to whom the media are addressed” (Martin-Barbero, 2002: 45).

Back to the discussion on interrelations between communication and education, communication is still reduced to a mere instrumental dimension and there is not a strategic thinking of the society’s communicational processes and their relations to education. The big challenge here is to induce the arising of a new educommunication culture that adopts the new communication and information technologies, and takes longer on planning how to merge all different narratives, writings, representations and languages to transform the perception, which means changing one’s perception, knowledge and feelings (Martin-Barbero, 2002).

Actually, the emergence of digital media has contributed to bring up new knowledge sources for everyone, meaning that school no longer plays the main role as knowledge source. There is a call to think of new educator’s job description and educational methodologies, in order to change pedagogical practices from a one-way to a two-way communication model, supported by Freire (2002) and Martin-Barbero (2005) among others, to establish meaningful relationships for learner and teacher, for teacher and learner, and for learner and else learner.

118 Also known as Media Education, in Europe.

119 Coexistence of different political-social-cultural aspects which emerged at different moments in a society under different historical contexts.

The mutual interaction and dialogue take key roles in the process of knowledge and critical thinking development. The educator ceases to be a content transmitter, and becomes a questioning developer, introducing more complex issues to his or her students. There is a huge challenge on the horizon of knowledge construction as we face a very fast exchange of information across the network, as compared to the knowledge that teachers have about technology and their ability to be up to date on this subject. That seems to cause a decrease of teacher's power as the only holder and transmitter of a student's knowledge. More than ever, the adoption of new technologies demands that educators learn how to dialogue with their learners, how to mediate an exchange of arguments for the critical thinking development.

The findings present here indicate an urgent need of investing on planning of communication processes in order to organize the use of several media adopted to reach the educational goals.

Communication management consists on thinking of communication as a process in which the agent responsible for the management will mediate the relationships in a specific environment to promote dialogue and pluralism (Costa & Lima, 2009). When we talk specifically about communication management in educational spaces, we mean to work on planning and conducting achievement for programs and projects articulated in the context where the interrelation Communication/ Information/ Education happens, creating and implementing communicative ecosystems (Soares, 2002).

It is important to think of reviewing a educator's approach, as this agent must really understand the way the media adopted can be used for educative purposes, and understand the kind of interaction they let him do with the learners, in order to intensify the educational process. First of all, educators must be taught about the importance of communication for education and about the influence of each factor that affects the mediation process, depending on the medium adopted when they are using digital media to teach. These educators must understand the new pedagogical approach, which means that they are responsible for the learner's transformation, and not only for transmitting content to this one.

Educators must learn how to stimulate and encourage learners to reflect about a content compared to their previous knowledge, in order to confirm or update that knowledge, independently of their age. More than that, they must learn how to mediate these communication processes in educative environments.

As mediators they should be responsible to think of activities that stimulate a student to argue about a content previously introduced to his or her colleagues in a present or virtual classroom, focusing on positive provocations and collaboration among all participants. Both as mediators or communication managers, they must consider their practices to aim the knowledge construction process based on a consistent dialogic communication. They must know and make good usage of technologies employed to mediate communication processes by developing strategic plans that hold a detailed description of all educational goals, as well as the respective communicational actions that must be present to reach them.

That specific training might cover critical and multidisciplinary aspects, including research and management planning, in order to help the communication manager to be "*a professional able to build not just an instrumental commitment, but also a political, cultural and educative commitment to society, based on communication and culture of his/ her time*" (Orozco-Gómez, 2002:13).

The communication manager is:

“a professional that thinks of his/her activities as a creation of dialogic spaces, and not just as simple emission of a one-way information, found in just one source. He/she is conscious of communication role in contemporary life and this professional must work in an ethical and democratic way, supporting the rights to information, freedom of speech, and access to knowledge. And only when he/she puts his/her knowledge to the service of those principles, he/she is acting in an autonomous and independent way, making communication a space of dialogue and relationship” (Costa, 2009, 162).

Only then will it be possible to guarantee the correct usage of technological resources, and optimize the communication among people in a community, counting on everyone’s commitment and creativity (Soares, 1999).

3. Distance Learning in the Amazon Forest Project

D Brazilian education is designed into three stages, as follows: 1) elementary school composed by ten grades, each grade lasts a year; 2) high school offered along three grades/years; 3) and college or higher education.

The mentioned DLAF project was planned out and implemented by the Secretariat of Education and Learning Quality of Amazonas State to solve a demand for high school education in the Brazilian largest state. Located in the North Brazil, the total area of Amazonas State is over 1.5 million km², as big as three times the size of Spain. Ninety two percent of its area is covered by the Amazon Rain Forest and by the Amazon River basin. Its population reaches 3.3 million inhabitants, half of that lives in the State Capital, Manaus. People who live in the state hinterland are spread out across small towns and villages. The majority of these rural communities is accessible only by boat via rivers. In some cases, a 30-day boat trip is the only way to get to some far away villages.

DLAF project was launched in 2007 for broadening and diversifying school attendance by using media technologies throughout the State of Amazonas. The project goal was to meet secondary level education needs by using satellite and multimedia IP (internet protocol) technology, offering great convenience for local learners. DLAF serves a population of learners who live in new settlements and expanded regions, for derivative programs, for College preparatory purposes or workforce needs. It reaches about 30.000 students, over 1.350 teachers in 1.300 classrooms spread all over the forest. 1.500 rural communities are served by 568 satellite antennas, and the students can have up to 200 school days per year.

Prior to the implementation of the project, people from those rural communities in Amazonas State were not able to get access to good quality education. Actually, the access to any high school education was almost impossible for them. Students were only able to attend high school if they moved to one of the 62 municipalities in the State. Depending on the village, the nearest municipality takes more than a 300 km boat trip.

In addition to that, there was another problem: it was almost impossible to hire well trained teachers to teach in other cities but Manaus. There were not enough graduated and prepared teachers for learners all over the state in those distant rural communities. When we look at the Brazilian Ministry of Education’s ranking on the offering and quality of high school, by 2007, the year that DLAF Project was released, we can tell that Amazonas State was always at the last

position, since high school education was not a reality in villages and small towns.

Despite the title taken for this paper, DLAF is considered by the Amazonas government as a hybrid project, since it involves attending to classes in a real classroom and doing virtual activities, all of them mediated by new technologies.

Classes for high school are offered in a daily basis broadcast from Monday to Friday, from 7:00 p.m. to 10:00 p.m.. The following courses are taught: Portuguese language, English language, Geography, Biology, Philosophy, Chemistry, Physics, Mathematics, Global and Brazilian History, Physical Education, Sociology and Arts.

Technological infra-structure is now used to offer also three elementary school grades – sixth, seventh and eighth grades – from Monday to Friday, 1:00 p.m. to 4:30 p.m.. It means that takes a specific content preparation for that level on Portuguese language, Sciences, English language, Mathematics, Arts, Global and Brazilian History, Geography, Religious Teaching and Physical Education.

First of all, the Media Center was settled in Manaus, physically located close to the Department of Education offices. The Media Center holds a sector in charge of class content pre-production, plus three studios from where classes are daily broadcast to all classrooms, and DLAF general coordination. The team counts on almost 2,000 employees, being 15 pedagogical and academic coordinators for content preparation and classes presentation (including specialist teachers), 62 regional coordinators (based at 62 municipalities), 540 school managers, 1,300 generalist teachers (one per classroom), besides communication production and technical support teams located in three Brazilian States: Amazonas, Sao Paulo and Rio de Janeiro. To be precise, the States of Sao Paulo and Rio de Janeiro only have the technical support teams.

Table 1: Project's Growth Numbers - Media Center of Amazonas State,
Amazonas State Department of Education

Indicators	2007	2008	2009	2010	2011
Municipalities	42	62	62	62	62
Students reached	10.000	17.000	25.000	27.000	30.000
Classrooms	260	524	740	1.000	1.300
Rural communities reached	334	700	1.000	1.200	1.500
Satellite antennas	250	406	406	480	568

When we were first introduced to the project, we started to observe and think of its communication processes, taking the interrelation Communication and Education in perspective. The initial challenge was to understand how DLAF Project gets by communication along the whole process mediated by so many professionals, some of them traditional teachers who had never seen a computer before, focusing on the achievement of learning goals.

The project is supported by a two-way satellite service that uses an IP training solution on an online interactive education delivery application platform. It integrates live, interactive, real-time and on-demand two-way audio/video and data. This interactive distance learning solution is capable to transmitting/receiving high quality two-way audio/video, and providing learning

tests and other pedagogical classroom needs, while being equipped with a recording functionality for future playback individually associated to the right management system.

Pedagogical methodology is based on real-time classes broadcast live and interactive television given by specialist teachers, from the 3 studios located at the Media Center in Manaus. There is a so called “generalist teacher” in each class, responsible to support local activities. Therefore, this project solution addresses an urgent social need and has as its main benefits: availability of classrooms near student homes; simultaneous availability of all running programs under one roof; availability of on-demand sessions in case of absence or repeat classes; students from different parts of the state meet in one virtual synchronous classroom where knowledge sharing takes place; availability of a learning management system (LMS) which provides an additional platform other than live interaction that allows students to get together for group discussions, to access course materials, performing online assignment handover and submission, engage in real time chats, feedback and repository of learning objects; availability of a TV studio equipped with all modern teaching tools to facilitate the teachers to work effectively; deliver of printed content material paid by government and distributed free of charge to all the students.

Delivering education to more students than those who are present at a conventional classroom, it is also important to provide teachers with training on this new format of education. To reach this target, DLAF education professional team provide annual refreshing courses specifically to stimulate the thoughts and metacognitive skills of learners at each school, and also of the teachers who work at the TV studio by encouraging the students to share their views with fellow classmates, both locally and remotely in virtual classrooms, and to take part in the learning sessions. This model of education requires a detailed planning of the class script, which means that all the steps must be thought ahead of time carefully in order to encourage students to interact more often with each other.

Talking about the “production” process of communication and education it is important to notice that it is divided by stages. The first one is dedicated to the theoretical content that is developed by the specialist teachers/coordinators from the public education network, which means, for example, that Biology teachers are responsible for choosing the theoretical contents based on the rules defined by the Federal Ministry of Education and by the State Department of Education, for organizing them in classes and didactic printed material, for scripting the live classes (which includes defining all communication media they will adopt for each class) and for teaching classes from the studio.

This whole process is supervised by pedagogical coordinators who are in charge of thinking of every class script along with the respective specialist teacher. They are also in charge of defining the media they will adopt for a specific class. So, in some English classes the teacher and pedagogical coordinator choose an animated cartoon to teach one content. They may choose a song or a movie for the next English class, and suggest some dynamic activities for the students, counting on the generalist teacher’s help at the classrooms.

From the Educommunication perspective, this stage is exactly the one that defines and designs the communication processes. So, the team chooses the media that will be adopted and thinks of the most appropriate actions to be done considering the communication interactions that can be developed through those actions. By communication interaction we mean to say the interaction and collaborative dynamics considering different forms of communication as narratives, writings, representations or languages that will be taken to transform a learner’s perception. This is exactly the first stage of what we call the communication management planning.

The next step is to present every class script to the so called pre-production team, meaning to tell the necessary pieces of communication to the team in charge of creation and edition. This group is responsible for developing the animated cartoons, for shooting and editing specific educational movies, or even looking for an already released one. The group is also in charge of editing the whole content in books that will be printed and distributed to the learners at their classrooms, and for creating a specific visual communication for each course scenario.

The current task for DLAF is to work on the project expansion. Due to the fact DLAF already has a whole group graduated, the efforts now are directed to investing in a second phase of the project, which means to develop more interactive activities in virtual education communities based on LMS and virtual social network tools.

DLAF has already launched a virtual community that keep it virtually connected to over 1,000 Media Center teachers. In that virtual community, teachers can post personal profiles, and set professional and personal debates between them (www.centrodemidias.info). In fact, Media Center coordinators have already offered them a course on ways to manage educational topics when adopting social network tools, including e-mentoring and ethical tips, for instance. Besides, Amazonas State Social Network has already 2,500 users (www.seduc.net). All live classes are recorded. Moodle was chosen as the learning managerial system to download those classes, with other learning material prepared for classes. DLAF is also revising its e-mentoring processes in order to teach new e-mentoring approaches to educators, and help these ones to adopt activities focused in the virtual interaction among all the participants, for setting and strengthening the dialogue.

Remarkably, the project was carefully devised with the view of fostering all students and teachers participation in interactive activities transmitted to the entire public schools network. There are 65 ethnic groups bringing up different indigenous cultures. They constitute yet another element of this broad socio-cultural diversity, and also represent 4% of the State population.

Besides allowing integration of different cultures living thousands of kilometers apart, at times, this project provided an essential element in the process of teaching and learning: creating strong ties between school classrooms, evidenced by the sense of "belonging" among these groups, which perceive themselves as universally linked to the same knowledge basis, enriched by cultural and educational traits that enable the building of group identity.

In order to receive the transmission of live classes through a video conference solution, each classroom was given a technology kit comprising a satellite antenna linked to a satellite router, a radio transmitter, a computer, a printer, a webcam, a microphone, a VoIP phone, a no-break power supply and a 37" LCD television. Internet access was also made available to every school to complement the platform with e-learning services.

Besides the use of communication tools such as chat-rooms and e-mail, students can interact with teachers at the studio by seating by the webcam and speaking through the microphone, both connected to the computer and to the satellite interactive system. That results in a real-time conversation with full communication between all schools and the teacher's studio during the whole learning process.

Almost 95% of the program delivery takes place over the platform while the remaining 5% is delivered by the mediators/monitors at the local classrooms.

Talking about a huge project like this one, with so many people involved and depending so much on the new media to become real, it is important to think of a consistent and effective technical support and DLAF Project has actually invested on this. In fact, the satellite company provides support 24 hours/7 days a week for the schools on the program. This

means that the satellite company has a permanent helpdesk available to resolve classroom technical issues related to the satellite infra-structured education platform. They also have a technical assistance center that is a 24 hours/7 days support service dedicated to handling all satellite connectivity related issues.

In terms of quality of learning, although there are thousands of students attending to the same classes, the seamless integration of satellite infra structure and LMS enables the State Department of Education team to track the effectiveness of training and monitoring the individual student's progress. Students can ask their questions to teachers by e-mail and by online forums.

Learning effectiveness increased along the first year of DLAF project implementation. The drop-out rate is lower than regular classroom-based schooling throughout Brazil, perhaps because the classrooms are located near student homes. According to recent surveys conducted by the Brazilian Ministry of Education, performance results were above the national average in terms of pass rates.

Table 2: Learning Effectiveness of Amazonas State – Brazilian Ministry of Education

LEARNERS SITUATION	BEFORE PROJECT BEGINNING	AFTER PROJECT BEGINNING
Passed	60,40%	77,51%
Failed	12,80%	6,47%
Non-attendance	26,80%	16,02%

Also, due to the fact that classrooms are located near the student's home and work places, the drop-out rates are lower under this format than for regular classroom-based schooling in Brazil as a whole. With the implementation of "Distance Learning in the Amazon Forest Project", Amazonas State has effectively been able to allow more efficient and constant provision of secondary level programs to its population, increasing the breadth of education, through an education solution based on cost-effective drivers: large scale, low cost and quality of learning.

This was made possible because the satellite platform incorporates measurement and reporting capabilities and reports on consumption and interaction duration, which empowers the faculty to focus on weak links. Managed integration between the satellite platform, the assessment module and the LMS ensures that all assessments are recorded and reported upon. It also incorporates a specially designed module for conducting exams and assessment online. Besides this application of written tests by the mediator/monitor at the distributed classrooms, the software allows teachers to apply a range of different kind of evaluation tests, such as multiple choice, brief answer, match the column, yes/no, true/false, fill in the blanks, and so on. The interactive aspect of live classroom allows subjects to be learned rapidly, with a high level of retention.

Finally, we list here the key results achieved by the Amazonas State Department of Education through the satellite platform: learners are able to attend to secondary level education without leaving their families and communities; centralized management of content with quick updates thus ensuring that the most recent content is always available to the learners; it provides both synchronous and asynchronous consumption of training and course materials; country-wide live education delivery, training and collaboration; audio & video-based learning enhances the faculty's capabilities and learner's attention; and significant saving on education and training costs.

Regarding costs, as a government project, the service is free of charge for the learners. However, taking into account the overall costs, the Amazonas State government would have incurred to maintain local schools offering all levels for mid level education courses, including competitive salaries to teachers to retain them at remote venues with limited communications (and electricity via generator), the present classes distributed via satellite transmission definitely reduces the overall cost of education for the learners. In terms of costs from the learner side, this format allows students to attend further levels of education without the additional cost of travelling and housing in cities where these courses are taught through regular classroom-based teaching.

The satellite platform has centralized system architecture. That helped to bring together a significant cost saving and an easy management. Additionally, the solution is ROI (return over investment) positive, taking into account all the cost savings generated by the system.

Today this model of education is a reference in Brazil and all over the world as it can be employed on a statewide or global basis. In fact, the satellite company has implemented the same technical solution for Departments of Education of other Brazilian States in Brazil, as well as in India. Beyond that, it was awarded by Qatar Foundation of Education in the usage of communication technologies for education and there is a short web documentary available on the following link: <http://www.wise-qatar.org/en/laureats/Distance+Learning+in+the+Amazon+Forest/Webdocumentary>.

Conclusion

When we analyze the referred project from the educommunication point of view, it is possible to understand the importance of planning the communication processes management of an education project in order to reach the goals. We can notice that efficacy of projects lies on its whole infra-structure, though mainly on the management of all the communication processes as the pedagogical coordinators and specialist teachers who planned the classes, as well as the generalist teachers who can give suggestions on the activities adopted after the implementation of them, in order to have them adjusted or simply cancelled, depending on the results reached.

The most impressive outcome is that, in the beginning, the government officials just wanted to deliver a good quality education to all rural communities of the state, even though it was an education built upon the industrial model. However, along with the lesson development and implementation, they understood that quality was dependent of the way they define the communication procedures, what made them rethink the entire process from this premise and, therefore, has made them to revise their whole production process, in order to provide a good quality education with high communicational interaction and investing on a dynamics focused on the development of dialogue on the topics studied.

Finally, one thing that calls our attention, as we reflect on the use of communication technologies in educational spaces from the perspective of communication processes, is not just how submissive the learners can be, but also how educators are used to simply transfer information without communicate with learners, without stimulating the exchange of arguments on the content facing to the learner's previous experience, without motivating the dialogue and the critical thinking about a subject. It is very important that all the teachers – specialists and generalists – attend to a course on ways to be a dialogue mediator making use of new technologies, for increasing the exchange of arguments. That makes us think of how this is

necessary not only for educators who teach at distance education model, but also for those who are teaching at the classroom based model and make use of this tools, too.

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Learning in Digital Media; the Legacy of McLuhan and his Impact on Formal Education

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1. Introduction

The works of McLuhan have a continuing influence upon academia and it is enough to substitute “electronic media” by “digital media” in his work so that his conclusions are still valid. Today, the education system faces an explosion of information and knowledge and a distribution of social knowledge, but also faces a fight for changing the linear speech and the frame normalized of formal technicians. This is the inheritance that is being left to the students; a legacy where the formal surroundings of education generate evaluation systems with standard criteria that legitimate the knowledge but that punish more than stimulate the creativity of the student.

McLuhan was able to anticipate the inexorable transit to a new age, which some texts named as the “Information Age”, and also anticipated that education, amongst other things, would transform adopting technologies of electronic communication. These works were criticized in their time [14], and today also we can find critics on the use of technologies in the learning process, an example is the International Center of Research for the Development [12] that mentions the need to surpass this magic vision that the introduction of technologies improves education by itself. Díaz A. [9] bases his criticisms on the risks of implementing transformations that do not have a conceptual or strategic basis.

For education to adopt new communication technologies a paradigm change is required, that reflects not only modifications on a methodological level, but it also changes the culture and the organization of education itself. During the 80s, attention was given to the needs of teachers; in the 90s the attention was given to the interaction, now however this decade requires a pronouncement on the effects that bring new technologies in the learning system and the organization of the formal surroundings of education.

This era has promoted an educational reform (definitely, most of the time) in which the students are no longer passive, but they choose innovative and interactive learning methodologies, in accordance with the contemporary theories of education, we could mention like an example the use of platforms such as Facebook, Slidshare or YouTube. The majority of these methodologies are a complement to the traditional classroom, or they work as a product of special projects that function outside the organization of the normalized school, but still have not been integrated on the organization of the education on a big scale.

If the technology is going to play a very important role in other ways in which we learn, then it would be important to pay more attention to the way institutions use these technologies, also, it would be important to take care of teachers on their role as managers of educational technology into use, and not only like creators of content. If an investment of

infrastructure is made (hardware, software, connectivity), then it would be necessary to realize in a parallel way, diverse proposals for the infrastructure (contents, connection networks), for the management (sustainability, impact evaluation, operation), without forgetting the info-culture (digital literacy, collaboration, participation).

The use of the technologies should not be studied as a world far away of education, since their use generates new forms of informal learning, social expression and new ways to perceive reality. The "Lifelong Learning" establishes that it is necessary to recognize the value of this informal learning and for this, it is necessary to create mechanisms that help to validate this invisible knowledge which is not certified. Developed countries such as France promote its development [31], and some formal qualification systems like Cedefop, already advance in its accreditation.

In this paper, we carry out a bibliographic analysis on the vision of Marshal McLuhan and the vision adopted by diverse current authors regarding the use of the new interactive learning technologies. The paper also analyzes the transformation that the formal surroundings of education will have to undergo. The conclusions show us that the technologies open new possibilities of language and expression, and that technological advances have an impact necessarily on the social institutions that precede them, and therefore these entities have to study the way in that these new technologies need to be integrated into their educational work (proposals no only of investment of infrastructure) in order to improve their social function. This change could mean a reward for the students, and in the words of McLuhan "The citizens of the future ... they will be rewarded by their diversity and by their originality" [32].

2. The legacy of McLuhan

The ideas of McLuhan concerning the effects of the technologies of communication were inspired partially, by the work of Harold Innis (1894 - 1952). Harold Innis [18] argued which ones were the particular qualities of the technologies of communication and that the promotion of a technological invention can give place to the fall of a form of social organization. He also wrote that the technologies of communication have a central role in the creation of the human societies, since they affect to the flow or control of information, and he studied the properties and dominant ways of communication, his effects in human interaction and in social structures of power.

McLuhan [25] insisted on understanding the importance of the technological changes aside from opinions: «The effects of technology are not produced to the level of opinions or concepts, but they modify the sensory indexes, or guidelines of perception, regularly and without finding resistance». The city as a classroom (that regrettably did not have the attention that the educators wanted it to have) marked a clear aim; to sharpen the perception of the secondary school student about the cities where they live, and therefore mitigate the effects that the electronic life could have on them. McLuhan wanted young students to be more able to explore their surroundings find clues that enables them to better understand the nature of the contemporary world¹²⁰.

120 Letter from McLuhan to Elsie McLuhan, dated november 1952 in the book by Matie Molinaro, Corinne McLuhan y William Toye (eds). Letters of Marshall McLuhan, Toronto. Oxford University Press. 1987. p. 233

New generations are in a world where digital communications have a main role in his training and in the understanding of reality. Studies, like "Observatory of tendencies"¹²¹ show precisely the habits of a digital born generation. This study was carried by Nokia and the consultancy CONECTA over two years and was initiated in 2010. Six further studies have been added that describe with his results the relation of the young adults with technology. Those born in the digital age of between 15 and 18 years, use currently social networks, chats and blogs without limit. They employ all type of devices to store information. All this without forgetting the constant exchange of archives through internet or bluetooth, which gives them the ability to obtain all types of information.

The computer is a basic element in the life of the digital generation. McLuhan [26] already mentioned in his writings the computer like an instrument more of electronic fixation of the information. His book of 1962 discusses the electronic interdependence that re-creates the world of a global village and states the following: «Instead to evolution toward an enormous library of Alexandria, the world has turned into a computer, an electronic brain, exactly like a story of science fiction for children». He later made us a premonition that today is a reality; the "Internet Galaxy" of Manuel Castells [3]: «the computer keeps the promise of technologically creating a state of understanding and universal unit, a state of absorption in the logos that can join humanity in a family».

3. Digital Media on Formal Education

One of the characteristics of traditional education is the predominance of the printed media, and this was the case until a few years ago. McLuhan and Leonard [27] already they referred to this: «In an age when even such staid institutions as banks and insurance companies have been altered almost beyond recognition, today's typical classroom - in physical layout, method and content of instruction - still resembles the classroom of 30 or more years ago».

The organization of modern schools based in grouping the students according to their age and/or capacity, according to knowledge, thematic area and level of difficulty, reflects the same visual logic that is used in printed media: it is linear and hierarchical. Some of the structures used by formal institutions and that reflect this logic are [22]:

- Students grouped by age.
- Knowledge grouped in disciplines and/or subjects.
- Periods of time allocated to a particular subject matter or limiting access to subjects without having studied another.
- Subject matter is divided in parts and levels of difficulty.
- Classrooms designed for the education of masses and directed by the professor.
- The students work individually and in a competitive way.
- The hierarchical structure of knowledge in fields limiting the horizontal movement between subjects.

121 "4to Observatorio Tendencias." Continuous observation concerning technology and mobile related perceptions, attitudes, habits and demands of adolescents and adults aged between 15 & 35. Study carried out by CONECTA. <http://es.scribd.com/doc/25839000/4-Observatorio-Tendencias-FINAL>

- The movement of students in the classroom and the communication between students is limited.
- Education based in projects or in studies of cases is not compatible with the available physical areas for the student.

This linear logic is based upon a standardized system and regulated in agreement with some formal and technical guidelines that teachers have to follow. Otherwise, this could lead to a lack of credibility in the new forms to produce the knowledge or result in a less rigorous system. In the case of the students, without the widest possible standardization, they run the risk of not attaining the school aims. Those that attain them are not necessarily the strongest, but those that have adapted to the predominant paradigm, and not to the educational system or to the educational curriculum. This is the legacy that must not be taken away from the university careers, in which at present there are some standard criteria that are those that legitimize the knowledge.

McLuhan predicted that the structures and roles of the traditional school would transform, accepting increasingly the logic of the electronic communication. This can translate in to a situation where the current structure would have to include the integration of mixed age classes, the learning organized around the approach and resolution of problems, and in the learning based in projects. This would be the beginning and tasks of multidisciplinary investigation, flexible organization for the students and his time, and especially, classrooms designed to exert the interaction should be included.

McLuhan and Leonard [27] describe: «New educational devices, though important, are not as central to tomorrow's schooling as are new roles for student and teacher. Citizens of the future will find much less need for sameness of function or vision. To the contrary, they will be rewarded for diversity and originality. Therefore, any real or imagined need for standardized classroom presentation may rapidly fade; the very first casualty of the present-day school system may well be the whole business of teacher-led instruction as we know it».

In the literature review, criticisms can be found concerning the use of technologies in the learning [12]. The International Center of Investigations for the Development, mentions for example the need to surpass this magic vision that the introduction of technologies improves education by itself, while Díaz [9] directs his critique at the risk of implementing transformations that are not accompanied by conceptual and strategic frames.

The introduction of technologies or new devices in education although important, are not so for education as much as the new roles of the student and of the professor. Without a change in the roles, the introduction of the technology, massive as it has done up to now, ends up generating an ineffective repetition of the pre-existing situation simply expanded by the technological media.

If we concentrate on the review of Juliane Linch [22], the qualities that have to reflect a new logic in the roles, include the following activities:

1. The teachers have to facilitate the location and understanding of the multidisciplinary information.
2. The distinctions between teacher, professor, tutor and/or administrator have to disappear.
3. The students have to be free to move around the buildings and school.
4. The communication between the students has to be promoted and maximized.

5. The students have to participate directly in the solution of real problems.
6. The students have to work in a cooperative way.

McLuhan himself reflects on the media and technologies, referring to his linguistic fundamental structure. In addition, Bruce Powers, professor of the University of Niágara and a recognized expert in the area of the technologies of communication, reflect on the subject, referring to the media and the technologies: Not only are they like language, if not that in its essential form, are language whose origin comes from the capacity of man to extend himself through his senses to the part that surrounds it [28].

4. The current vision of learning via digital media

The reforms resulting from contemporary theories, the predictions of diverse authors on education, and the effects noticed by researchers, are ideas near to the vision promoted by McLuhan, who discovered this phenomenon. He discovered the way in which technology changes man and vice versa and redefines them in a bidirectional unfinished movement [21]. For example, Cornu [6] wrote about the integration of technology as a process that transforms the organization of the school at all levels.

Diverse authors have expressed the opinion that the application of new technologies in formal educational institutions goes hand in hand with the reform of the functions and structures of the education. Duchateau [11] maintains that allowing students to work in a group represents a valuable opportunity for inter and multi disciplined activities that are not limited by borders of the subject. The interpretation is that subjects would no longer be grouped in future, reflecting that the main aim of the education is turning into the act of learning in general.

In his review on the effects of information technology on education and learning, Toomey [36] observes that diverse reports identify information technology as a cause of reform in the school system, and concludes that the strategic introduction of technology in schools could become daily practice.

The Group US Panel on Educational Technology [1] argued that the true promise of the use of technology in education is its potential to facilitate fundamental and qualitative changes in the nature of learning. Pierson [33] finds that the skills of the professors, technology and pedagogical strategies, are all important in the determination of how education integrates with information technology on a daily basis. Therefore, if it is required that professors succeed to integrate information technology in their teaching, in addition to ensuring that they have the opportunity to develop knowledge and pertinent skills, is important to foresee the opportunities for the continuous development of the pedagogical capacity in general.

All these visions of education and the role of new technologies, amongst other things, show that the majority of researchers have studied whether the secondary effects of the integration of technologies are coherent with the predictions of the changes in the organization of education. There are also some publications that question the structures and traditional functions of schooling. These include: Commission of the European Communities [5], Crawford [7], Hawkins [17], Knupfer [20], and UK Department of Education & Skills [37].

There is no doubt that the introduction of information technology and the modification

of the education system are taking place. Examples such as the project initiated by Bill Clinton in 1996 (the report *Getting America's Students Ready for the 21st Century, Meeting the Technology Literacy Challenge*¹²², describes it) and project 1X1 implemented in Spain in 2009 by the Spanish government, demonstrate a change, although not with the planned rapidity and scope. This can be attributed to institutions keeping their traditional strategies and a lack of understanding concerning the challenge and opportunities that the technology can offer.

It is necessary to take advantage of these movements to create customized new learning surroundings, able to articulate all the dimensions and anchorages of previous learning methodologies and generate others [10]. Web 2.0 already has allowed the generation of diverse methodologies of learning and new options of the use of the free tools. Facebook, Twitter, YouTube, Second Life are examples of this. As a result of the joint work of hundreds of professors, the base of digital pedagogy is beginning to take shape [2], [34]. They are no longer the odd virtual ethnographies and studies and can be found in common use [35], [24], [38]. The most significant changes take place in the knowledge communities of because they represent new forms of collaboration and participation and create a new perspective for digital natives.

These publications show the vision of McLuhan and his influence, however, other ideas can be found regarding the interaction of the technologies with the institutionalized structures and its functions. Furlong, Facer and Sutherland [13], state that the way technologies are becoming part of daily life has been much more complex than initially planned.

In the investigations, the technology is often described with an approach in which the roles of professors and students require of real modifications in their relation and in the exchange of information and experience. Games, for example, represent a format of instruction similar to immersion [29] and some educational surroundings provide complex relations and rich experiences that the traditional educational system does not provide.

In the report *School innovation: Pathway to the knowledge society*, Cuttance [8] carried out a review in twenty schools and showed a split between learning in the school and the learning outside the classroom due to changes in the school calendar and changes in the physical surroundings of the classroom. It concludes that, "the experiences of the schools that have treated to integrate information technology in its learning environment in the last decade, indicate clearly the need for other compatible changes".

It is therefore the moment to transform the role of teachers as managers of technology used and not only simply creators of content. It is the moment to look for experiences that enrich learning and generate personalized learning surroundings in addition to promoting a real reform in the function and structure of education. What could involve the transformation of subjects that, until now, have been grouped as we know them to be, and succeed in transforming education into understanding how to learn rather than just memorizing a traditional subject.

122 Getting America's Students Ready for the 21th Century, Meeting the Technology Literacy Challenge. <http://www.ed.gov/about/offices/list/os/technology/plan/national/index.html>

5. Conclusions

The points of view of the contemporary authors on the effects of technologies of communication in education reflect the influence of the already adopted ideas previously put forward by Marshall McLuhan in the years 1950 and 1960. His contributions confirm the effects of the introduction of technologies in the development of new societies, and verify the need to modify the operational procedures of educational institutions, as well as the form in which individuals relate to one other and learn.

As a conclusion, the main points of view and contributions of diverse authors are grouped and described. They should be taken into account in future by all the actors involved in formal education.

a) Digital Media: An Opportunity to Change the Organization of Education.

Digital media have impacted social institutions that precede them, and therefore these entities have to study the way that the new technologies have to be integrated in teaching. This pressure creates new rules in which digital media have to form part of education, and thus the use of the technologies has to be studied as part of education due of its importance. This also needs to be seen from a transversal critical and integrated perspective. Schooling is often seen in forms that reflect the tribal logic of these technologies, however, the realization of this logic consists in practices, structures and functions that are incongruous with the institutions of education. The transition of an education that reflects the logic of the impression supposes a major change, but not only in the implementation of the technology, but it also requires changes in the culture and the organization of education. As stated by Cobo [4], if an investment is made to create infrastructure (hardware, software, connectivity), there would have to exist diverse proposals for its use (contents, networks of exchange), for the management (sustainability, evaluation of impact, operation), without forgetting to the info-culture (digital literacy, collaboration, participation). Other authors like Duchateau [11], Toomey [36], Cornu [6], LabCom [21], and Becker and Ravitz [1] agree that the technology is a door to change the organization of education.

b) The New Role of Education

Juliane Linch [22], Nokia and CONECTA [30], Pierson [33], Commission of the European Communities [5], Crawford [7], Hawkins [17], Knupfer [20], UK Department of Education & Skills [37] mention the importance of modifying the current roles. What matters are neither the contents nor the media that bear them, but the structure of the space in which the student takes control, splitting of some strategic notions of the teacher. In this situation, the teacher renounces the role of being only actor in possession of the knowledge and yielding space to the student. In the era of internet, a vertical transmission of the information and control of power. When new roles between professor and student are created, the taking of decisions becomes decentralized and contributes to generate new profiles of students. This will create leaders of projects, creators of documentation or perhaps a community manager. Therefore, the change of the role of the professor will allow the implementation of strategies

that promote the auto learning on a day to day basis and learning based in problems and/or collaborative learning.

“Lifelong Learning” establishes that it is necessary to recognize the value of the informal learning [23] and although the mechanisms have not been created that would help to validate this knowledge and certify it, is strategic to promote the change of roles. The aim would be that in the future it is possible to create these mechanisms to validate knowledge that has not been learned in the classroom. Recognize the strategic value of the knowledge obtained in an informal manner, is a pending task of formal education, but is necessary to begin the transformation from down upwards, changing the current roles of the education.

c) Innovative and Interactive Methodologies

Technology has been used to deliver content, in other words, the message of modern education. This means that new technologies open up new possibilities of language and expression, and champion a new form to carry the educational reform by innovative uses of media that are consistent with the contemporary theories of education [22]. With this, the students stop being passive, and opt for methodologies of innovative and interactive learning. The use of innovative and interactive methodologies does not mean to use alternative methodologies instead of the traditional method. Instead, it tries to develop competitions between teachers and students so that there is a more dynamic role, using sources of current varied and motivating information and a definite, interactive and cooperative methodology of work [15].

The conclusions show us that technological advances have an impact necessarily on the social institutions that precede them, and therefore these entities have to study the way to incorporate them into their educational work in order to improve their social function. It is important to introduce modifications on a methodological level, but it is important not to forget that technological advances change the culture and the organization of education itself. It is necessary to invest in infrastructure (hardware, software, connectivity), but also it would be necessary to realize in a parallel way, diverse proposals for the infrastructure (contents, connection networks), for the management (sustainability, impact evaluation, operation), without forgetting the info-culture (digital literacy, collaboration, participation).

In summary, technology has to integrate entirely with the organization of the education and become a complement of the traditional classroom or has to be integrated as a special product from outside of the organization of the normal school. If the technologies are to play an important role in the transformation of the way schools are seen and conceived, then the institutions have to promote the use of these technologies in order to be able to improve its social function. The development of the native digital generation will definitively have a very strong influence over the course of education, which undergoes radical transformations in institutions. More value will be given to anything that wakes up interest in this generation of much more demanding consumers and citizens who are better informed [19]. The capacity to carry out multiple tasks represents a distinctive characteristic of this generation. The systems of current formal education will, not without difficulty, achieve to call the attention of individuals that understand the possibility to transform education into being much more interactive, dynamic and of course, motivating.

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Educational aspects of the use of internet and mobile phones by migrants in Barcelona and Ciudad Juárez

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1. Introduction

Marshall McLuhan stated that all means of communication are extensions of our own bodies. In our own individual spectrum of experience, every time that a part of our body is enhanced, such as when we start to use lenses to see better, reality changes. Thus, with every new advance in communication technology there are new ways for perceiving reality [1].

Migrants from poor countries decide to migrate to wealthier nations based on a variety of reasons. From all those possible reasons, economic motivations are the most common factor for mobilization. The illusion of improving their quality of life makes migrants endure severe circumstances that many of us would not tolerate. They cross the Atlantic on boats that carry people twice their capacity, or they arrive at the Mexico-USA border from rural areas in southern provinces of Mexico¹²³, with no more than a few dollars in their pockets, a bag with few clothes and a debt of several thousand dollars to *coyotes*, human traffickers. Their illusion of achieving the *American dream* or a European standard of living does not reflect reality, most of the time, and disappointment becomes common ground in most cases.

Associated to this, migrants move to far-away countries because the image they previously get about such places came from movies, television, word of mouth by friends and relatives already living there, and by information gathered using new information and communication technologies (ICTs), such as the Internet and mobile phones. Most studies on the digital divide have focused on quantitative measures of who has access and who does not, on the number of Internet users by country, and on their demographic characteristics [2].

However, information on the use of Internet and other ICTs by migrants is scarce in comparison to data gathered from non-immigrant populations. There is little knowledge on what are the effects and the affects related to the everyday use of new ICTs. Neither that use is systematically gathered, nor their use of metaphors in order to incorporate the new technologies into their daily routines and efforts to get a new life. By studying the metaphors used in approaching the use of ICTs, we are trying to understand the role of the new technologies in

123 Many migrants to Ciudad Juarez arrive from southern provinces, such as Oaxaca, Veracruz or Chiapas, and in less numbers, from Central America, from countries such as El Salvador or Honduras.

the development of the migratory experience in two different settings. The first location is the Spanish city of Barcelona, where African immigrants, both recently arrived and years-old residents were interviewed regarding their travel experience and their perceptions, representations and use toward the ICTs that either accompanied them or that they adopted upon arrival to their new society. The second locality in which data has been collected is Ciudad Juarez, a city of 1.3 million people that borders with the United States. The main economical activity in Juarez is the assembly of automotive and machinery parts, known as *maquiladora*, in which about 100 thousand people work. Many people migrate from southern provinces, and many attempt to cross to the United States. A fraction of these people prefer to stay in Juarez and find a job in the maquiladora industry [3].

The media industry in both cities, regarding both Internet and cell phones, is dominated by a few companies. Costs for the service are high in both countries, but in Mexico especially so. Monopolies exist that do not allow fair competition, thus controlling prices and access. However, most maquiladora workers seem to carry a cell phone, and many of the migrants interviewed in Barcelona were acquainted with such technology and with Internet. The approach followed in this research was to interview as many participants as possible in naturalistic settings and to gather information, transcribing it and analyzing it with Atlas.ti, creating categories until saturations was achieved, thus allowing for what Glaser [4] describes as a grounded theory model of inquiry. This paper presents some of these findings. Further inquiries should be made to Jesús René Luna-Hernández at jeluna@uacj.mx

2. State of the question

Contemporary migration is deeply embedded with new technologies. Governments use computerized tracking of people to control their borders, and regulations on migration issues are available to anyone with has access to a computer. If we want to move to a new country, either to live in or just for a visit, we can gather as much information as possible about the new place, information about rules, norms, customs and traditions. McLuhan's work remind us that there have been times in human history in which language, in its oral form, was predominant and highly influential for the way that people related to each other. Most of the members of a community did not dominated reading or writing abilities, thus relying in what they could remember and enhance from histories and oral traditions they could obtain from previous generations. There was a sense of knowing each other that created a communal/tribal way of interacting. Almost everybody knew each other.

Once publishing and typography became common, and the reproduction of books and printed material was as common as bread, social relations began to fragment and evolve into new forms of inter-actions. Individualism was supported by the fact that the book was a tool being used by one individual at a time. The reader could isolate him or herself from others, create and live in their own subjective worlds. Science was acquired by many in the form of a compressed package called book. Self-expression was also the rule, since a book was a piece of artistry that could be associated to a specific producer, the author [5]. Men and women could at the same time be isolated and be revolutionary by means of reading a book. Reading and producing books created a new way of life, created cities and virtual interactions. It dislocated the communal feeling of knowing each other, allowing for a substantive increase

in the power of isolation. However, and as McLuhan has pointed out, the electronic means of communication have taken us to a full-circle: just by looking at a screen I can gather information, both vital and superfluous, from friends, family, peers and celebrities, people who I have talked to and people who don't exist anymore. The global village exists in every corner of the world right now. This is the case especially when Internet is involved.

Such a metaphor is useful in the effort of understanding how and where does people interact. Lakoff and Johnson [6] define basic conceptual metaphors as "part of the common conceptual apparatus shared by members of a culture." [7]. Metaphors serve as connections between concepts that are familiar to those that are unknown. For instance, when we say that "Discussions are War" we are not meaning that all debates and discussions are violent by themselves, but that they share some commonalities with the activity of war, such as that they include tactics, strategies and knowledge of weak points in the adversary. Thus, in our research we are interested in finding instances of metaphors used by migrants to understand their connection to ICTs, to explore and explain their use in everyday situations, as well as in their migratory experience. We focus on some interviews and we present quotations as they were given by the participants, as well as a network of the most prominent concepts discovered by the analysis. So, the main questions of our investigation are ¿what are the uses migrants make of ICTs? ¿what is the role of educational activities and approached to the use of ICTs? ¿what environmental factors could be influencing the perceptions and representations of ICTs in the migrant's lives?

We think that the grounded theory approach to the analysis of metaphorical, educational and everyday actions regarding the use of ICTs by personas who have relocated and who are adjusting to new setting and experiences related to what McLuhan calls the global village. Such a village would allow people to obtain information in a more rapid and effective way than in previous or different settings, however, if people are not optimally integrated to such dynamics of global-village life, they would tend to be systematically excluded from the best opportunities to advance, thus failing in achieving their aspirations.

3. Contribution

This paper is an effort to gather information about the experience of migrating to a new place, the interaction of such experience with new technologies, and the influences of earlier issues of formal and non-formal education for the use of TICs in everyday life by people who have moved from rural areas or small cities to the cities of Barcelona, Spain, and Ciudad Juarez, Mexico.

To accomplish this task, interviews were conducted to eight migrants from African nations currently residing in Barcelona, Spain, and to fifteen migrants from southern states in Mexico, residents of Ciudad Juarez for the last one to five years.

3.1 The role of ICTs in the migrant experience

To answer the first questions proposed before, we present quotes from African migrants first, and then from Mexican migrants.

Ada, an African migrant from Ghana answers to the questions about the role of ICTs in the experience of migration:

"eh no, that it got nothing to do with my decision as coming here"

However, later in the interview he says that his curiosity for aspects of political life in the USA had some weight in his decision to go to Europe as a gate to the USA:

"in the Internet they were happened to go to the Internet I always should read the stories about the USA", "I use Internet mostly, to read (4.3) well affairs, yeah, well affairs, see what is going on in Africa, what is going on (.) in Europe, what is going on in America".

Migrants in Ciudad Juarez expressed that the Internet actually had nothing to do with their decision to migrate, that it was more of a word-of-mouth situation, by means of talking through cell phone calls to family members who had already moved to Juarez.

3.2 The role of education and Internet use in everyday life

For African migrants, the way in which they learned about the use of Internet and cells phone is mainly self-directed:

"in our schools no, I never eh, I never learned in school, I have to learned in, I have to learn it privately" – Ada, Ghana

"I was studying with catholic sisters, so::: it was frequent for us and we have anything at our disposal anytime we want, so from my tender ages from three to four years they started to bring me up with the Internet so, I started with Internet when I was a little child, from my nurseries" – Babbie, from Ghana

Mexican migrants had this to say:

"ahí lo aprendí ahí, yo solo (I learned it by myself, alone)" – Jaime, Veracruz

"porque no había todavía ni secundaria, o sea, telesecundaria había en la cabecera municipal, y el bachillerato apenas lo estaban abriendo (because there was no secondary school yet, well, tele-secondary, open-access school, was available at the center of the district, and high school was about to open)". – Ezequiel, Veracruz

"aquí le llamabamos cibercafé, y allá si lo checábamos, más o menos fue como en el noventa::y nueve, más o menos cuando empecé a usar la, el Internet y a meterme en todo ese show, a partir de ahí ya empecé a familiarizarme más con lo que eran los correos electrónicos (here we called them cibershops, and it was there that we checked it, more so in the late nineties, it was when I started to use Internet and to get into that show, it was from there that I began to familiarize myself with email)" –Ezequiel, Veracruz

Some of the interviewees expressed a kind of tecnophobia: "Q: Te pusieron:: fobia a la computadora? (did they gave you a kind of phobia?)

A: Si porque no no me enseñaron =bien (yes, because they did not taught me well)" – Anel, 14, Veracruz

“y este y pues nada mas me ponían enfrente de la computadora pero pos ni me decían muevele aquí y no apachurrare aquí y así (they only sat me in front of a computer and told me to move this and that, push this and that’s it)” – Javier, Veracruz

3.3 The perceived use of Internet and cell phones

African migrants expressed that the Internet was of a relational nature, more than Mexicans:

“and in the Internet, youc, you create friends! yeah, and (.) just one day you create relationships with different people never seen, never known before” – Nama, Mali
“I’m in touch with the Internet” – Ada, Ghana

They also considered Internet as something that could save money:

“Internet is less costful than telephone” –Ada, Ghana

For Mexican migrants, the Internet seems to be more like a database than a connection to others:

“pues la verdad que para tema de la universidad, yo:: particularmente ya los libros si iba a última instancia, si no lo conseguía en Internet pues me iba a los libros (to tell you the truth, for the university I, particularly the books, just as a last resource, If I could not get the information on the Internet then I would go to books)” -Ezequiel, Veracruz
“puede encontrar cualquier cosa ahí para, puede ser tareas, investigación, y deportes, o, así de los famosos (you can find anything there, it could be homeworks, research, sports or staff about the famous)” – Jaime, Veracruz.
“Y pues también para hacer trabajos, algo así no? (¿it is also used to make homework, isn’t it?)” – Anel, Veracruz.

In a metaphorical sense, some of the participants expressed that the Internet was:

“maravilloso mundo del Internet, que prácticamente es el mejor medio de, la mejor vía de entrar al mundo (a wonderful world of Internet, which is practically the best means, the best road to enter the world)” – Ezequiel, Veracruz
“imagínate que Internet es un, un librero grandísimo no? (Imagine that Internet is a very big bookshelf)” – César, Perú

3.4 Network representations of main concepts

The following figure was produced with Atlas.ti after the codification of the interviews and the generation of categories that represented the perceived role of education and several external factors on Internet use. As we can see, Internet use is related to education in that the latter is necessary for an optimal use of Internet. Regular school, though, is not perceived as a reliable source of knowledge for using a computer and its resources. Mainly in African

respondents the use of Internet was conditioned to the availability of resources, money for that matter.

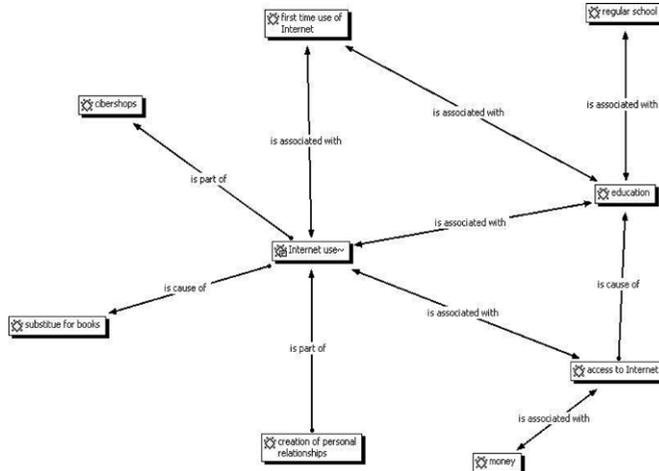


Fig. 3. A network representation of the role of education in Internet use by migrants.

Internet use was related in both groups to the availability of specialized places called *ciber-cafés* or cibershops, where they could rent a computer for limited time, thus being able to stay in touch with friends and family, and making new friends, creating new relationships.

4. Conclusion

The perceived use and functions of Internet and cell phone in everyday life differs in both African and Mexican migrants. Their setting differ in that Mexican migrants from the southern states of Mexico may have more human capital and social support resources than African migrants in Barcelona. Also, since Ciudad Juarez had, at least until the beginning of this research, the capacity for providing employment to those just recently arrived, the perceived use of Internet is more recreational and more focused on finding information for school or job –related activities. For Africans, the Internet provides a cheap way for staying in contact with their families and friends. Also, it is, in a limited form, perceived as a source of social support, since new friends can be made by getting into social networks and web pages that specialize in creating personal contacts.

One issue that needs to be considered by looking at these results is that in most cases the participants who saw Internet as a resource of information useful to accomplish tasks such as homework or job-related inquiries expressed little or null creativity, saying only that they delivered the information as-found in the Web, sometimes modifying only what their teacher or tutor would recommend. This is a very extended practice that we have documented elsewhere, and which is generalized in Mexico at all levels of education.

It is interesting to note that some of the Mexican participants refer to mobile phones

as an edgy technology, because some have received threatening messages from members of organized crime trying to blackmail them or asking them for “protection” money. None of the interviewees mention that such electronic devices could help them with security issues by allowing them to get in touch with authorities. Further analysis of the interviews allow for the construction of a theoretical perspective on communication dynamics in the migratory process. We have presented just a fraction of the information and categories that we have found, but we hope that this could represent the beginning of what McLuhan notice as an awareness of the needs of everyone, regardless of where we come from or where we are.

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Digital Competencies for Journalists

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1. Introduction

In his book *Understanding Media: The Extensions of Man*,¹²⁴ McLuhan develops the idea of the emergence of a new man and a new society, marked by the invention of the light bulb.

For McLuhan, the light bulb did not only illuminate our actions, but it also changed the landscape and human actions by allowing us to conquer darkness, and as a result, act independently of the dictates of nature.

In this new electrical society that evolved over the past century, the human being became a visual being, dominated by television.

In McLuhan's terms, if electricity travelled through the human nervous system, the binary language would be present in each person's DNA.

The appearance of Web 2.0 brought consequences that go beyond those created by social networks or the Internet. Web 2.0 is a paradigm shift in terms of the way an audience functions, and therefore mass media itself.

Transforms both mass media and audiences. There is no longer a clear difference between the sender and the receiver.

More than an ethereal body, supposedly represented by journalists and other media professionals, the audience has become its own reality, making its opinion known and acting directly, not merely through the media. It is an active audience, generating pressure groups, boycotting, blocking highways and even rendering governments powerless, as recently occurred in Chile in January in Punta Arenas, when it was announced that gas tariffs would rise.

Just weeks before, the government of Evo Morales in Bolivia experienced a similar situation when he attempted to raise the price of fuel.

Just as audiences are no longer what they used to be, the same is happening with the media. Today, to read a newspaper one no longer needs the paper; to listen to the radio, one no longer needs the apparatus; to watch television, it is now possible to connect to the Internet. Mass media has been transformed into platforms.

If one of McLuhan's most famous lines was that *the medium is the message*, we are now facing a scenario in which the medium acquires independence from the message and in which the flow of messages is outside the sphere of editorial control by communication professionals and cultural industries.

But the principal change goes beyond the concept of a platform, though associated with it. Due to these changes, the form in which the audience consumes mass media has mutated from a passive stance to an active one.

At the same time, the concept of public opinion is disassociated from the limits estab-

lished for it by communication scholars in the 20th Century. The events of Egypt in early 2011 are yet another example that suggest that public opinion is no longer an abstraction functioning under the parameters of agenda setting, according to McCombs. It became something real, tangible, and it no longer needs traditional mass media such as the press, radio and television to set the news agenda for them.

These are phenomena in which the effect of the news agenda has been inverted by 180 degrees. The news agenda rose from the people and from there it became a media topic. The media organizations themselves could not anticipate the true magnitude of events like these.

These changes in the concepts of audience and public opinion make it necessary to re-think the concept of the media.

The success of social networks such as Twitter is just the tip of the iceberg of a phenomenon in which the audience becomes the media.

In this new scenario, the competencies required of journalism school graduates must be reconsidered.

The central objective of this article is to explore the competencies of a digital nature that should be required of journalism majors upon graduation. This concern is born of the multiple changes that have occurred of a cultural, political, economic, and communication nature and which have given way to the Information Society.

The underlying hypothesis is that the digital processing of information has modified work dynamics and the mind of the audience itself to such a point that it is necessary for the academic world to assume this new reality and train professionals who are able to respond to these demands of the market and new work environments.

Thus we will identify cognitive, procedural and behavioral competencies required to perform digital work that should guide the reformulation of academic programs for the field of journalism.

First we will address the topic of the Information Society in a summative manner, and then we will proceed with a detailed analysis of the digital natives and digital literacy.

2. The Information Society and Its Impact on Journalism

The phenomenon of the Information Society is a complex topic with many variables, concepts and problems. Castells states that the starting point for analyzing the revolution in information technology is its ability to penetrate all areas of human activity.¹²⁵

Journalism cannot escape the pervasive nature of ICT. In the press, digital technologies are present in each step of the information process, from reporting right through to the printing of the newspapers. Not only are texts written in a digital format, but the majority of reporting work is performed in this format. At the same time e-mail, chats, and video conferences have become legitimate means of conducting interviews. In addition, the Internet has been transformed into a huge database, available for obtaining information, facts and studies over a broad range of reports and chronicles.

The mass production and availability of cellular phones with 3G technology has revolu-

125 Castells, Manuel. *The Information Age: Economy, Society and Culture*. Vol. 1. La Sociedad Red. 1^a Ed. Alianza Editorial. Madrid, España. 1998. p. 31.

tionized the reporting process. Today the iPhone and the Blackberry both come with a video and digital camera, tape recorder, word processors, spreadsheets, email, instant messaging, video conferencing and broadband wireless connections to the Internet. According to Dan Gillmor, it has given rise to grassroots journalism, with all the accompanying pressures that it causes for traditional journalism.

According to this new format, the signal goes from the antenna of the television station to the viewer's apparatus. Because we are dealing with a digital format, the signal is transformed into information upon arriving at the television set. There it is processed as on any computer and a signal is returned to the television station containing a package of information.

With the Brazilian-Japanese format, it is possible to have consumption of low-demand television, teletext services, voting, purchases and online gaming. In this format, the television spectator is transformed into a user and the television station into a provider, thus putting an end to the model in which audiences were nothing more than inert masses under the control of the media.

In essence, what has changed is the form in which the information is gathered, processed and disseminated. According to Castells, it is there - in the gathering, processing and dissemination of information - where the bases of productivity and power are found.¹²⁶

The revolution caused by blogs, together with social networks and the phenomenon of Web 2.0, changed the way in which people access and disseminate information. The media are no longer able to monopolize information and it is once again part of the public domain, in the words of the Spanish scholar, José María Desantes.

The fact that the public has the same power as journalists and the mass media to investigate and disseminate information has given rise to what Jenkins calls the participatory culture.

Digital media is associated with wanting to make information known that is not part of the news agenda and that does not necessarily fulfill traditional criteria for news as defined by journalists and the media.

Not only do we have to consider the redrawing of the borders with traditional media (news, radio and television) but, perhaps more importantly, many of the editing and broadcasting tasks that were once the domain of highly qualified professionals, are now also performed by users with average knowledge or expertise in the field of computers.

Digital Natives

Before delving deeper, it is important to consider the changes that new generations have undergone as they are essential to understanding the issues we are addressing. We are referring here to the digital native's arrival on the scene.

As Eshet-Alkali and Amichai-Hamburger explain, digital literacy goes further than knowing how to use a computer program or digital device. It requires a range of competencies and skills such as cognitive, motoric, sociological, and emotional. All are required to perform well in the digital environment.¹²⁷

126 Op. cit. p. 47.

127 Eshet-Alkali, Yoram; Amichai-Hamburger, Yair. *Experiments in Digital Literacy. Cyberpsychology & Behavior*. Volume 7, Number 4, 2004.

While Castells pointed out that the Information Society was born as a result of the arrival of ICT, Prensky affirms that the cognitive structure of the mind of children and youth changed as a result of their early and intensive use of cellular phones, computers, videogames and other digital devices.¹²⁸

Based on this author's views, the digital divide has a cognitive origin. Therefore, to determine which digital competencies a journalist requires, it is necessary to understand the mind of a digital native.

The first person to speak of digital natives was the media magnate, Rupert Murdoch, when he stated that people under 30 years of age could not imagine their daily existence without ICT.

According to Harman, there is medical evidence that suggests that the intensive use of the ICTs has created in new generations a shift at the cognitive level as a result of the phenomenon known as neuroplasticity. Neuroplasticity refers to the ability of the human brain to change physically as a result of the stimulation that it receives from the environment.¹²⁹

Put in simpler terms, the way the brain is used determines its cognitive structure. As a result, people that use ICT heavily should develop a non-linear thought process. Based on this premise, Prensky points out that the Information Society is divided between digital natives and digital immigrants.

Immigrants are all those people that have, to a greater or lesser degree, logical thought processes, and who come from McLuhan's *Gutenberg Galaxy*.

Prensky explains that the digital natives process information in a very rapid manner since they operate simultaneously in two ways. They use parallel processes and multi-tasking. As a result, they appropriate information in a hypertextual manner.

At the same time they prefer to access information through graphic forms rather than through text. Another characteristic is that they function better when they work with interconnected networks. They are people that prefer games and they are characterized as preferring instant gratification and frequent compensation.¹³⁰

Prensky precisely defines which are the essential characteristics of a digital native. Among them he includes multi-tasking, hypertextuality and graphic language.

Spink and Cole affirm that multitasking is the ability for humans to manage various tasks simultaneously, and to move from one to the other with ease.¹³¹ Thus, a digital native can chat on MSN, browse the Internet, download a movie, listen to music on his MP3, and read a teen magazine all at the same time.

What is interesting here is that in order to develop attention spans, they must be doing more than one task at once, a situation that breaks with traditional logic that has reigned over classrooms since the Middle Ages. This lone fact should modify the majority of our pedagogical methods.

128 Prensky, Marc. *Digital Natives, Digital Immigrants: Part 1*, On the Horizon. MCB University Press. Vol. 9, Issue: 5. October 2001. p. 1.

129 Harman, Keith. *Learning Objects: Applications, implications & future directions*. Informing Science Press, publishing arm of the Informing Science Institute, California. 2007. P. 407.

130 Prensky, Marc. *Digital Natives, Digital Immigrants, Part II: ¿Do They Really Think Differently?* On the Horizon (MCB University Press, Vol. 9 No. 6, December 2001). P. 2.

131 Spink, Amanda; Cole, Charles. 2005, *A Multitasking Framework for Cognitive Information Retrieval*. Springer. P. 100.

As Jenkins states, it is necessary to work in parallel so that students can establish relationships. He proposes moving from a logical unit to one based on conceptual mapping.

Hypertextuality is a non-linear narrative form that abandons the structure of the story with a beginning, a middle and an end. The temporal sequence is replaced by a mosaic which, as Vilches points out, gives us time and space in one unit and whose objective is not to highlight the action, the story line, or the central conflict, but rather mental structures.¹³²

As a result, non-linear thinking puts aside traditional forms of saving and retrieving information, both physically and mentally.

The result of this is a new way of thinking with dynamic structures and in which the various nodes are interconnected, as Paul Barand stated when he created the idea that became the base for Internet today.

Without falling into technological determinism, non-linear thought logic copies the reticulated structure of the Internet, and it is governed by almost the same laws: the concept of a network.

It is an interconnected thought process, highly collaborative, that tends to disperse due to the lack of a central node. It is precisely there where its major strength and weakness simultaneously lie. Destructuring is useful to make connections and form creative thought patterns, but the digital native has difficulty concentrating on specific objects and tends to digress excessively on many occasions.

On the other hand, Eshet-Alkalai stresses the existence of a new language that has become universal for the digital native: the image.¹³³ This is more complex and goes beyond the fact that the primary experience of new generations is television and that they have media consumption rates that reach six hours a day.

They are designed to be able to access all functions through hypertext, which uses icons so that its use becomes intuitive. This means that it is not necessary to resort to a manual to use a graphic interface, and this is the reason that the digital natives are capable of almost immediately finding all the functions of a new cell phone.

Iconic thought goes further than knowing how to recognize a function within the interface of a digital device. When Sausurre wrote about the gap between the signifier and the signified, he was thinking of written signs, in terms of words like dog or tree and not in the form of figures. And when he referred to the signified, he used a drawing of a dog or a tree.

For a digital native, the inverse occurs. The signifier is the drawing and the signified is the word. Graphic designers who create the interfaces for web sites in banks have taken a leading role in defining this reality, to the point of developing what is referred to as emotional analysis. This is no more than the study of images, icons, colors and the position that these occupy so that the users develop a perception of confidence when they enter the website of a banking institution.

We are facing a new reality in which the image is no longer just an accessory or add on. The image is transformed into its own language with enormous communication potential and with a variety of nuances. This is why the quality of the image, the animation and the colors are all so important to the interface of operating systems.

132 Op. cit. p. 145.

133 Eshet-Alkalai, Yoram. *Digital Literacy: A Conceptual Framework for Survival Skills in the Digital Era*. Journal of Educational Multimedia and Hypermedia (2004) 13(1),93-106. P. 3.

3. Digital Literacy

Before elaborating upon the digital competencies that journalism graduates should possess, it is necessary to briefly focus on the world of digital literacy and, more specifically, on the work of Eshet-Alkalai and Jenkins.

These authors identified the competencies of the digital native. Though it is true that their research refers to school-age youth, they provide an interesting starting point, even more so when we consider the fact that future journalists also belong to the generation of digital natives.

According to Eshet-Alkali and Amichai-Hamburger, digital literacy has become a survival skill due to the fact that without it, it is impossible to develop complex tasks in the working world. That is due primarily to the pervasiveness of the ICTs, since to complete any operation it is necessary to manage and master digital technology.¹³⁴

Eshet-Alkalai identify five major digital skills that comprise digital literacy. They include photo-visual skills, reproduction skills, branching skills, information skills and socio-emotional skills.¹³⁵

The photo-visual skills basically refer to the ability to read instructions displayed in graphic form. This is essential to be able to use the interfaces for operating systems, applications and all types of digital devices.

According to the Israeli scholar, the evolution from text-based environments to digital environments requires school children to develop cognitive abilities that use vision for thinking.¹³⁶ The objective is to create 'photo-visual' communication with the environment which permits the intuitive use of graphic interfaces for computer programs.

Eshet-Alkalai affirms that school children who have these skills possess better visual memory and strong intuitive and associative thinking. It is interesting to note that these skills are also essential to be able to use any type of digital device, given their intimate relationship with hypertext.

In the meantime, the reproduction skills refer to what Lessig calls the creation of derived works. In other words, it is the ability to generate new material, by reassigning pieces of prior information.

It is the creation of new content, mixing and changing the context or the meaning to texts, videos, music, sound or video which previously existed. When analyzing this point, it is important to remember that imitation is the first step in artistic creation and many well known writers and musicians started their careers by copying the style of artists that preceded them.

In a world where information abounds, to know how to judge its quality, as well as the credibility of the source, is essential to a journalist's work.

On the other hand, branching skills refer to the ability to use non-linear logic to produce content, search through it and convert it into knowledge. This is the skill that develops strategies to search for information in highly complex environments and in which the index is missing. This goes beyond what Google provides as an omnipresent search engine.

These are what Eshet-Alkali and Amichai-Hamburger call hypermedia literacy skills. From

134 Eshet-Alkali, Yoram; Amichai-Hamburger, Yair. Op. cit. p. 1.

135 Idem.

136 Op. cit. p. 2.

here, we should consider the skill to 'navigate' between different media and formats, beyond what exists on the Internet.

Finally, Eshet-Alkali and Amichai-Hamburger identify the socio-emotional skill as basic to survival in digital environments. This is directly related to the appearance of Web 2.0 environments and the concepts of collective intelligence, social networks and participatory culture.

Prensky points out that a wide gap exists in the way the digital natives and the digital immigrants use the web. While the immigrants read web pages (mainly static and informative), the natives socialize through Facebook, MSN or any other social network that exists.

Communication research doctrine, whether it comes out of the European or the North American school, was based on the paradigm of mass communication which was unidirectional and dominated by the great cultural industries.

Web 2.0 breaks with this mold where the user (or receiver in the old paradigm) becomes central to his own messages. This obligates the journalist to enter different networks, immersing himself into their culture and logic to be able to interact with him.

It's important to note that we are talking about interacting and not informing. To inform is a unidirectional act. To interact is bidirectional and, most importantly, there is no all-powerful sender who controls the media and the message. As we stated earlier, the information returns to a public domain.

The journalist is no longer the colonizer who 'communicates to develop,' so to speak. Rather he becomes a sociologist or interpreter, in a link between the different cultures or existing networks. It is a small change in logic, but it has profound implications for doctrine and journalistic practice.

4. Digital Literacy, Participatory Culture and Games

Just as Eshet-Alkali and Amichai-Hamburger have done, Jenkins addresses the digital literacy of school-age children and youth. However, his work makes the connection with a broader participatory culture and with a more autonomous learning space, rather than targeting the classroom. He focuses on games, especially the videogame, as the most appropriate teaching strategy for digital natives.

Jenkins identifies eleven basic skills upon which one must work systematically to achieve adequate insertion into the Information Society. The majority of them are directly related to those that Eshet-Alkali and Amichai-Hamburger have identified.

Jenkins identifies the following competencies:

- Play
- Performance
- Simulation
- Appropriation
- Multitasking
- Distributed cognition
- Collective intelligence
- Judgment
- Transmedia navigation

Networking Negotiation¹³⁷

It is interesting that, as compared with the competencies that we analyzed previously, Jenkins proposes a super-positioning of competencies that range from the most basic to the most elaborate, passing through the attitudinal, the cognitive and the procedural.

Multitasking, transmedia navigation and distributive cognition are skills that apply to the very nature of the digital natives. On the other hand, play, performance, simulation, appropriation, collective intelligence and distributed cognition arise as basic strategies to achieve significant learning, based on the characteristics of the digital native. Judgment, networking, and negotiation are in a different sphere, closer to the practice of journalism. Transmedia navigation should also be added to this.

Jenkins, like Prensky, situates play as one of the principal learning strategies oriented towards the digital native. He defines the play competency as the ability to experiment with our environment as a way to resolve problems. He argues that people who have played videogames have a greater capacity to work collaboratively and to solve problems. They also have a higher tolerance for failure than that of those who have not played games. This is due to the fact that one of the basic strategies for moving to the next level in a videogame is experimentation based on trial and error. It is also important to bear in mind that learning takes place in a non-traditional form, with scarcely a reference to the classroom, and the user is not even aware of this.

Children who play Flight Simulator or The Sims learn geography or administration through simulation which is another competency defined by Jenkins. To be able to complete the game, the child must obtain a high score. In the case of Flight Simulator, he should learn to navigate and fly with instruments. Therefore, he must dominate the geography over the area where he will fly.

In the same way, the ability to simulate is a basic tool to learn the dynamics of the environment which the digital native inhabits. A clear example of this is when the pilot in Formula 1 encounters a route that he does not know and he resorts to videogames to learn in advance the way to take certain curves. The performance competency is directly related to this. Jenkins defines it as the ability to adopt 'alternate' identities for the purpose of improvising and discovering.

From a professional point of view, this competency is essential for the journalist to ensure that he understands the different cultures in which each one of the news items that he covers is inserted.

On the other hand, collective intelligence is directly related to participatory culture and the phenomenon of Web 2.0 which implies a significant shift in journalistic practice. Jenkins defines it as the ability to share knowledge and compare notes with others, to achieve a common goal.

For Levy, 'it is an intelligence distributed everywhere, constantly valued, coordinated in real time, and that leads to effective mobilization of the competencies.'¹³⁸

137 Jenkins, Henry. 2008, *Confronting the challenges of participatory culture: Media Education for the 21st Century*. The John D. and Catherine T. MacArthur Foundation. Chicago, USA. P.4.

138 Lévy, Pierre. 2004, *Inteligencia colectiva: Por una antropología del ciberespacio*. DVS. Washington, United States. P. 20.

This brings us back to the Frankfurt myth and the basic idea behind the culture of the masses: that the audience is ignorant. Levy proposes a notion that is completely opposite this idea: that it is precisely in the masses where intelligence resides. That is the starting point for civic journalism and, in simple terms, this means that the real source of information is in the community and it does not come from official sources (the authorities).

According to Soroweicki, four elements are required to make a community intelligent:

- 1. Diversity of opinion:** each person offers his information and point of view.
- 2. Decentralization:** no one impedes the flow of responses and information.
- 3. Aggregation:** a mechanism to sum up the opinions of individuals into a collective decision.
- 4. Independence** of people in a community: the ability to form one's own opinion without having one's opinion determined by those around him.¹³⁹

If we think back to the field of journalism, this necessitates a change in the attitudinal and procedural competencies that the schools of journalism should promote.

Another competency that is directly related to collective intelligence is networking. When we speak of work on the net, we are not necessarily referring to telecommuting or to the formation of work teams, but rather to a way of operating that is broadly used in the community of web developers, under the logic of tutorials.

Tutorials are based on participatory cultures and on what Castells called the 'gift culture.' Each developer who knows how to do something, tapes a video in which he explains how to make a header (web page title) in Photoshop or a Wordpress template and he uploads it to Youtube so that the other designers can learn from it.

There is no economic compensation for this, nor is there a copyright problem. The developer is happy to teach others and his compensation is found in the comments that he receives on his blog. This can be observed in hundreds of forums where a developer asks a question about how to do something and one or more colleagues guide him through to the solution.

From this perspective, the work on the net means asking for and helping one's colleagues. For this reason we say that a community complies. This is very far from the culture of the journalist scoop, where he scrambles to get an exclusive story and the rest of the journalists and media become the competition.

5. Digital Competencies for Journalists

Many of the digital native competencies analyzed by Jenkins and Eshet-Alkali have a direct application to the field of journalism. This is why digital competency must become part of the curriculum and the profile of the journalist.

It is necessary to design and teach strategies of a documentary type to discern the quality of information and the credibility of the source. This last point is vitally important since the influence of civic journalism is increasingly more important, making it imperative to improve

139 Soroweicki, James. 2004, *The Wisdom of Crowds*. Random House Large Print. Toronto, Canada..

methods for checking information and facts.

In a world where speed is one of the principle attributes, the journalist must know in advance how to recognize a hoax where for example, information and governmental web sites are copied almost to perfection.

A second competency that should be reinforced from a journalistic point of view refers to information and transmedia navigation skills. The journalist must know how to follow the flow and evolution of a news item through diverse media and sources, whether they are traditional or not.

An example of this is the way in which the BBC gathered information on the terrorist attacks on July 7, 2005 in London. The BBC began a reporting process online that included a search for stories, images, video and audio tapes on forums and blogs.

Transmedia navigation also requires constant searching for information on different web sites that are not necessarily news sources, as well as social networks, and forums to follow developing stories.

An interesting case arose from the proposed law that modified Intellectual Property rights and that authorized ISPs¹⁴⁰ to erase and block contents that presumably violated copyright. At the same time, it allowed the ISPs to disconnect a person from the internet if they thought that the person was downloading content that violated copyright, among other things.

This case was explored by various social networks that made contact with congressman to share their points of view and consequently they obtained the necessary votes to stop the articles mentioned earlier from being approved.

There was more precise information and better technical analysis on said social networks, but it was not available from official sources, such as the government, the parliament or the Chilean Copyright Society (SCD).¹⁴¹

A third competency that has direct application to journalism as a survival skill and that must be developed is appropriation or reproduction. We place it at the survival level since copy paste or plagiarism has become one of the major ethical challenges to journalism in a digital environment.

As a result, our view is different from that of Eshet-Alkali and Jenkins. It is based primarily on ethics and the skill required to distinguish between plagiarism and a derived work, and knowing when it is legal to borrow certain images and when not.

From a cognitive point of view, it is necessary to manage the concept of intellectual property and copyright. It is also necessary to know how to use systems that manage copyright such as Digital Rights Management (DRM) or Creative Commons.¹⁴²

A fourth competency is what Eshet-Alkali calls 'branching skills.' It could also be referred to as hypertextual competency. It is important to bear in mind that the barrier between the digital native and the digital immigrant is of a cognitive character and it is based on having either linear or non-linear logic.

These are two different forms of thought that influence the practice of journalism in three areas: how information is stored (memory), how knowledge is produced, and how said knowledge is communicated or narrated.

The digital native stores and organizes information in a hypertextual manner. This man-

140 Example of companies that offer Internet services: VTR, Claro, Entel and Movistar.

141 Sociedad Chilena de Derecho de Autor.

142 www.creativecommons.org

ner of 'organizing' is similar to conceptual mapping. He makes connections between information nodes, more than storing information as on a bookcase.

As a result, more than organizing, he connects pieces of information. The value of each node is found in its ability to connect with others and, as a result, to produce knowledge.

This leads to another sub-competency that could be called data mining. We understand this competency as the skill to build, maintain and interpret databases.

If we now live in a world in which productivity and power are centered on the gathering, processing, and dissemination of information, it is necessary for journalism students to know how to utilize databases to produce knowledge.

Another skill that is necessary to develop the hypertextual competency is the production of non-linear narrative structures.

After reviewing the bibliography to teach general writing, information, interpretative and opinion journalism, we see that writing schemes of a linear character are still used exclusively.

It is necessary to add hypertext as a form of narration both for digital and analog environments. Digital environments refer to civic journalism, web sites, social networks, chat rooms and video games. The analog environment refers back to traditional television, newspapers, magazines and cinema.

With a new generation growing up as a digital native, students must learn to write in a hypertextual manner to be able to communicate various messages effectively.

Given this reality, a new sub-competency emerges that is situated within that of hypertextuality. We are referring to the architecture of information. This discipline studies and analyzes the way in which information is organized and presented within hypertextual interfaces, such as websites, cell phones, videogames, and all types of interactive platforms.

If we revisit the history of the web, we will see that the key to Google's success when competing with Yahoo and Altavista, was in large part due to its information architecture that allowed for great ease of use as compared with the veritable jungle of information that Yahoo's homepage became.

We can see that information architecture is a basic competency that journalism students must learn to be able to prepare messages in digital environments which are clear and understandable for all audiences.

6. Multitasking and Convergence

Associated with the hypertextual competencies is the multitasking skill. It is important to point out that this skill is a prerequisite for the development of hypertextual spaces.

To produce knowledge from numerous pieces of information through data mining, it is necessary to think on many levels to make connections. That means that the journalist must be proficient at different levels, rather than being highly specialized in just one thing. This necessitates a return to generalist teaching.

Another digital competency that is required today is that of convergence. This means that the journalist must be capable of moving from one media form to another. He must know how to write for radio, television, newspapers and digital media. He must also be capable of editing video, audio and managing information architecture concepts for the web, even if he

works for a newspaper.

However, he must learn to use software programs through experimentation because it is the only way for him to take maximum advantage. After all, the best tutorials for using software do not come from formal sources- software development companies or education centers - but rather from those who simply upload them to the web.

A competency associated with learning and using software is the ability to use code. To be able to work, edit and modify digital platforms upon which almost all current media function, it is necessary to have basic knowledge of programming language, especially html, php, java and action script. Without the basic knowledge of said code, it is not possible to solve problems, to adapt technology or to utilize the advanced functions of programs and journalistic content management systems such as Wordpress, PhpNukem, Drupal or Joomla, to name a few of those currently used.

7. Work Style

Eshet-Alkali and Jenkins discuss diverse survival competencies that are necessary to work in the Information Society and that have direct application to the way work is done in journalistic environments.

The first is collective intelligence and it is directly related to transmedia navigation. As we previously stated, it is necessary for the journalist to learn to use them and not to depend solely on official sources when reporting.

From our perspective, collective intelligence is strongly associated with the use of social networks as producers of knowledge. At the same time, it is necessary to include the competency of working as a network, which is the ability of the investigative journalist to form and organize multidisciplinary teams.

Finally we refer to the socio-emotional skills, as defined by Amichai-Hamburger. In a world made up of networks, where multiple cultures and diversity are the currency, it is necessary for journalists to be capable of listening, understanding and interacting with various subcultures.

As Amichai-Hamburger proposes, the competencies that we have listed are survival competencies in a digital environment. They are survival competencies because the phenomenon of digital migration clearly indicates that it is a definitive trend and there is no looking back.

It is therefore necessary, when training tomorrow's journalists, to have a clear perspective and understand the paradigm shift in audiences. The journalists therefore must change the way they construct and transmit their messages.

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Social Media, Networks and Life

The Transformation of Identity and Privacy through Online Social Networks (The CouchSurfing case)

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1. Introduction

The manner in which individuals create their identity as subjects, and how they define themselves, has significantly changed. "There is a growing public discourse (both hopeful and fearful) declaring that young people's use of digital media and communication technologies defines a generational identity distinct from that of their elders" [22]. The level of introspection has weakened. Increasingly, individuals define themselves by what they can show, and what others can see. Intimacy is an important aspect of defining who they are, and thus it must be publicly presented. As Ito et al. found in their research in the *Digital Youth Project*, "new media provide(s) a new venue for their intimacy practices, a venue that renders these practices simultaneously more public and more private. Young people can now meet people, flirt, date, and break up outside of the earshot and eyesight of their parents and other adults while also doing these things in front of all their online friends" [22].

The term identity has become a controversial term in social and cultural theory, partly as a result of processes such as globalization and postmodernization [3]. Also, in terms of cyberculture, the transformative effects of new communication technologies have reshaped identity at an individual and collective level. There has been extensive research on the ways in which cyberspace has redesigned some aspects. For Castells, identity is a set of values that provides a symbolic meaning to people's lives by strengthening both their feelings as individuals and their sense of belonging.

People can have multiple identities, depending on the different contexts in which they exist [11]. Charles Cheung discusses blogs in this context, exploring the ways in which they are used. Cheung borrows from sociologist Erving Goffman the concept of 'drama', which emphasizes the fact that all people interpret roles in the 'drama' of everyday life. For Goffman, interpersonal lives are marked by performance, and life unfolds as a 'drama'. Individuals try to manage the ways that others perceive them, and try to present themselves in a positive way. The home pages of blogs include visual and textual material, and links to other sites, with biographical narrations supplemented with links to relevant sites. This shows the preferences of the individual. Many blogs also use web meters to measure their popularity [12]. As Aced noted, if in blogs the presence and visibility are built on the basis of texts, images and videos, and what transcends on the interests of the blogger, in social networking sites the presence is organized around a closed profile, built by each user and their contacts [2].

Since social networking sites are a recent phenomenon, there is a lot to investigate about the new types of social interactions that they generate, and how they can be seen to represent the transformation of sociability in the digital age. We will start from the viewpoint that online/offline communities (and CouchSurfing in particular) are a clear representation of the change in values that society is experiencing today, thanks to the facilitation of the internet.

One of the authors of this paper, Cristina Miguel, has been a member of Couchsurfing.org since 2007. This research is positioned within the embodied and situated practices that participation in the site generates. Immersion, combined with online and offline participant observation, and the theoretical research that Cristina Miguel did for her Masters thesis [28] about hospitality exchange networks, form the basis of this paper. Christina has both accepted visitors into her home as a 'host', and she has also 'surfed' to other homes many times.

2. The Transformation of Identity and Privacy in the digital age

"The user is the content" [27], is a metaphor that McLuhan applied to the media in general in 1976. Nowadays, not only do the individual users create a lot of content on the Internet, but on social networking sites all the content is related to the user, so we can say that 'the user is the content of the internet'. On social networking sites, individuals expose their intimacy in public which is a phenomenon that has recently been labeled, 'Extimacy' [34]. New technologies allow for the representation of 'I' to be performed publicly. In previous centuries, intimacy seemed to be the essence of identity, but today, "thanks to the media, personal privacy becomes a part of community participation" [37].

2.1. From the claim of Privacy to exposed Identity

Since its inception, the claim of privacy represented the need to tip in the interior. The subjective experience becomes part of the personal narrative in a time when the individual is released from the weight of tradition and feels ambivalent about the loss of support that it represented, and being disappointed by the uncertainty of the future. The postmodern individual is a subject 'psi', anchored in everyday life, becoming immersed in a continuous self-realization path and concerned with the optimal management of emotions. That is the reason why the territory of intimacy is a product of Western modernity.

At this point, it appears the homo psychologicus [34], who is interested in introspection and self-knowledge. It is promoting a new 'emotional culture' based on, *inter alia*, an ideal of authenticity through the display of intimacy in a blurred division between public and private [4]; [21]. If intimacy was once understood as a bastion of privacy and reserve against the claims and demands of public life, now intimacy is viewed, and exhibited as, an ingredient of social identity. This is in itself a paradox, because what started out as something to be removed and protected from public view, turns into (via technology) an authentic presentation of self that individuals want to display and exhibit. However, as noted by Foessel, "intimacy means all the links that an individual decides to remove from the social space of the exchanges to protect it and develop their experience under the gaze of outsiders" [16]. This

implies that intimacy loses its status when it is advertised.

The 'psychological individual' has given way to the 'exposed individual', and in turn, diaries have given way to profiles. Profiles have become a common mechanism to present one's identity. They have been extended to include personal and social information, such as articulated 'friend' relationships and testimonials. As Abrechtslund has averred, "the practice of online social networking can be seen as empowering, as it is a way to voluntarily engage with other people and construct identities, and it can thus be described as participatory. Also, to participate in online social networking is also about the act of sharing yourself – or your constructed identity – with others"[1].

On the other hand, the exhibition of one's identity can hide a desire for recognition, "the individual claims attention in many ways. Their desire for recognition and for communication has as its ultimate goal in reaffirmation of their identity through promotion of relationship with others"[37]. Danah Boyd argues that "privacy is simply in a state of transition as people try to make sense of how to negotiate the structural transformation resulting from networked media" [9].

The consumption of other's intimacy has increased tremendously over the past few years. The intimate 'I' of the common people is promoted and enhanced in the virtual scenario under the requirement of authenticity and the requirement of 'being yourself'. So privacy becomes entertainment content (in the sense of something shown to others), 'I' becomes part of the show and in this transformation, intimacy ceases to be, as it changes to extimacy [34]. As McLuhan said in 1977: "this has become the main business of mankind, just watching the other guy (and) invading privacy. Everybody has become porous" [27]. The popularity of social networking sites offers users the potential to develop more persistent identities as well as to help individuals produce themselves through identity creation, socialization and self-expression.

The postmodern individual is focused on emotional self-fulfillment, gives priority to the private sphere and reduces emotional investment in public space (abandonment of the political and ideological). "Intimacy and private life become the site of the intensification of relationships with themselves and the other" [36]. On the CouchSurfing case, Paula Bialski argues that one does not observe the individual's desire to experience the private, the 'house', but a need to experience another human being. She has termed this phenomenon as 'emotional tourism'. The origins of emotional tourism are deeply rooted within the processes of globalization, Internet discourse, new social stratification, the Western individualist society and postmodernity [5].

2.2. From networked individualism to *neotribes*

The development of digital technologies has fostered new forms of socialization, such as those that facilitate social networking platforms that have dynamics dominated by concepts such as trust, reputation and visibility. With the emergence of 'Web 2.0' technologies, computer mediated communication has entered a new era of 'networked individualism'. Pre-established relationships (family, friends, work colleagues etc) are located in the context of one's identity online, allowing it to maintain an extensive network of strong and weak social ties [39]. Because of this excessive individualism, as noted by Verdú [37], post-materialist movements arise where it is not important to store objects or knowledge. In a connected

society, maintaining the network is of prime importance.

The computerized consumer society enables 'live on demand'. Key values of this society are hedonism, respect for differences, the cult of personal freedom, psychologism, the cult of nature, and sense of humor. It is a narcissistic and 'psi' culture in which cyberspace is a medium where narcissistic communication can be developed. Through social networking profiles and blogs, narcissistic people find a way to indulge their narcissism. The investigation of Laura E. Buffardi and W. Keith Campbell: "Narcissism and Social Networking Web Sites" in 2008, examined how social networks are used to express narcissism and concludes that people who are narcissistic online are also narcissistic offline, and they find on these platforms tools for public exhibition [10]. But we disagree and we state that both technologies and culture invite narcissistic practices.

We argue that in some respects, hospitality exchange networks exemplify this revolution of postmodern individualism that Vidal calls hedonistic hyperindividualism. According to Vidal, postmodern society generates a 'collective narcissism' with the solidarity of a 'micro-group of kindred spirits' [38]. This would explain the cosmopolitan paradox in hospitality exchange networks where links are built between like-minded people, creating a cosmopolitan 'gated community'. The paradox being, a 'gated community' of open-minded kindred spirits [17].

In an individualistic society, giving meaning to one's life through the internal dialogue with one's emotions implies a much harder and uncertain task than when the personal sense of self has already been given in advance by the major producers of meaning frameworks (community, tradition, religion, etc.). This implies that some young people who are disoriented, confused, lost, unhappy, etc., are grouped into urban tribes that function as the replacement of social institutions. In these urban tribes, young people find a way to establish links with one another and obtain a group identity and self-assertion. These *neotribes* are a consequence of disappointment that individuals (in most cases young people) feel as a result of modern day life in large modern cities, where there is superficiality, and where everything seems to be measured by personal success. There is excessive consumption that characterizes the mass consumer society and generates an 'alienation' of individuals [26]. These *neotribes* are also present in cyberspace and we argue that many virtual communities, which create strong links between their members, are *neotribes*.

For online settings such as social networking sites, the most relevant requirements to designate them as a 'community' are, "engaging in shared rituals, social regulation, and collective action through patterned interaction and the creation of relational linkages among members that promote emotional bonds, a sense of belonging, and a sense of identification with the community" [32]. Therefore, CouchSurfing can be considered as a kind of *neotribe* composed of young people (the average age of a user is 28 years) who establish links with each other with an emotional exchange, a shared set of motivations and values, and a sense of belonging to a community. As Devan et al. states, "CouchSurfing offers a new way for people to travel and meet others, posing a working model of a hybrid online-offline community changing the way people negotiate social trust and belonging across geographic and cultural boundaries." [5].

3. Exchanging hospitality on the net – Couchsurfing case

Hospitality exchange networks exemplify many of the transformations of identity, intimacy and privacy motivated by both the new values of postmodernity and the extended use of the Internet. These networks are platforms maintained by volunteers based on trust, good will, openness and tolerance with the aim of bringing people together. They provide free housing and allow members to gain an insight into the everyday life of the member visited or host [24]. These networks operate through cooperation, reciprocity and trust between hosts and guests, and are intended to provide non-monetary exchange of hospitality. As a condition of membership of the community, it is expected that the members be both hosts and guests, although there is no requirement to perform both roles to be a part of it [20]; [25].

The first hospitality exchange networks emerged after World War II to promote peace among people [21]. One of the oldest, named Servas, is still active today (www.servas.org). In the nineties many hospitality exchange networks focused on specific groups: for cyclists, for women, the gay community, for hitchhikers, etc. Most of them still operate today and its database is available through its website. During the last decade, with the ever increasing use of the Internet, many hospitality exchange networks have been set-up as general web projects, creating communities through the Internet.

In January 2004, Casey Fenton (along with other co-founders) started Couchsurfing, a social networking site with a system that enables a user to identify and find someone to provide sleeping space in their home for free. CouchSurfing creates a hybrid online/offline community where members coordinate travel accommodation with other members, organize gatherings for cultural exchange, and create a global cooperative network. The site remains non-profit and is supported entirely by website member donations and an address verification system [30].

While Couchsurfing was not the first 'hospitality exchange site', it has become the largest, with a membership that counts over two million users. Unlike most social networking sites, such as Facebook, MySpace or Orkut, where you first connect to known others by 'friending' them [7], Couchsurfing does not have this function. On the contrary, CouchSurfing consists of a group of strangers from all corners of the world who can see each other's profiles, and make requests to stay at someone else's house. "CouchSurfing goes against many common social norms, as people are welcoming strangers into the privacy of their homes" [14]. Using an internal messaging system, individuals (called *couchsurfers*) can contact potential hosts and request a 'couch'; part of a narrow code of vocabulary specific to the site; an example of how "a symbolic code can aid in the identification of who belongs to a certain social space and who does not" [40]. Rather than being either online or offline, the process by which hospitality is 'exchanged' is a complex 'dance' of emails and telephone calls, that ultimately leads to face-to face encounters, and overnight stays, that normally last between two and seven nights [5].

3.1. Motivation to join the network

We can distinguish between psychological, functional and social motivations [23]. Among the psychological motivations are: recognition, curiosity and personal growth. On the other hand, people with functional motivations use the community as a source of information,

seeking advice about where they should travel, finding a place to sleep for free, increasing flexibility on their travels, and finding interesting things to do in their place of destination. Finally, social motivations include a desire to interact with local community members, to host other members (or be hosted), to have a cultural exchange, to attend meetings organized by groups, and to make friends worldwide.

One may consider that revealing private details on social networking sites (such as CouchSurfing) may be a risk, considering the fact that you make contact with total strangers. However, despite this concern, information is willingly provided. The question that arises from this is, what are the motivations to show private data? As Gross and Acquisti have pointed out, “different factors are likely to drive information revelation in online social networks. The list includes signalling, because the perceived benefit of selectively revealing data to strangers may appear larger than the perceived costs of possible privacy invasions; [...] faith in the networking service, or trust in its members” [19]. But in CouchSurfing, not only do users reveal personal information such as telephone numbers and addresses with their potential guests, they also share their intimacy with them when hosting them. “When members host they have much to gain but also much to lose, such as personal belongings, intimacy, personal space, etc.” [14]. Receiving a stranger at home is always a risk, but here users value more the experience of knowing someone foreign, having a cultural exchange, and the potential for long-term friendship, rather than the potential danger or damage that the stranger could cause them.

In order to generate trust between users, CouchSurfing has designed a reputation system. After hosting or being hosted, *couchsurfers* are encouraged to leave a reference in the host's or guest's profile.

3.2. Reputation and trust: the importance of references

Trust, says Resnick, is generated first by interacting with someone over time. The history of past interactions informs greatly about the suitability of the other person. Secondly, the expectation of reciprocity (or retaliation) in future relationships creates an incentive for good behavior. Reputation systems provide records of members and they bring visibility to the past actions of all other members. Interactions in the future can be established on the basis of these reports of past behavior. This form of interpersonal monitoring of the conduct of members of communities both online and offline, as in the case of CouchSurfing, reports when individuals behave well as hosts or guests and will penalize those that do not [33].

Trust and reciprocity are crucial to the effective functioning of hospitality communities. As noted by German Molz, “hospitality is always a risky proposition, since the host can become a parasite, or even worse, the enemy” [17]. Therefore, the websites of the hospitality exchange networks seek to circulate trust as a way in which to ensure security at the meetings between members. The most comprehensive security system operating on these websites is the ‘reputation system’. Reputation systems are like shortcuts to establishing trust between strangers in online environments.

In order to build trust among members, CouchSurfing has developed a security system, which is characterized by several components: personal references, verification and vouches.

The most important safety system is *personal references*, which allows members to rate each other after meeting, through a comment posted on their respective profiles. With the

written record, the experience can be specified as 'positive' 'negative' or 'neutral'. There is a trend of leaving positive references between users, and when the experience is not positive normally they don't leave any reference. "Individuals adjust their friendship ratings because they can see how others rate them" [35]. Only when there has been a really bad experience do *couchsurfers* display a negative reference. The *verification system* gives members the option to confirm their identity and physical location. In order to do this, members fill in a simple form which states their name and address. It also requires a donation of \$ 20. The CouchSurfing team then sends a postcard by mail with a code that the user must enter in their profile. Once the process is finished, a green padlock appears on the user's profile. The Green padlock symbol on the member's profile indicates that the address has been proven and that users are who they say they are, because by paying by credit card donation, the user's personal data is checked. Finally, in the *vouching system*, users can only vouch for members who they have met in person. Confidence is gained when a user has been vouched by three other people. When someone is vouched, this implies a high level of trust in the community. The study of Teng et al. shows that the vouch is reciprocated 70% of the time [35].

Online technology-mediated reputation systems based on transactions that are socially contextual (from Ebay to Couchsurfing) have come to play a pivotal role in society and everyday lives, accumulating evidence over time as to one's character and personality. The number of vouches and reputation testimonials establishing a person's status, trustworthiness, consistency, commitment and participation makes it difficult to fake. The reputations garnered on Couchsurfing carry a permanent archive of past contributions and actions, acting as permanent reminders, a particular narrative, and a consistent identity [30].

In the comprehensive study conducted by Paula Bialski about trust in CouchSurfing, it was observed that levels of trust declared by the users via their profile, to rate their CouchSurfing 'friends', are high, as shown in Figure 1.

	Percent
I don't know this person well enough	6.7
I don't trust this person	0.4
I trust this person somewhat	11.5
I generally trust this person	34.3
I highly trust this person	34.7
I would trust this person with my life	12.3

Fig. 1: Levels of trust in CouchSurfing Source: Bialski, 2010: 198

A major concern regarding the exchange of hospitality is that registration is done online, and anyone can become a member. Thus, there is no way of knowing whether the information provided by a user is correct. The survey carried out by Heesakkers (12) in 2008 shows that in order to rely on a host, or a guest, a combination of the following security measures are used:

- The amount of information in the profile and originality
- References
- The level of verification
- If a member has been vouched or not

Also, Farias' research results match with Heesakkers', in that with increased provision of information, the level of fear amongst members decreases. Profiles with more information and user photos are the most trusted. According to Farias, although there is a safety concern, we see the characteristic of the postmodern citizen who is not willing to sacrifice their freedom to feel safe. Thus, the interaction with foreign countries, cultural exchange and integration between people are the means to pursue happiness [15].

In the following section we will analyse the CouchSurfing profile, what information is published and how personal identity is constructed through the profile. Profiles are the digital identity of their members, and because members don't know each other in advance, as in Facebook or Orkut, they are the center piece of hospitality exchange networks.

4. Representation of the identity through the profile

Profiles allow individuals to construct a digital identity because they allow users to share a lot of information such as interests, hobbies, ideologies, etc. with other users. On CouchSurfing, as well as on most other social networking sites, each new user is required to build a semi-public profile, a kind of card that provides the 'I' to other users in the network.

The key information provided when creating a profile is:

1. Personal description
2. How I participate in CouchSurfing
3. CouchSurfing experience
4. Interests
5. Philosophy
6. Music, movies, books
7. Types of people I enjoy
8. Teach, Learn, Share
9. One Amazing thing I've seen or done
10. Opinion on the CouchSurfing.org project
11. Locations travelled

Paula Bialski points out that all the profile key questions are crucial to build trust and familiarity. In order to create context and mark identity, the majority of users add pictures, description of places they have lived and travelled to, and links to other friends on their profile. Dan, a founder of CouchSurfing, explains that the profile questions are structured so that they "capture the essence of people. And the display of the people's essence contributes to build trust"[6]. The profile helps users to know each other. As the CouchSurfing website states: "those who see your profile have a better idea of who you are. The information con-

tained in the profile helps other users to know who you are in terms of what you write and how you write it" [13].

CouchSurfing's user profile has a list of friends, where other people in the community that the *couchsurfer* knows are reflected. They are catalogued as: best friend, good friend, friend, CouchSurfing friend or acquaintance. It also has a reference list, where users leave a comment on the people's profiles they interacted with [8]. Bialski notes that a large number of friends and referrals helps to build confidence. However, of equal importance is the kind of friends that you have. For example, a user that is an ambassador, but who has relatively few friends, will generate a high degree of confidence. Users who are very involved in the CouchSurfing project can become 'ambassadors'. It is a title given by a person in the administration department of CouchSurfing. Ambassadors are responsible for promoting the idea of CouchSurfing and sometimes perform other tasks, such as translating the website [6].

In their research, Devan et al. found that "as length of membership in the community increases, there is a parallel increase in the amount of contact with other members. This positive relationship leads to the accumulation of references, friendships, and social capital that helps members build a positive reputation; however, this may decrease one's need to continue to engage in instrumental moves that bolster their reputation. On the other hand, new members may feel a greater need to strengthen their profile, or increase their status"[14].

While the profile allows users to express different aspects of their identity [7], a reputation can only be created through testimonials, vouches and (friend) connections to other users of the network. These can only be obtained by offline participation in CouchSurfing. Through the CouchSurfing website, users can convey their identity through interaction, participation and exchange, and in the same way gain status within the community [30].

Testimonials are viewed as simply one more feature of verifying identity. Yet, through testimonials, profiles become a site of conversations. Testimonials represent the primary form of public conversation between *couchsurfers*. Even though some users do not respond to reciprocated testimonials, most of them continue with the cycle. Technically the testimonial is between the author and the receiver, although it is equally intended for third parties. Therefore, the profile, the connections, and the testimonials which are visible to all, exemplify a social network that is designed for consumption by others [8].

The process of displaying your personality online is important for the future development of a relationship *offline*. In Couchsurfing, establishing the 'self' *offline* is done in two ways: firstly, individuals present a live profile of themselves, presenting their interests, their skills, and their likes and dislikes. This profile resembles their *online* Couchsurfing profile (for example: 'I speak 3 languages and I love cooking'). The second way of establishing the self is by telling stories. The fluidity of modernity leaves the individual without an exact definition of self. Therefore, the more monologue and dialogue individuals have concerning themselves helps them to assert themselves and to verify who they are as people [5]. Giddens would blame it all on the reflexivity of modernity, explaining that the construction of the self is a reflexive project. This narrative and presentation of their profile is part of their reflexive project, and is now instantly available through online social networks [18].

5. Conclusions

On social networking sites individuals construct their identities on their profiles through the intersection and interaction of their own ideal representation of the self (what they want to show), and with what 'the other' thinks about them as expressed through testimonials. In profiles, digital identities are conversational identities. We argue that in the current networked postmodernity, the individual, through social networking sites, is (re)shaping a networked identity, what Zizi Papacharissi has labeled, a networked self [31], created through interaction and intended for the consumption of the networked public.

Enabling both identity expression and community building, online social networks are the tools designed to facilitate sociability, and at the same time, they are blurring the private and public boundaries. We consider that the concepts of privacy and intimacy are changing as they are being reshaped by the forces of postmodernity and new media.

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Mine, Yours and Ours: How narrative structures may influence User Generated Content

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1. Introduction

The internet's characteristics of just in time distribution and many-to-many dissemination have permitted users all over the world to share, discuss and create content in a way never possible before. Nowadays, almost anyone with a computer and, at least, a dial-up connection can read online news, comment and share to all others across the web her opinion. By this means, this new media has allowed fans not only to watch, read or play their beloved subject (especially popular culture productions), but also to show their opinions, regards and creations of it to the whole world to see it. Before the internet popularization, this display was restricted to some family members and closer friends. But now, in doing so, not only those fans are able to display and admire their work, but also mixing, cataloguing, mashing up and building new content between them. To this alternative creation of official commercial material is called User Generated Content (UGC) [2,3,5].

In *Convergence Culture*, Jenkins [3] takes cases of UGC from different shows, books and films expressed in different media. For instance, the group of *Survivor* fans (known as *spoilers*) to whom the biggest fun about the show was to discover before it was aired the program's features and development and publicizing it. In order to do that, they took advantage of the fact that the whole season was filmed months before it being aired and used both simple means, as psychological analysis of contestants, and more complex ones. Jenkins describes a pair of *spoilers* who were specialists in recognizing the kind of vegetation and geography in early *Survivor* teasers and used a liaison with a satellite imaging company to search out for the contest sites before they have been announced.

Jenkins also describes the history of a young girl who started writing a fictional newspaper entitled *The Daily Prophet* which allegedly depicted news of Hogwarts, the fictional magic school of J. K. Rowling's Harry Potter story. Since the newspaper was published online, it didn't take much time for others fans to enlist to join in the writing tasks and the paper started being famous between other kids and Harry Potter fans. News in *The Daily Prophet* went from the narrative of anecdotes happening to Harry Potter's characters to the narration of events happening to the kids, portrayed as Harry Potter's universe characters.

Another interesting example pointed out by Jenkins was the case of stop motion videos made from popular culture action figures. *Toy Wars* and *Probot Productions* are results of some of these creations, both created by two pairs of friends that equally loved pop culture and film making. *Toy Wars* is a fan made reshoot of *Star Wars: A New Hope*, while *Probot Productions* made several popular films, such as Indiana Jones and Alien, in their action figures versions. While some action figures filmmakers try to maintain originality, others take advantage of some

characters' features or some interesting scenes and mash it up with other shows, films and popular characters. That is the case of *Evan Mather*, which were mentioned by Jenkins, and *Robot Chicken* TV show. Though both productions share no (known) staff or even influence relation, both have a very similar style: mixing of different characters from different universes and styles in unlikely situations, aiming mainly humorous relief.

Comparing all those different creations about different popular products, it's possible to observe that between many similarities, there is also some intrinsic differences as all of them do not have or require the same characteristics. For instance, the puzzle resolving of the *Survivor* fans didn't involve much creative conception but implicate in hard work, previous knowledge, team work and even some level of social interaction (between members and in relation to sources of information). In *The Daily Prophet*, much more creativeness was involved and even some level of team work, but not much interaction between writers or general knowledge not concerning the Harry Potter universe. By the other hand, action figure movies required both great movie making and general culture knowledge and different levels creativity, but almost no team work or social interaction.

These differences imply that there are distinct kinds of UGC, some which have more personal creativity of the creator infused while others don't; some are the result of efforts made by one or a limited number of contributors whereas there are other productions which are the result of many hands working together and so on. Based on those characteristic, it's possible to roughly classify any UGC into a scale based on diverse parameters of *Creativity*, *Collective Engagement* and *Audience Reached*. Creativity feature *do not* classify the author's level of creativeness; only states the *intensity* of liberty he took in relation to the original material. Collective engagement refers to the number of people and their interaction in the content construction. Finally, audience reached states the public or potential public for the content under consideration. Though this methodology may not be the most precise one, it's probably the most effective in comparing diverse UGC.

Videogames are not an exception to the fan creations and many titles, old and new, have an immense amount of user generated content. In this article, it's used as corpus UGC of different videogame franchises. To make a comparison plausible, it was chosen to restrict the corpus to games that shared many characteristics in common as possible. The characteristics selected were games which had stories focused in one strong main character, that were futuristic and space themed and in which the main plot consisted of "saving the galaxy" from a alien sentient form of being or group. Based in those filters, many games were selected, thus to creating an interesting counterpoint, two main series were chosen in order represent the main corpus. Therefore, the discussion will be focused on *Metroid* and *Halo* series, both prolific franchises that fill all the requirements, but other videogames that also fit them will be used as reference ever now and then, when it is considered as needed. In this way, it's possible to study different gaming popular culture material that has as many similarities as possible, from the gameplay to the setting, for to state the differences, if present, of the general aspect of the UGC and, if possible, glimpse the possible motives behind it.

The empirical research began in online communities that focus each game or some kind of craft were observed as well as general games online communities. Those communities were used as "clusters" to reference user generated content in a more traditional sense. Though the discussion in these communities is also a kind of UGC and are very fruitful in the purpose of permitting users to construct knowledge, both from the game as to game design in general and their craft, the focus in this article were external works that are somewhat *done* and not

work in progress. Some might, then, even question the use of wikis as corpus, which are eternally in change and discussion, but even wikis have a “public” and somewhat “finished in itself” presentation while the discussion happens in a different tab. To make the reflections here, many excerpts from the original contents were particularly examined them [4,5] and compared to each other, as well as the general idea of them [1], however, not all these passages are present in the article overdue the article limitations; only the most relevant or insightful extracts were kept.

2. Halo

Halo is a first person shooter with a futuristic, science fiction and space theme. In the 26th century, while exploring the space, humans stumble across a massive ringed shape metal structure which is habitable in the inside surface. That structure is then named as Halo and humans discover it was created by an ancient civilization known as the Forerunners. However, humans weren't the only ones to find it; an alien faction known as the Covenant also came across Halo and wishes to use it to their own religious purpose. Nevertheless, humans discover that Halo might be a mass destruction weapon, so they decide whether to take control over or to destroy it. Obviously, both sides don't reach an agreement about Halo use and a war is instituted. In between this conflict, emerges The Flood, a kind of epidemic that infects sentient creatures, affecting both sides, and that control of the infected life form. The Flood resembles very much a fungus contamination and it is credit in the game as the cause of the Forerunners extinction and reason why they built the Halos, which should be Flood-free environments.

The plot takes place sometime after the beginning of the war and centers on Master Chief, a hero in the intergalactic war. Master Chief's real name, past or even appearance is not revealed; all the player knows is that she is on control of Master Chief and all other characters around seems to know and reverence him. Player experience in Halo is based in shooting different species of Covenant (there are some aliens species united under the faction) and Flood infected life forms, from different Covenant species to human mutations. While doing so, the player is constantly guided by Master Chief's superiors and Cortana, an artificial intelligence that takes somewhat the part of Master Chief's partner.

The first game in the series was Halo: Combat Evolved, released in 2001, which is basically composed by the intrigue above. Halo 2, 2004, picks up from the point when the first one ends and adds up the discovery of a new Halo and the alliance between humans and one race of prior Covenant, the Elites. Halo 3, 2007, takes place a little after the two previous ones and center in the discovery of a new Halo, outside the Milky Way, that is the key one in activating all others. Both Halo 2 and 3 have a gameplay system very similar to the first game, adding few new features. In point of fact, though there are minor changes between the first one and the later ones, there is almost no significant difference between se Halo 2 and Halo 3's gameplay. If gameplay changes aren't very expressive, by the other hand the graphic evolution is quite representative, being the last one, Halo 3, considered by players one of the prettiest graphics in a multiplayer mode. These games compose the main story line of Halo, but there are also other three games other games based on spin-offs and some novels about both spin-offs and focusing parts of the timeline not very explored in the main games. Since

only the main trilogy fits this article specifications, those are the games to be considered.

This storyline has not only tangled fans all over the world to play Halo (it's estimated that the sales sum of the whole series add up to over 34 million copies worldwide), but also have stimulated them to create based upon Halo. Currently, Halo's wiki¹⁴³ have almost seven thousand articles concerning items, weapons, armors, characters, levels, vehicles, races and Halo's universe history. It's important to emphasize that none of this content was in anyway produced by Halo's developer, Bungie, or publisher, Microsoft; it's was *each and every part* made by Halo enthusiasts.

The process of creating a wiki is it's not very simple. Of course, it's doesn't take too much to just create the wiki itself and add up some pages and some links. However, the importance of a wiki doesn't lie on it existence but in its content reliability and variety. Achieving as much as one thousand articles is not a accomplishment easily done and sure demonstrates a high level of both characteristics. More "usual" interests as coffee and Apple Inc. have generated only 250¹⁴⁴ and 965¹⁴⁵ pages for now, what makes even more remarkable the extension of Halo Wiki in almost seven thousand. It's size and range of themes only suggest the number of people involved in writing and cataloging here, indicating Halo Wiki's high collective engagement. Catalog, as matter of fact, is a key word here because that's what in the bottom line a wiki, and consequently Halo Wiki, is. There isn't and can't be creative input in the text theme or form; all articles must have as much information and connections and be as straightforward as possible in order to convey as much and as efficient as possible information to the reader.

Such strict guidelines don't exist in some other kinds of UGC related to Halo, as fanfics and machinimas. Both are production in which generally there is a high creative rate and, commonly, are not collectively made while these two productions vividly vary in audience reached. Fanfics are histories written by fans using characters, locations and other features of the original production universe while machinimas are videos using footage captured in-game, using avatars as some sort of actors. Though fanfics represent a lot of its writer creativity and ideas, they generally don't grasp big audiences' attention and are restricted to the discussion of a small group of writers. The same can't be said about machinimas, which, in Halo's case, are commonly ironical, criticizing both game features and some players behavior, making them a big audience reached. Two interesting examples of well succeeded machinimas are *Red vs Blue*¹⁴⁶ and *Arby'n'the Chief*¹⁴⁷ whose first episodes' views summed up to almost ten million exhibitions. *Red vs Blue* ironically portrays the civil war between two Halo factions, making references to science fiction, military life, the game itself and others similar games. *Arby'n'the Chief* is a full of clichés parody of the two main characters of the series as of Halo 2, Master Chief and Arbiter Thel 'Vadam (a previous Covenant ally that switch sides and became a playable character in both Halo 2 and 3). The characters are simply addressed as Chief and Arbiter or Arby and represent classic stereotypes of players: the intellectual and catharsis-full one (Arbiter) and the no-brainer immature and childish player (Chief). Another

143 Known as *Halo Nation*, had as much as 6,923 articles by the time of the retrieving. From http://halo.wikia.com/wiki/Main_Page. Retrieved in April 11, 2011.

144 From http://coffee.wikia.com/wiki/Main_Page. Retrieved in April 11, 2011.

145 From <http://apple.wikia.com/wiki/Main>. Retrieved in April 11, 2011.

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interesting feature of Arby'n'the Chief is that it is actually both a machinima and a action figure production since there are both moments in most episodes, being the action figure ones the "real life" of the characters and the machinima ones their interaction in-game.

Many other games have rich fanfic and machinima production, but generally, machinima creation is somewhat related to multiplayer modes of games. Of course, games with only the single player option also have machinima made though them, but those cinematograph creations are restricted to many of the game rules, as the camera and scenario, and can have no other player actors interacting to him, only non playing characters (NPCs). By the other hand, in the multiplayer modes, one player can act as the cinematographer while other players are actors and others are responsible for in-game special effects, supporting roles and things of the sort.

3. Metroid

Metroid is a Nintendo action-adventure space themed franchise. The first game dates from 1986 and it was a platform NES game with a gameplay described by many as something in between Mario and Zelda but with a much darker atmosphere. The game premise is simple: the bounty hunter Samus Aron travels through the caverns of the planet Zebes willing to stop the Space Pirates from exploiting the Metroids, specie that holds a huge power. In order to do so, Samus have to explore planet Zebes, coming across different ecosystems linked by an open map. The open maps means that the player can guide Samus throw many different paths while no kind of verbal communication or guidance is expressed, resulting in an even more immersive and solitary feel. For a Nintendo Entertainment System game, Metroid had quite complex scenarios and that's no exclusive merit to the graphic department, instead, mostly to the design one. Its level design is based on an ecosystem criterion, in with determined species inhabit determinate areas while others can "live" in multiple areas and some exist in transition spots. Species goes from creatures that attack Samus to the vegetation in the background and even some creatures that try to interact with the player in a non hostile way. Most games in the series follow more or less those basic ideas, adding up some features, as 1991's Metroid II, 1994's Super Metroid (which considerably improves graphics and sounds from previous, making the whole experience even more immersive and solitary, which made it to be considered by many the zenith of Metroid games), 2002's Metroid Fusion and 2004's Metroid: Zero Mission (which is basically a remake of the first Metroid).

There was also another game to be released on 2002, Metroid Prime, but though the history and ambience had maintained the feel of the previous ones, its gameplay have changed considerably. Metroid Prime spawned a trilogy of games in its gameplay likeness, with a first person camera and the scanner feature. The camera change irritated many fans that weren't accustomed in "being" Samus and seeing though her eyes, but rather to control her having awareness of the whole environment, but most of them got familiar with it after sometime. The scanner allowed the player to have information about almost all fauna and flora specimens in the game. Both changes could noticeably boost player's immersion and the scanner also add up even more to the environment complexity. The games in the Prime series are Metroid Prime (2002), Metroid Prime 2: Echoes (2004) and Metroid Prime 3: Corruption (2007), all having those same features. Beside those games, there are also Metroid Prime Pin-

ball (2005), *Metroid Prime Hunters* (2006) and *Metroid other M* (2010), but their dissonance with the main series decharacterizes them as suitable to this analysis.

Metroid also have a wiki which have 3,376 articles¹⁴⁸, a elevated number to a series in which the none of the recent games were a huge public success as *Halo*¹⁴⁹. Articles also cover a big gamma of topics, from weapons and armors to ecosystems and creatures that inhabit them. Wiki's characteristics as UGC of huge collective engagement and audience reached and little or none creativity were debated in *Halo* section.

As far for fanfics and machinimas, though *Metroid* do have many fanfics, it doesn't seem to have much machinima production; at least not as much and not as relevant as *Halo*. Though this lack might be consequence of the lack of multiplayer features in the series (only the game *Metroid Prime Hunters* present it), that might not be the only reason as it will be discussed afterwards. *Metroid's* fanfics generally center in Samus herself and not in the *Metroid* universe, but it's interesting to point out that the protagonist's personality changes significantly from author to author. While some authors portray her as an independent bounty hunter with a strong personality and phallic behavior, others represent Samus in a more passive, feminine, sexual and submissive way and most of them stay on between shades of those boundaries. Another interesting point about *Metroid's* UGD is that Samus in very popular between crafts, from cross-stitch to paper craft, and arts in general, like painting and cartoons. Crafts are not commonly pointed as User Generated Content, but since patterns and templates are made by fans based on the game's universe and made available to other fans, it is considered here as some kind of it. *Metroid* fan art is also a very prolific branch of the series, but again, very different ideas of the protagonist emerge, as it is exemplified by the subsequent images (Fig. 1 and 2).



Fig. 1. Samus digital painting made by David Marín¹⁵⁰.

Fig. 2. Samus digital painting made by Reinaldo Quintero¹⁵¹.

148 From http://metroid.wikia.com/wiki/Metroid_Wiki. Retrieved in April 11, 2011.

149 As a matter of fact, even being an older franchise, all *Metroid* games together sold approximately 16 million against *Halo's* 34.

150 From <http://louten.deviantart.com/art/Samus-89996147>. Retrieved in April 12.

151 From <http://reiq.deviantart.com/art/Samus-Aran-Corruption-90027192>. Retrieved in April 12.

4. User Generated Content Asymmetry

As it was seen, UGC in videogames can be roughly separated between more or less *creative* compositions if compared with the original videogame itself. For example, in the *creativity* scale, the least creative production goes from merely cataloging game items, characters and maps in a wiki to, in an intermediate level, mashing up pre-existing game content in new videos or fanfics to, in a further level, creating whole new stories and images only inspired by the game universe. Though most videogames (and popular culture all together) have UGC made through all this scale, it's common that each one proves to provide more fruitful content in one or few segments of this spectrum. It's interesting to highlight again, however, that this creative ranking doesn't intend to rank user's creativeness in anyway, only to place fairly the comfortableness in which users take "property" of the original content and use it as a mean of expression.

As it was presented, *Metroid* and *Halo* have a very similar in-game context, story and even gameplay (especially considering the *Metroid Prime* trilogy), nevertheless both series have different exponents in their UGC. For instance, *Halo* has many well succeed machinimas while *Metroid* don't. By the other hand, while Master Chief's nature and personality seems to be somewhat clear enough to fans that it is possible to make parodies based on that with large public acceptance, *Metroid* seems to cause dissension not only about Samus's personality features but even about her looks. Though this heterogeneity may never be entirely enlightened, some game features might be partially response for that. Technical features, as gameplay, do have some impact as the above discussed multiplayer mode that facilitates and allow much more creativeness in the making of machinimas. However, what probably influence most is the image built by the player of the characters, the scenario and of the game. This construction happens mainly by what Jenkins [2] defines as videogame narrative, which, according to the author, cannot be understood in the same way as narrative in linear media as books, films and television. The videogame narrative, according to Jenkins, doesn't happen in the pre-defined succession of events in the same way of modern literature, but in a interactive and flexible way. Even linear games as *Halo* have a minimum amount or variability depending, for example, on the player's performance. There are different levels of difficulty that allow to the player different in game experience while each and every player's action in-game will trigger a somewhat different reaction of the game's artificial intelligences. Another disparity pointed out by the author is that contemporary narrative's idea of value is generally based on the physiologic development of the characters, but rather Jenkins propose that videogame one is more relevant in a similar system of mythical tales and legends. By this means, other attributes, as the space and time, gain a bigger hole as defining a part of the narrative while the player constructs the other part of the story by herself.

Metroid and *Halo* both have a strong main character, Samus and Master Chief respectively. Both protagonists are not very well presented to the player and both have almost no verbal interaction with her as well. Both games are placed in exotic and intergalactic locations, with rich scenarios and beautiful art. The narrative in both is equally not innovative, basically constituted by the simple premise of save the human race and, maybe, the whole galaxy of oblivion and in well constructed enrolments. Also, in both the main villain is not a human, a human alliance or something familiar of the sort, but a sentient alien form or coalitions which or seeks more power (*Metroid*) or blind religious believes (*Halo*).

But in the same way *Metroid* and *Halo* have similar ways of introducing the main char-

acter, the character get around in the game is clearly different. While in *Metroid* there is no or few contact with other humans or allies, the players conduces Samus all by himself understating this interaction and Samus position in the player's own ways, in *Halo*, while playing, the player always come across non playing characters (NPCs) which engage in conversations with Master Chief. Generally, those NPCs seems to know who Master Chief is and generally let the player know what they think about him though the dialogue, allowing the player to form a idea of Master Chief's nature or, at least, what other think is his nature using direct and specified game clues. Whilst, *Metroid* players don't have a direct idea presented by the game of how Samus is, in the way that they end up projecting an idea of her character.

The non specified material goes beyond in *Metroid*, where the player can also choose, free of any indication or suggestion, which ways to take, how to advance in the game, when to go back and so on. Naturally, there is an "optimized" way to go through the maze that the game is, but that's never clear to the player when playing for the first time, so as he has to discovery by herself. The player (together with Samus, by extension) is tangled in this hostile ambient trying to get by and complete the mission. This construction emphasize the relation that the player have to his avatar, to Samus, as both of them were together "against everything else" reinforcing a reliability feel between player and character. In *Halo*, the path is linear and the player is constantly orientated to the path she should take, what she will encounter next and even instructions of what is the most effective strategy in that moment. Of course, the player also feels close and relying on Master Chief too, mainly because of the gameplay, but the environment and game design don't stimulate it to go further as it do in *Metroid*.

Thus, there seems to be a connection between some narrative structures and how the player relates to them and the game as a whole and the kind of UGC produced by this gamer. Generally, the more the videogame narrative elements, as the characters and the linearity of the story, are well delimited and specified, the less players have to discuss them and reach a consensus and more they share some kind of common ground about it, as in *Halo*. By the other hand, when those elements are more up to the player interpretation, the more the player feels comfortable in interpreting it in her own ways but fewer consensus will be between players and more will be spent discussing those elements. As a result, UGDs of games in which there are more specified features have more consensus between players allowing certain UGDs that take have high creative significance to still be relevant and truthful to a big audience. Meanwhile, games that leave more attributes to player's interpretation allow many understandings of its main aspects to be subjective in a way that more creative approaches rely on subjective interpretations which are not shared by a big number of players, making the content lose audience relevancy. Nevertheless, content in which creativity is not very important, as wikis, can be prolific in both kinds of games.

Mass Effect is a interesting example of the later one. Unlike *Metroid*, in *Mass Effect* the protagonist, Captain Sheppard, is always interacting with other beings, human and aliens, talking and expressing his point of view. Nevertheless, all those utterances are defined by the player. All dialogues and most of interactions possibilities in the game offer to the player completely different choices which will unroll in completely different possibilities. In this way, though Sheppard can be a well defined character, it's not the game itself that defines him but the player's elections and her power in this definition is so decisive that those choices also result in Sheppard's sexual, moral and public orientation. As a consequence, *Mass Effect* UGC also doesn't have many content in which peak high in creativity and audience reached.

5. Conclusion

While revising User Generated Content of apparently similar games as Halo and Metroid, it was possible to perceive a disproportion in its characteristics. The characteristics in which the UGCs were examined were *Creativity*, *Collective Engagement* and *Audience Reached*. After comparing some specific videogame's narrative properties with the preponderant kind of user generated content based on it, it was possible to observe a tendency: the less specified the game elements are, the more comfortable the player is to change them and the more there is discussions about those elements and what they mean, however, less consensus are accomplished. In addition, the less consensus and common grounds there is about a subject, the more the player will fill out the blanks by herself and the lesser will be the possibility of other players recognize that as truthful, so probably fewer are going to be able to appreciate.

An interesting example of that happened to one of the series studied here but not in the UGD form. The latest game in the Metroid franchise, *Metrois other M* (2010) presents not only a different gameplay of its predecessors but also a different way of presenting the protagonist, Samus. In all previous *Metroids*, Samus was almost a empty canvas so as it was up to the player to bring together a idea of what Samus was besides a bounty hunter and alien smasher. But in *Metroid other M*, the new studio (Team Ninja) responsible by the game decided to present a more clear interpretation of Samus. The result was a somewhat insecure bounty hunter that tried to look tough but break down in many moments of the game. This image of Samus was sufficient for some players and critics, but many of them weren't satisfied at all by this understanding of her. This disagreement conduced to heated discussions¹⁵² and many statements in the class of "this is not Samus", which could be understood as "this is not *my* Samus". Coincidence of not, this was game had one of the weakest sales in the hole *Metroid* series and one of the lowest scores. That makes a rare combination in *Metroid* games, which rarely have had both bad critics and bad sales before; generally slow sellers had great reviews (as *Metroid Prime 2: Echoes*).

This polemics could have been diminished if the developers, Team Ninja, had spent more attention to the videogame's UGD before making a major change like this In the game series. If they had, probably they would have noticed that this sole image of Samus presented by the game wasn't in consensus with the idea of her that most fans have. Perhaps, in better pondering the multiple existences of Samus to extant in *Metroid's* UGD they could have reached a more judicious interpretation.

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The disruption of the Web by the new cognitive paradigm

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1. Introduction

There are several references in the literature (e. g., Torrance 1998, Fecteau et al. 2004, Calcaterra et al. 2005, Fiorina et al. 2007, Pink 2008) to the relationship between the cerebral hemispheres and thought construction forms. The left hemisphere is related to the analytical-sequential cognitive style and the right hemisphere is related to the holistic-intuitive thinking (Calcaterra et al. 2005). We will base ourselves on Torrance (1998) and Pink (2008)'s terminology to name previous descriptions as 'linear thought' – for the left hemisphere - and 'contextual thought' – for the right one.

The linear thought, resulting from the use of the left side of the brain is related to explicit information, mainly bases on a linguistic approach, whereas contextual thought is related with implicit information, that is to say the unconscious information (non-linguistic). The relevance of this distinction lies on the construction of meaning. Hence, people with a predominance of thought related with the activity of the right hemisphere, interpret information basing their cognition mainly on implicit information. This is to say that the linear sequential and logic of the linguistic tools are not the better solution for the triggering of meaning on these kind of mental construction. Contrary to what happens with linear thought construction.

The Internet, as a semantic structure based on hyperlinks between linguistic concepts, has always been aligned with the linear thought approach described above. That is, the logic of the information flow and the manner in which the information in context is structured follows the logic of linear thought.

However, there is support for a shift on the predominance of the brain. McLuhan (1988) mentions that the cognitive shift is due to cultural reasons and also adds that this shift occurs in a continuous process. More recently, several data concerning human behavior were analyzed by Pink (2008) who found that people are now displaying different attitudes to those they had before. For that author this is the result of a change in people's mental framing, which is now more in accordance to the right side brain predominance. This means that there is a change in the construction of meaning, which will affect the use of information. And this should be acknowledged by the web developing area, namely by the scope of browsing and searching actions, representation of information in context, as well as the possibility of a new role for social networks. These social networks are storing information after it is "filtered" by their members, and they serve also as a vehicle that connects thoughts.

Even though the shift seems to be obvious (Pink 2008), along with the benefits of online social networking, this opportunity to draw a new online information flow architecture has

not been acknowledged.

Hence, we understand that a threefold question arises here:

- 1) Is the current structure of the web able to cope with the new mental paradigm?
- 2) If so, how can the web provide a new information flow, based on new information architecture, able to cope with the contextual thought attributes?
- 3) On the other hand, given the increasing trend of sharing through social networks, how can the web architecture benefit from the shared knowledge that results from social networking?

In our opinion, here lies an important issue for web developers, web users and for the solutions of information retrieval that would benefit from a new framework. It is with this in mind that we will try to address this problematic. In the following sections, we will address the shift paradigm issue, the constraints related to a semantic web, the use of a conceptual model of information in context to deliver implicit information, and how information retrieval from human activities can result in a way to generate a new web information flow. Moreover, the McLuhan approach to digital media will be used throughout this process. A new framework will be offered for further empirical use.

2. Literature review

The left-right style of thinking and its meaning

Cerebral predominance – be it right or left – is intimately related with style thinking. Changes on the weights ascribed to left or right predominance will affect meaning construction. Hence, if a heavy weight is given to left side more explicit information will be in use to perform the activity of interpretation. In the same way, if a heavy use of right side is given, more implicit information will be at play.

As other activities, arts, specifically drawing, are normally associated with the right hemisphere functions, while writing and reading are linked with left hemisphere (Pink 2008). Regarding this, Fecteau et al. (2004, p. 551), refer that ‘word reading is one of the most strongly lateralized, showing a left hemisphere advantage’ [13]. The same authors add that the left hemisphere displays some advantages such as helping in tasks that involve word reading and in tasks related with visual stimuli. This is to say semiotic activities, or use of explicit information. Hence, we may see the left hemisphere as the basis of a linguistic frame, being the language a semiotic tool applied namely to construction of meaning and meaning exchange in imagined or real social interaction (Holtgraves et al. 2007).

Nevertheless, even though certain cognitive activities are intimately related with a certain hemisphere, which does not mean that the other is not able to actively participate in the interpretation of information. This means that both sides participate simultaneously in the construction of meaning, albeit in different weightings of activity (Fecteau et al. 2004, p. 562). These latter authors argue that ‘the right hemisphere shows as much evidence of

reading words unconsciously as does the left hemisphere. Thus the classic left hemisphere advantage in word reading is likely only an advantage of conscious access to words presented to that hemisphere' [13]. Therefore, when reading, the unconscious activity of the individual makes use of the implicit information to achieve meaning. Thus, what is explicit through words does not mean the same to everyone.

Chandler (2005) expresses a similar idea, when he refers that 'meaning does not reside *in* a text but arises in its interpretation, and interpretation is shaped by socio-cultural contexts' [9].

Consequently, for individuals with a predominance of thought based on the right hemisphere, when they interpret through reading a semantic concept, they do it with more participation of implicit information (of their unconscious), than individuals of the linear thought. So, for individuals of the contextual thought, the construction of meaning strongly depends on the created context of relations between the explicit information (of the semantic concepts, in the case of reading) and the implicit information of the individual. This is to say, it depends on the stimuli to the individual's unconscious.

In fact, Fiorina et al. (2007, p. 918) says that, 'when students were given hypermedia contents arranged in specific non-linear structures, the best learning results were obtained neither by the analytic individuals nor the holistic ones, but instead by those having an intermediate style' [15]. The authors add that 'The findings of this study suggest that organizing the contents to be learned in a non-linear associative network is not enough to induce people to personalize their interactions with such contents spontaneously' (ibid. p. 937). This happens, in our perspective, not just because the research on the analytic-holistic style is still quite indefinite, but also due to the approach explored by those research works. This means that the approach should not be focused solely on the structure, the hyperlink system should equally be kept in mind. Hence, the approach should also explore the question on how the contents affect the construction of meaning of the individual. This is to say, the manner in which a new kind of information flow could be built, and, consequently, how the hyperlink architecture should be redesigned.

Considering the on-going shift about the predominance of the activity of the hemispheres, from left to right, the issue of how to solve the question concerning the modern-day web for people who do not possess an analytical-sequential thinking arises.

New mental paradigm

Pink (2008) argues that society is predisposed to a new era in which new human abilities are evoked. In this new era, human skills are given preponderance, which encapsulates the shift from left to right. Hence, the unconscious activity becomes rather relevant in the construction of meaning. This is to say that implicit information gains relevance when compared to the explicit one. Calcaterra et al. (2005, p. 445) go in line with Pink (2008) when they refer that 'visual learning style, creativity, tolerance for ambiguousness, non-verbal thinking, preference for humanistic disciplines, broad-mindedness, aesthetic interests, intuitive problem solving' [7] are associated with right hemisphere which characterizes a specific cognitive style – contextual thought. In relation to this cognitive style, Fiorina et al. (2007, p. 918) also mention that: 'intuitive people are inclined to skip steps and trust feelings and impressions; they identify the critical aspects of a situation suddenly and simultaneously and base conclu-

sions on insights' [15].

Some evidence of this brain shift can also be observed through the edited narratives on digital media, which shows a new ongoing trend. Concerning this new trend, Stephens (1998, p. 90) states that: 'words will certainly survive in image communication. They will be read aloud or printed on screen. But their role will change' [39]. So, back in 1998, Stephens was already observing the change in narrative construction, in which image was already gaining relevance compared to word. Thus, we may say that non-linear narrative would assume a new position relatively to the linear one, as a means to express thought. This is already evident if we consider some facts taking place over the web. For instance, 20 million photos have been uploaded on Facebook and 5 billion photos hosted in Flickr (numbers from September 2010). In addition, 35 hours of video have been uploaded to YouTube, every minute, in 2010 (Pingdom, Internet 2010).

In this context, we tend to agree with Stephen (1998, p. 190) when he claims that 'narration and text now often serve as handmaidens to images. At times words are used to point out something in a series of fly-by-images to reduce their ambiguity. At other times words simply underline the thoughts expressed by such a montage' [39]. Johnson (2005) also refers to the new audiovisual narratives saying that they are now more complex. These narratives are calling for a new, more complex, cognitive performance, involving simultaneously thinking, memory, patience, and even emotional intelligence.

In this way, we are witnessing a change to mental construction and the way people express thought. We comprehend that linear thought lies on a linguistic basis and contextual thought on a holistic basis. If, in the first case, an individual performs their cognition by contextualizing the information using a logic-sequential way to interpret information, in the second case it is the non-linguistic aspect that characterizes thought, as well as the activity of the unconscious as a main tool to support the construction of meaning.

The argumentative endeavor to align these areas of understanding will be completed with a twofold issue. One concerns the loss of information quality, when implicit information is made explicit. The other concerns the constraints of the Semantic Web.

However, firstly we would like to underline our theoretical perspective, relatively to the current divergence between the digital media and the new mental paradigm. In this sense, we approach the perspective of Marshal McLuhan, relating to the cognitive shift, within the scope of the electronic media.

McLuhan and meaning

As mentioned by Press (1995), although Marshall McLuhan lived until 1980 and understood computers as a communication medium, he did not discuss it in his work *Understanding Media*, or after its publication. However, when McLuhan claims that, 'the use of new media was the prime cause of fundamental changes in society and the human psyche' [9], he is already projecting the same arguments as ours, concerning to media effects, or in our perspective, how they can reflect mind states, or their narratives. We argued that the web is emulating human narratives, which also illustrates the mentioned brain shift (left to right predominance). In turn, McLuhan et al. 1988, p. 91) did mention that: 'For use in the electric age, a right-hemisphere model of communication is necessary, both because our culture has nearly completed the process of shifting its cognitive modes from the left to the right hemi-

sphere, and because the electronic media themselves are right-hemisphere in their patterns and operation' [29]. Thus, this shows that, before Pink (2008), McLuhan (1988) had already understood the cognitive shift above mentioned, contributing to emphasize the 'shift' argument.

Additionally, McLuhan (1964) also sustained that the electronic media are 'extensions of our nerves' (p. 152) [30]. Therefore, supplementary to this, we add that in the scope of digital media, the web is a representation of the extensions of meaning built by individuals as a way in which current human thought is expressed.

In fact, McLuhan's approach reflects a society where linear thinking is extended to the electronic media. However, as mentioned by Press (1995, p. 16), 'linear thinking may not be as important tomorrow as it was yesterday' [35], being that tomorrow, in 1995, is today. Hence, the 'extensions' referred by McLuhan may be seen today as the bridge between the collective consciousness (relatively to explicit information) and the collective unconsciousness (relatively to implicit information). Being the concepts of 'collective conscious' and 'collective unconscious', as proposed by Carl Jung (1959) and mentioned by Jones (2003).

In this sense, we can reinforce our argumentation about the fact that we are witnessing the embodiment of thought through the *medium*. Through the *medium* we all are collectively sharing the broad amplitude of the construction of meaning, with its conscious and unconscious components. In fact, 'What before was a mental process, a uniquely individual state, now became part of a public sphere. [...] Interactive computer media perfectly fits this trend to externalize and objectify mind's operations' (Manovich 2001, p. 60) [28].

The eventual loss of information when implicit information is made explicit

Calcaterra et al. (2005, p. 455) argue that 'browsing behavior affects learning from a hypermedia, but such behavior is not influenced by thinking style' [7]. This means that individuals do not have a specific (browsing) behavior due to their cerebral predominance. However, the way they learn (how they build meaning) depends on the cognitive appeal created by the information and its organization. Therefore, depending on the cerebral prevalence, individuals have different ways of acquiring and organizing information. This was inferred by Calcaterra et al. (2005) who stated that 'students who privileged the holistic sections and who showed preferences toward holistic processing tended to develop map (that is, holistic rather than linear-sequential) representations of the acquired knowledge' (p. 454) [7]. Thus, if cognitive 'style did influence the format of the acquired knowledge' (ibid. p. 455) [7], then the basis on which that knowledge acquisition is provided is relevant. Our stand is that the current web architecture is structured by a linguistic paradigm, so it is not in accordance with the new cerebral predominance. However, we cannot avoid the current semantic structure of the web. Thus, it is necessary to achieve a compromise.

Nonetheless, it is also relevant to note that the current web architecture is an extension of the mental construction for people of linear thought. However, attending to the mentioned shift on the predominance of thought, the web, for these people (that might become the majority), does not induce the mentioned extension. On the contrary, it is inhibited. Thus, the constraints on online information access lies on the support and stimuli to the implicit information, as on opposite way happens for the explicit one. Thus, the challenge it is how to avoid loss of quality related with the construction of meaning.

In fact, if albeit, in the scope of other approaches, some authors had already mentioned the loss of quality (Holtgraves et al. 2007, Wilson and Schooler cited by Gawronski 2005) when people need to translate their thinking into a linguistic structure.

Hence, it seems that 'the creation of a linguistic message can influence the nature of one's thoughts' and thus, 'the verbalization about a decision making interferes on the process. No verbalizing the decision helps to make the best decision' (Holtgraves et al. 2007, p. 76) [21]. The loss of quality is caused by the confrontation between information organized unconsciously and the one that is turned explicit through a linguistic basis. Other examples of that loss of quality are mentioned by Gawronski et al. (2005, p. 487) when they say that 'People often have no conscious access to the causes of their attitudes, and that introspection about the reasons for their attitudes can lead them to make ill-advised choices' [20]. Once again, the translation into the explicit of what was built implicitly results in some quality loss of the information.

Next, we present how the web is constrained by its own semantic structure and, consequently, how this reinforces the problematic raised here.

Limitations and constraints of the semantic web

Whereas a new mental paradigm is gaining form, the web keeps using a semantic approach rooted in solutions based on linear thought. Therefore, there is a divergence here that needs to be addressed, as the trend of the approach of the semantic web reveals.

In 2001, referring to Berners-Lee's (1999) work, Ding mentioned that the World Wide Web was living a new technological shift with the Semantic Web. For Ding (2001, p. 2) this new web provides 'many more automated services based on machine-processable semantics of data and heuristics that make use of these metadata' [11]. However, in 2010, the same author mentioned that 'data are represented in widely different syntax and semantics, the tasks of integrating data may be profoundly complex' (p. 337) [11], which describes a reality that seems to be more complex than was anticipated. This seems to say that, in spite the hard work of the scientific community, the problem has not been solved, possibly because the solution is not technologically-rooted. In fact, the solution seems to be more cognitive-rooted.

In this manner, we can see that from 1999 up till now, no major changes have occurred, seeing as presently, we are still claiming the same solutions. In fact, when analyzing data from Scopus about the most cited articles on the topics of "semantics" and "ontologies" (between 2005-09) (Ding 2010), one notes that the thematic raised by the article of Berners-Lee (1999) presented ten years ago, still remains updated. The number of citations illustrates the continuous investment made by the scientific community to achieve an automated Web, as was suggested by the initial vision of the founder of the WWW.

In fact, 'The structural and syntactic web put in place in the early 90s is still much the same as what we use today: resources (web pages, files, etc.) connected by untyped hyperlinks. By untyped, we mean that there is no easy way for a computer to figure out what a link between two pages means' (Breslin 2009, p. 55) [6].

So, we may argue that the difficulties of expansion and consolidation of an architecture based on the Semantic Web may lie not on the technological development but rather on the ability of the model to respond to cognitive factors. These cognitive factors are highly important namely attending to the new mental paradigm, which leads to a new trend, a trend

that does not impose a new technology but which suggests new approaches on how it can be used.

Thus, next, we address our proposal, whose focus is the online human activity on social networks.

Scale-free networks on social networking

Scale-free networks can be described by the so-called power law mathematical function (Barabasi et al. 1999), which illustrates ‘the distribution of the number of network neighbors – the degree distribution – is typically right-skewed with a “heavy tail”’ (Watts 2004, p. 250) [44]. These networks, which are like many real networks in nature and society, display a high degree of clustering (Ravasz & Barabasi 2008). Ravasz and Barabási mention that social networks, like other kind of networks, having a modular topology, are formed by many small clusters, which are densely interconnected and from which other clusters can be combined. From that ‘even larger and less interconnected clusters’ (Ravasz & Barabasi 2008, p. 6) [36] can be formed, forcing ‘a strict fine structure on real networks’ (ibid., p. 6) [36]. In these networks, the hubs play a relevant role in bridging between small communities of clusters and consequently, in keeping the integrity of the network. The hubs are, therefore, an important mechanism for scale-free networks, since these networks are built through the addition of new entities (nodes). Hence, the growing predominance of connections through an entity (node), increase; ‘the more connections an entity within a network has, the more likely a new network would connect with it, creating network “hubs”’ (Glassman et al. 2010, p. 1415) [16]. In this sense, as mentioned by these authors, ‘The scale-free model suggests that networks displays “preferential attachment” (Albert & Barabasi 2002) where connectivity is determined by the amount or “degree” of connections a node already has within the network’ (p. 1415) [16]. However, the hubs can be displaced from their position as a node of “preferential attachment”. This to say that, and noting the case of our model, a decrease on positive feedback from a hub can lead to its slow extinction - being nevertheless, replaced by other(s) hub(s) (Albert & Barabasi 2002).

The scale-free network is also present on so called small world phenomena (Milgram 1967), which can describe a real world social network. The small world exposes the phenomenon of everyone being connected to anyone through a mere short chain of acquaintances. Later, Watts and Strogatz (1998) formalized mathematically the structure of a small world network. In turn, Watts (2004) citing the works of Kleinberg (2000), explains how the serious problem on the small world network model of Watts and Strogatz (1998) was solved, saying ‘Social networks are not only small; they are searchable’ (Watts 2004, 247) [44]. Meaning that ‘network structure is important not only locally’ (ibid., p. 248) [44], i.e. the individual can access information or resources in their neighborhood, but also globally, making it, thus, possible to navigate outside one’s neighborhood, when searching for information and resources.

Our model will be, in this manner, be theoretically supported by these works. Similar results are also found by Glassman et al. (2010, p. 1418) when they argue that ‘the Internet is actually the externalization of human thinking processes’ [16], which moreover reinforces our approach. The authors add to this that ‘the process of thinking move reciprocally and dynamically in the form of social networks and hubs (e.g. communities, sites) of knowing’ (Glassman et al. 2010, p. 1418) [16].

In the perspective of our model, i.e., inside the network, there are other networks from which we can extract value. The value is based on the knowledge possessed by their members, from which new similarities can be established between these. Hence, the information flow architecture on web, in this context, should be reconsidered, since the connections between people, and so the communication process, could be much more than physical interaction.

3. Proposal of Framework

Before discussing our model, we will direct our attention to some topics from other works that approach some issues also raised in our proposal.

Works that approach similar issues relative to our framework

Feldstein (2009, p. 15) proposes a conceptual approach to build a model that articulates online user's narratives 'which can accommodate structure as well as meaning' [14]. The author intends to develop a method that preserves the narrative context, without using a database approach, because, as the author says, it 'does not provide information in its original context' (ibid. p. 7) [14]. The author remarks in his analysis that 'texts can be coded and analyzed as networks of concepts often referred to as maps or semantic networks' (ibid. p. 14) [14]. We, along with Feldstein, intend to create context towards social intervention. Nevertheless, we propose a different approach since the semantic basis is not used to create the respective contexts. Instead, we will build the information of context from the information retrieved from the social networks.

Adamic et al. (2003) characterized the relationships between people studying their homepage connections. The objective was to find similarities between individuals through the virtual and real world communities of people. The authors studied the networks of personal homepages at Stanford and at MIT and proved that networks obey to the small-world graph, as defined by Watts and Strogatz (1998).

In turn, Piscitelli et al. (2010, p. 80) using the example of Facebook, refer that: 'Facebook seeks to reinvent what we understand by searching on the web, which would then be based on the information of our social context rather than on the algorithms of Google' [34]. Similarly, in fact, we propose in our model the use of the information from social networks. However, we mean to do it suggesting a solution that personalizes the context from the explicit and implicit understanding of the information, from each one, benefiting from the activities developed inside the network.

Moreover, we tend to agree with Hugo Pardo Kuklinski (2009), that mentions the concept of 'centrifuge websites' [26] as platforms that tend to expel its users, in opposition to the concept of 'centripetal websites' [26], which tries to keep them locked in the platform.

Last but not least, we would like to address the proposal of Golbeck et al. (2007) which also have some similarities with our framework. These authors suggest integrating 'social networking information into the user's browsing experience' (Golbeck et al. 2007, p. 2382) [17] using a Firefox extension. The idea it is to create additional contextual information, loaded from other sites, on the subject browsed by the user. This means completing contextual infor-

mation with data on what others are saying about the browsed subject. We agree with this.

Comparative analysis

Comparatively to Feldstein (2009), our approach does not intend to work just at a semantic level. In fact, we consider that, at this level, it is not possible to have full understanding of the meaning behind the concepts or behind people's ideas (especially in the range of the new mental paradigm). Thus, we consider some additional variables, namely the implicit information that also build the meaning and a model based on a social flow of information, to build a new information flow, which it is not linear - sequential.

Concerning the Adamic et al. (2003) proposal, we agree with the approach of their algorithm to figure out similarities between individuals. However, we intend to find similarities beyond the virtual or physical connections between friends and neighbors. This is to say that we propose, as similarities, the potential of someone to affect another by triggering their implicit perception on a given subject.

With regard to the analysis of Piscitelli et al. (2010) the similarities to our approach are based on the use of social activities to create solutions typically assigned to machines. Thus, through activities such as editing, clustering and sharing, it is possible to turn social networks into an implicit filtering, classification and recommendation tool.

In the perspective of 'centrifuge' and 'centripetal' websites, mentioned by Kuklinski (2009), we believe that we can benefit from both.

Regarding the Golbeck et al. (2007) proposal, despite the convergence of objectives, we intend to approach a new kind of agenda: we plan to include new perspectives on information context. It is our intention to take in possible consideration cognitive affinities among people, through their activities and connections on social networks.

Our proposal

In order to explain our framework, we think that it would be appropriate to count on the cooperation of two areas of understanding, as core components of our theoretical framework. We intend to use them on the task of answering the research questions above proposed.

Accordingly, at a first stage we suggest a model to find implicit information inside the social network of a user (in which is a subscriber) that is browsing in a website. This user is our target-user. The implicit is thus, to be used as a cognitive trigger for the target-user. This is to say, with the information that can help complete the construction of their meaning.

Secondly, and as an archetype, we use the context information, in order to show the information retrieved from the social network, as a new way to build the information flow, thus, avoiding the semantic approach to contextualize information.

The objective is to give a larger range of perspectives about the browsed concept (or information) through some components of implicit information. So, with our proposal we intend to find information that can be implicit for the target-user, being this information that which was published by someone on their social network (being this, their explicit information). In this sense, we propose a theoretical model that justifies the paths between those users. We

seek to justify this model using some theories on social networking.

The framework suggests the use of a target site which is associated to the component of context, whose contents are loaded from the social network of the target-user. In this manner, the proposed model can also create a more holistic view of the information, consequently, closer to a non-linguistic basis.

Our model attempts to tackle three main challenges:

- a) Creating connections between concepts – the relationships between concepts are weighted and based on human interpretations (firstly, by the publisher of the content; secondly, by the members of their social network that comment the topic, eventually);
- b) Using non-linear contents (namely images and video) to emphasize the component of the implicit information;
- c) Approaching the possibility of creating information contexts that can be understood as both implicit and explicit determined, however, by degrees of separation, inferred from the network of the target-user.

Hence, additionally, in order to build the model, we need the support of two other concepts: Information retrieval from social networks and user-recognition about the usefulness of the information published, through the feedback of the target-user.

Items retrieved from social networks

In order to retrieve information from a social network that can cognitively affect the target-user (in the scope of their browsing activities), we look at the ties that surround the user. However, the information to be retrieved needs to be from other users that have a connection with the target-user. Thus, to determine this connection, and in order to weight the information retrieved, we take into account some models of social network theories (Granovetter 1973; Miller 1967). According to these theories, determining the relationships between the members of a network is crucial. In the same way, it is important to understand patterns of connections among members and the influence they may have on each other's satisfaction of needs.

Thus, in order to describe relationships between individuals, within a group, we will use 'The Strength of weak Ties' approach (Granovetter 1973). We will also assume that relationships among the members of a network are not 'simply random'. Between them there is some type of governance, as proposed by Granovetter (1973). This author refers that in the circles of social relationships there are individuals that establish ties with members of other networks. These ties are called 'weak ties' because they are built by individuals at a distance from each other. However, these ties bring access to resources and end up by being strong instead of weak. This strength of the weak ties is based on the benefit retrieved from relationships.

Within our framework, the first ring is a social one where closer circle of connections reside. Thus, we speculate that, in this first circle, reside the items of information that contextualize the explicit information of the user-target. This means, completing their conscious information about the topic that is accessing, through their browsing.

Now, in approaching the work of Milgram (1967) - 'The Small-World Problem' - and comparing this work with the work of Granovetter (1973), we can regard the users, of the social

network, that are the 'weak ties' as 'degrees of separation' (Watts 1999, 2003). So, we will use the weak ties in order to achieve other social rings, but keeping a path of trust between people (assuming that there is a same level of understanding about similar topics). Hence, the connections promoted from this perspective are not made in a random manner, but in such a manner that we are able to benefit from the trust between the members of the different rings. Trust is assured and established by the members that play the role of the weak ties. Therefore, connections among individuals take the shape of a graph. This model of graphs allows the creation of an 'aggregated interconnected' (Lima 2005, p. 69) [27], which are social rings linked with each other forming chains of close connections. Hence, we are building chains for a new kind of information flow, which participates on meaning construction for the users. This meaning is built with information that represents different perspectives, to the target-user, retrieved from their social network, but also with information that can trigger their implicit information about the corresponding browsed topic.

In this sense, the linked chains, between aggregates permits the retrieval of information from different degrees of separation.

Therefore, we speculate that from more distant social rings (with more than one degree of separation) there is implicit information for the target-user. This because the distance from the far ring and the ring of strong ties (relative to the target-user) increases the probability of the target-user to be served with information that he does not know. In turn, the attempt to avoid random connections between the topics (browsed and retrieved) is based on the chain of links bound by trust. Those chains of trust established by the 'weak ties' are also the mechanism used to find the similarities between members, from which the retrieval model has its fundament.

Recognition of the Information in context

The model also includes the concept of 'preferential attachment' (Barabási 2002, p. 86) [3]. Thus, the model can consider some members of the social network as 'hubs'. This means members that are more active and accordingly, more available for more positive feedbacks from the target-user. Hence, in our model, aside the relevance of the connections between people and concepts, the members' activity, as well as the recognition feedback sent by the target-user, is relevant to find the level of similarity between users.

Therefore, from the perspective of the recognition rank system, we think that this system can be used as a mechanism to continuously ameliorate the algorithm of the described model. On the other hand, it might also be possible to give a new meaning to people that participate with contents and comments on social networks.

And as mentioned by Santos et al. (2005), being a scale-free network, the probability of cooperation between members might increase. The same authors (2006) also say that 'heterogeneity constitutes a powerful mechanism for the emergence of cooperation, because, even for mildly heterogeneous populations, heterogeneity leads to sizeable effects in the evolution of cooperation.' (p. 3493) [38].

As a result, from a perspective of a recognition rank system, we think this solution can be applied to our framework to continuously ameliorate the algorithm of the described model. On the other hand, might be equally possible create a new goal of social participation on social networks, in the scope of the corresponding contents and comments.

4. Conclusions

With this proposal we sought to raise the issue of web development in the context of a new mental paradigm. In this regard, we propose a theoretical model that gives the user a browsing experience that will aid him/her in the interpretation of information. This form of interpretation, being based on a more implicit than explicit, more holistic than linear processing, needs a new approach on the side of the digital media, including a new outline to base the web information architecture, in order to accomplish the new concept of flow of information.

We attempt to address a solution that explores the benefits of human activity on social networks. This activity, if analyzed from the perspective of relations between individuals, not randomly, and deriving from factors of similarity, then we think it is possible to establish a new framework of social relations, and therefore, possible to build custom information flows (at the cognitive level of each user). That is, to circumvent the linearity of the current web architecture, heavily based on relationships established between concepts stored in databases and without the possibility of human connection between themselves. Contexts, which in the current web solutions, are determined by semantic relationships, or from the analysis of users' activities.

In this sense, with the proposed framework, we believe it is possible to qualitatively study and measure some of the effects, on the user's side, with this new way of architecting the flow of information. Thus, some possible metrics were based on surprise, on the appropriateness, or on the relevance of the information presented to the target-user.

We believe, therefore, that with the presented approach, it is possible to study to what degree of separation the information of members of a social network will be perceived or received as a stimulus for activation of its implicit information, for a better understanding of the approached concepts.

Thus, in view of the above, the hyperlink is no longer a mere link between semantic concepts, and becomes a vehicle to support the construction of meaning (in its full extent, explicit and implicit) and is strongly based on human knowledge construction (in interpretation).

Finally, since our proposal is based on a conceptual model, it does have natural limitations. However, we attempt to point out some clues for further research, which we consider to be relevant:

- a) Quantify to what degree of social distance from the first social ring it is more effective to extend the information collection model in order to generate contexts;
- b) Determine which would be the most suitable relationship between implicit information and the degrees of separation;
- c) Determine which holistic browsing solutions allow for a more effective cognitive stimulus;
- d) Quantify / qualify the shared or available social capital between members whose interaction results from the assumption of similarities between them and thus, the sharing and understanding of concepts. Concurrently, between what is explicit for some and implicit for others, how the pairs interact and their levels of knowledge evolve.

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Digital Social Media in a Free Software Project: Community, Identity and Trust Building

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1. Introduction

The ethnographic research on which this paper is based¹⁵³ began with the intention of understanding the social and symbolic practices that constitute what is known as 'The Free Software Community.' This community consists of geographically dispersed individuals, who are interrelated through a highly specialized and technologically sophisticated, as well as politically and ethically loaded activity: writing and distributing free software.¹⁵⁴

The main question that led me to investigate this field was the interest to understand the possible relationships between Gift and Reciprocity, as they have been studied by classical anthropology since Mauss [12], and the construction of a form of relationship and organization that could be called 'community.' All of this in a context defined by the mediation of relationships through networks and computer applications. That is to say, a context where the expectations and suppositions that emerge from face-to-face interaction and co-presence are not applicable. This approach involves regarding Free Software as a 'gift,' as an object that carries in itself the expectation of a kind of reciprocity that goes beyond any individual calculation, supporting, in its circulation, interpersonal links beyond strategic interactions.

In this paper, I intend to contribute to the reflection on the role that new social media, specifically digital social media, play in the emergence and self-organization of online communities. Using some results from the ethnographic research that I am conducting on the Debian Project¹⁵⁵, the paper will show how these new media contribute to shape a new kind of locality where social interactions take place. For this, it is necessary to take into account the specific characteristics of these media and technologies, as well as their influence on the forms of communication that they make possible.

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154 Possibly the most complete anthropological study on Free Software is [11]. For a definition, see [11, p. 2] and [8].

155 See <http://www.debian.org>

2. Field Work in Debian. Strategies and Methodologies

The first step in my research was to specify an empirical field to conduct the field work. Since it is a symbolically presented object, it is not possible to directly observe the Free Software community. If our aim is to understand the discursive and symbolic processes that constitute such a community, we can-not take their existence as a natural object that we can simply approach as external observers for granted. So we need to look for an empirical field where those processes take place.

The main social space that appeared adequate to develop this research was that of the Debian Developers group (about a thousand volunteers all over the world). Debian is not only one of the major GNU/Linux distributions, but is also the one most committed to the freedom of software, as well as to the existence of a Free Software community. Actually, one of its fundamental constituent documents is its "Social Contract with the Free Software Community" [7].

Once the empirical field of research was decided, I had to gain access to this field. The first problem was the lack of a physical place to approach. It was necessary, then, to use virtual ethnography as a mode of access to field work. That is to say, the use of, and communication through, digital media appeared as a requisite in order to understand and describe this form of life. So, since January 2009 I have been following some of the main electronic media related to the Debian Project: the main mailing lists and IRC channels, the Bug Tracking System, the Project website, and a number of personal blogs.

Since Debian is a project based on volunteer work, it was clear from the beginning that the best way of building a presence that allowed me to practice participant observation was finding a way to collaborate on the project. And, since the origin of my research project was my interest in the relationship between Gift and community building, gaining access in that way was not only a practical necessity, but also an essential source of ethnographic knowledge. So, in January 2009 I began to collaborate in the Spanish translation of some parts of the software distributed by Debian.

My research is also based on face-to-face interaction. In 2009 and 2010, I attended the annual Conferences of the Debian Project, called DebConf. In these Conferences, Debian Developers, and people involved with the Project in some way gather for two weeks in the summer in order to work together, discuss some broad issues related to the Project, meet personally, and simply hang out. In April 2009, I also attended the local Debian Conference in Spain, the DudesConf.

I also carried out a series of interviews, 35 in total, with participants in the Debian Project, most of them Debian Developers. I have also been commenting on the answers of some of the participants, mostly via e-mail.

3. The (Very Brief) State of the Question: Virtual Ethnography through New Digital Media

The present context of globalization of cultural forms poses the problem of how to preserve holism, how to represent the totality in an alternative way to the closed community, renouncing the assumptions that made it the privileged object of anthropological research.

There is already a tradition of ethnographic studies on 'online communities' [18], [4], that are typically portrayed as relying on Computer Mediated Communication (CMC). In this kind of community, as in networks, the problem is obvious: almost by definition, there is no context that contains the reality we want to know. Thus, we have to try to epistemologically justify the ethnographic activity in contexts where the flow of people, knowledge and meanings makes the use of a meaning of 'culture' as closed and self-contained difficult [6, p. 161].

The first reflections on the ethnographic work through digital media were focused on the predicaments that these new media imposed on carrying out field work. As an illustration of this perspective, we can refer to the works of authors like Hamman [9] or Wittel [19]. The main issues these authors are skeptical about are, in short, the loss of information in a form of communication confined to its textual features, and the impossibility of determining the offline identity of the participants. The problem with these views is that they take an absolute separation between online and offline realities for granted. These studies were commonly based on a theoretical and abstract analysis of the technological possibilities of new digital media, instead of observing what people are actually doing in their online interactions.

An example of this alternative strategy is found in Baym [3], who shows how the limited resources and structures of electronic communications are creatively used to develop social meanings and identities. Baym asks a distinctively ethnographic question: "What occurs online that leads some people to experience them as communities?" [3, p. 38]. She builds a model of online communities based on the emergence of different forms of expression, identities, relationships and behavioral norms that emerge from the interaction itself. Hine also, in her already classic 'Virtual Ethnography' [10], has thought systematically about the circumstances and possibilities of virtual ethnography. In order to take an ethnographic stance towards Internet and the new digital media, the focus must be on the meaning that participants give to their activities and the relationships they establish. Thus, for instance, the lack of face-to-face interaction in virtual ethnography was considered in terms of authenticity of identity, and as entailing the risk of deceit. Hine's proposal is to avoid taking this as a prior methodological issue, but as a topic for empirical research. Thus, the relevant question should be: How is authenticity built and evaluated by the subjects in the field? What meaning do they give to it? Also, Miller and Slater [14] insist on the advice of keeping a local perspective in ethnographic research on Internet: "The internet is not a monolithic or placeless 'cyberspace'; rather, it is numerous new technologies, used by diverse people, in diverse real-world locations" [14, p. 1].

Ultimately, the main methodological lesson we can extract from these perspectives is that the starting point should not be an 'a priori' reflection on the technological characteristics of the media, but what happens in the field. It is the social practices (even if they are inseparable from their technological mediation), and not the technologies, that pose and resolve (even if partially and temporarily) the relevant issues for the ethnographer.

So, if we give up the appearance of totality offered by the supposedly self-contained realm of 'cyberspace,' the 'a priori' categorization of the Debian Project as a 'virtual community,' what coordinates can we use to begin to draw the limits of this social space? As Miller and Slater say, "[r]ather than starting from virtuality, then, we are concerned to start our investigation from within the complex ethnographic experience" [14 p. 6]. It is precisely because this ethnographic experience is complex that we can begin to assess the complexity of the social space we are trying to describe.

4. The Social Space of the Debian Project

The social life of the Debian Project is neither limited to some definite geographic region, nor is the time in which events occur homogeneous. On the contrary, we find here a geographically dispersed 'community' with heterogeneous temporal rhythms. In spite of this, we can still talk about 'locality,' since the new electronic social media contribute to build a networked space. These social spaces involve a process of 'territorialization,' a process of building these spaces as places where definite social events and interactions take place. If, following Appadurai [2], deterritorialization involves the dissolution of ties between people, cultures and territories, what we find here is the construction of new links between people, forms of social interaction, and specific spaces.

In this process of locality building, the role that digital media play is fundamental. Even more than the content circulating through these media, we need to study the kind of space built by their mere existence as media. Here, as McLuhan [13] expressed, 'the medium is the message,' able to build a space independently of its content.

Kelty also expresses this idea when he proposes his concept of 'recursive public' as characteristic of the free software phenomenon:

Recursive publics are "recursive" [...] also because they are concerned with the depth or strata of this self-grounding: the layers of technical and legal infrastructure which are necessary for, say, the Internet to exist as the infrastructure of a public. [11, p. 8]

Indeed, the Debian Project not only creates a software distribution. It also develops and maintains all the needed infrastructure, including the digital communication and collaboration media that make it possible. This makes of it a recursive public, interested not only in the content or the messages that flow through their media, but also in their constitution. If McLuhan is right, this is essential to building the social space of Debian, since "'the medium is the message' because it is the medium that shapes and controls the scale and form of human association and action" [13, p. 9]. And this in turn contributes to the 'culture of freedom' that distinguishes the Project, that, as expressed by a Developer in his blog, "is free from the ground up, including its infrastructure" [20] and therefore the media it uses.

Thus, the social space of Debian is a complex space, in-so-far as it consists of a multiplicity of partial spaces. Understanding the construction of these spaces and their interrelationships is essential to understand the meaning of what the 'Debian community' would be, since the meaning of what a 'community' is, is essentially linked to the spaces in which it is experimented. We can then ask: How is there is 'community' where there are only partial relationships and connections between subjects? What kind of 'identity' and 'community' formation do the new digital social media promote? How are social identities constructed in this field, and how do they relate to other forms of identity?

These topics can be best understood taking DebConf as an example.

4.1 The DebConf Conference

Every year, since 2000, the Debian Project holds a meeting called Debconf (Debian Conference) where its members come together for two weeks. During that time, there are talks about different aspects of the Project, workshops in which different teams boost their collaborative work in certain areas of the Project, and people who have been working together

through electronic media meet in person. Because of the international nature of the Project, each year the Conference is held in a different country.

Since this is the main event for the Project members to meet face-to-face, it is also a privileged moment to participate in and observe the social interactions between Debian members. Coleman [5] explains the importance that face-to-face meetings have for hackers:

the Conference is culturally significant because it allows hackers to collectively enact, make visible, and subsequently celebrate many elements of their quotidian technological lifeworld, whether it is by laying down cable, setting up a server, giving talks about technology, or hacking up some new source code—all of which unfolds in an emotionally charged setting [5, p. 102].

In this paper I will just present two points about the Conference that are relevant to the topic under discussion. First, I will try to analyze some features of the Conference's spatio-temporal configuration. Second, I will consider this face-to-face meeting as a space that is not opposed to online communication. On the contrary, it explicitly shows the blending and interrelationship between different communication and collaborative electronic media, as well as between these and the presentiality of face-to-face meetings.

Regarding the first question, the first thing to be pointed out is that the DebConf does not work as a unique place, but as a fragmentary space, a heterogeneous collection of spaces and places in which we find different principles of organization. Indeed, the moments in which (nearly) all the attendees are gathered together are the opening and closing ceremonies, a formal dinner and the group picture. And yet, at the same time, the DebConf becomes a time and place that is able to bring together and assemble the practices and activities of the attendees, but also of those who, not physically present, follow the events through digital media. Thus, it is habitual to use that time to make announcements affecting the Debian distribution, make changes in the Project, and mark collective and personal changes.

The main spaces are the talk rooms and the hacklabs. The talks usually consist of a presentation, often by a Debian Developer, on topics ranging from the analysis of different kinds of licenses to the Project infrastructure, from the demonstration of different development tools to proposals for improving the interaction between Project members.

A hacklab is a space where hackers meet to work, independently or in groups. It is a room furnished with as many tables and chairs as possible, enough plugs to keep a large number of computers working, and a network to access the Internet. In the hacklabs we find simultaneously technical work and social interaction, face-to-face communication and communication through electronic media, such as IRC. Therefore, they can be considered the heart of the DebConf, the place where the interactions and social life of Debian can be best observed. And where it becomes evident that the life of the Debian Project can-not be followed without making use of electronic media. If you are in a hacklab, you need to be connected at least to IRC to see what is happening right there. In these spaces it is easy to observe people working alone on their computers for hours, collaborating in common tasks around a computer, or simply chatting about anything. Regardless of what is going on in other spaces in the Conference, there are always people working in the hacklabs.

If the Conference brings a large number of the Debian members and contributors together in the same geographical space, without ceasing to be a heterogeneous conjunction of places, the same occurs with time. Although during the time that the Conference lasts the talks schedule works as a kind of common temporal axis, the fact is that the temporal rhythms of

the attendees do not always coincide. And above all, they do not correspond to conventional divisions between work time and leisure time, day and night, time for collaborative work on some common project and time for joyful socialization.

In any case, the most characteristic feature of the times and spaces of the Project, including this annual Conference, is that they are self-organized. In this self-organization, not only the dynamics of face-to-face interaction plays a key role, but, inevitably, so does the electronic media of communication and collaboration.

Among these media, and in the case of DebConf, the most important are the mailing lists related to the Conference (Debconf-discuss and Debconf-announce), heavily used during these days, as is the IRC channel #debconf. The wiki set up for the event (<http://wiki.debconf.org>) is also fundamental. Here all the needed information is constantly updated, from the arrangement of sports competitions on the fly to the coordination of trips to and from the DebConf. Being a wiki, anyone can create a page with the information he finds relevant, or edit the existing ones. The mailing lists are used in a similar way. From reminders of important dates and activities to proposals for new activities, meetings or workshops, request for volunteers or questions about the town, the best way of keeping up to date with what is happening at the Conference is to pay attention to them.

But the communication medium 'par excellence' in a DebConf is, without a doubt, IRC (Internet Relay Chat). The IRC channels provide a sort of common space that gathers a large number of concurrent conversations on a wide range of subjects. They are used to commenting on what is happening at the Conference, coordinate the organization, collaborate in some project, ask for technical help, or simply for a casual chat. Since the attendees do not spend much time away from their computers, it is the fastest medium to contact someone. Even during the talks or the work meetings it is usual to see the participants staying connected and in contact through this medium. Thus, it is common for the public in a talk to make comments on it through IRC, from inside the talk room itself, or even from the outside if they are following it on streaming.

As I have pointed out, means of communication in Debian, and specifically in the context of DebConf, are not used in isolation, reserving each communication channel for a particular kind of communication or topic. The main feature of the communication inside the Debian Project is precisely the combination and blending, at the same time and often even at the same place, of different and diverse channels.

As an example, I will discuss one of the work meetings I attended in DebConf9, held in Caceres. It was proposed as a coordination meeting for those Debian members interested in the internationalization of the distribution, the process of adapting it to other languages and local conventions. The work session was held in one of the talk rooms, and it was offered on streaming, so that it was reachable from any place with an Internet connection. It could also be followed on IRC, and this channel was also used to check if it could be seen and heard from the outside. Thus, although there were only 17 attendees in person, at the beginning of the meeting there were at least 67 people attending the electronic channels. This arrangement allowed for participation in the meeting from anywhere in the Conference, even from anywhere in the world. One participant informs through IRC of what is happening and the topics under discussion, so that the participation of those not physically present is effective.

A further effect is that the channel log may serve as the minutes of the meeting, and anybody can participate in preparing them. Afterwards, a report of these work sessions is published in the mailing list devoted to the internationalization and localization of Debian.

In sum, and as I said before, it would be misleading to conceive face-to-face meetings as opposed to online communication. Both contexts are inextricably related, and not only in the DebConf case. This is the event that, every year, tries to bring together the members of the Debian community, but efforts are increasingly made to celebrate face-to-face meetings by different teams inside the distribution. Furthermore, the effects of these meetings go far beyond the moment they take place; they are felt throughout the whole year, and contribute to give form to the experience of online communication itself, as can be observed in these interview fragments:

henry: [on the face-to-face interaction in DebConfs] I think that is a good picture of people in Debian, being more than only technical enthusiasts working on technical stuff. [...] interaction by electronic media is fake in some way, and having the opportunity to meet people in real life makes things much much smoother.

thomas: email is a very difficult medium [...], there's lots of information missing you have in a direct contact, so sometimes I am not sure what people mean or how they feel about things, [...] having met the people and seeing that they are really nice guys I can get along with and I, seeing how they have fun or something like that, will change the way I perceive stuff I read from them, on IRC or on the mailing lists, I think it will make it more, I think I will in a way enjoy it more, but also it will be easier to work together, to do stuff, cause I sort of, I don't know them well, you know?, but I have some impression of the person behind the other computer.

As Coleman writes, "Hacker cons occur infrequently but consistently. They reconfigure the relationship between time, space, and persons; allow for a series of personal transformations; and perhaps most significantly, reinforce group solidarity" [5, p. 104]. Or, in the words of a Debian Developer in an interview:

stephen: [asked about the importance of DebConfs] Well, the most important thing is seeing lots of this people that I'm working with on line. And hanging out with them and talking with them, not necessarily about the work that we need to do, but just becoming friends or reestablishing social connections. [...] to leave DebConf and then people become IRC nicks and it's just text and very one-dimension, you remember what they look like, and you remember who you get along more than other people, and it helps mediate the online communication more, [...] so adds some of this dimensions to communication, virtual communication that we don't have. Those things are one of the, that's one of the most important things for me being here.

5. The (re)Construction of a Dense 'Virtual' Space

On the basis of the ethnographic data, two relevant results can be established about the space in which the social practices of the Debian community take place. The first one is the impossibility of upholding a dualism between online and offline forms of interaction. Thus, when two people are talking on IRC, sitting in the same room, probably making an appointment to meet five minutes later, or commenting on the ambience of the place in which both are physically present, is that an online or offline kind of communication? The second result is the impossibility of conceptualizing the Debian Project, or the Debian community, as a

‘virtual community,’ defined by some kind of clearly delimited virtual space, even if it is a group that communicates primarily through electronic media.

In order to understand the peculiar features of this social space, I propose using the concept of ‘dense virtual space,’¹⁵⁶ even if we should maintain our skepticism about the suitability of the term ‘virtual,’ with all its ambiguities. What I intend to show is that the social space of Debian is a complex one, like any social space regardless of its actualization by electronic or face-to-face media. The concept I am proposing enables us to understand the characteristics of this collective space; although it is a space that is located mainly online, it can-not be properly categorized in the terms of theorizing about ‘virtual’ or ‘online communities,’ or the features of ‘cyberspace.’

The basic idea behind this expression is that there is a variety of spaces in which social practices and interactions take place: face-to-face meetings, IRC channels, mailing lists, blogs, bug tracking systems, version control systems, wikis, etc., most of them of the kind traditionally defined as ‘virtual,’ not dependent on physical co-presentiality. They have been often, therefore, been understood as a special domain, a space (‘virtual’ or ‘cyberspace’) released from the constraints of what is assumed to be properly ‘real.’ But these multiple ‘virtual’ spaces do not exist in a parallel way, alongside but not intertwining with each other. A more suitable visual representation would be that they are one above another (without presuming hierarchies among them), occupying the same social space, inasmuch as the same events and practices circulate among them, moving from one to the other. In the same way that verbal and non-verbal communication are not two different communication domains, but both inseparable aspects of the same communicative act.

My hypothesis is that this multi-dimensionality is what gives ‘density’ to the social space of the Debian Project. In some way, the accumulation of ‘virtual spaces’ restores the constraints of all situated social interaction. There is a whole series of interactions, convergences and overlaps between different forms of communication, including face-to-face situations. And there is, consequently, a certain redundancy of the information transmitted, that contributes to making this complex social space. In a way, it contributes to overcoming the limits set by online interaction, traditionally described as ‘narrow-band.’

Thus, the social space of Debian is a complex space, composed of multiple partial spaces. Understanding how these spaces are built and experienced is essential to understanding the meaning of what the ‘Debian community’ is. In words of a Debian Developer:

stephen: it's a virtual community, and the space that the people who are involved in the community is not very clearly defined, there is mailing lists, and there is IRC, that is probably the most clearly defined spaces where the community gathers to talk socially, or work out problems, or work together on technological projects or non-technological Debian related things, but usually I think of our community who is together in a space, and Debian space is very weirdly defined, [...] I in the last year have not paid any attention to the mailing lists, for example, because is too much information for me, but I still feel part of the community, maybe because I'm always hanging out on IRC, I don't know, or because I come to DebConf and build these social connections

156 The concept of density that I am proposing is not the technical concept commonly used in social network analysis [16, p. 351]. It does not refer to the number of actual ties between nodes, expressed as a proportion of the maximum possible number of ties. Instead, it refers to the existence of relationships of different kinds, between different domains. It would be nevertheless interesting to apply social network analysis to this research.

and those last or, when I'm away from people, [...], a shape that is changing all the time but still maintains some kind of form, that is the Debian Community. It's not something you can define very easily.

One of the most significant aspects of this situation is the integration of collaborative and discursive practices with the technical means of collaboration, most notably the 'Bug Tracking System' and 'Version Control Systems.' In any case, what is clear is that the social processes of communication we have found do not happen in a 'virtual' dimension isolated from what constitutes the continuum of participants' daily interactions. What is at stake in the discussion, as well as the channels where it happens, takes us beyond itself, connecting it with other contexts, other social situations and other objects. Hardly any face-to-face interaction will have a greater density of assumptions and implications. Following and describing them is the condition of possibility of ethnography. Of course, we have to take into account the specificity of these forms of interaction and their technological constraints, as stated by McLuhan [13], but these are not what determine the social form of these interactions. They are also not transparent media, mere transmitters of an information that they do not affect. The ethnographic experience of following and describing this kind of complex interactions shows their richness, a richness that is not exhausted in the virtual space bounded and delimited by the technological distinctive features of an electronic medium.

Actually, this proliferation of digital interactions enables us to localize the gathered information, according to the particular context where it is produced, and triangulate it in relation to different sources. That is, to build a thick description [17, p. 220]. Thus, instead of a delocalized ethnography engaged with a subjective construction forged by the deterritorialized sheer will of the social agents, the attention to the connections produced in the computer-mediated communication give us the possibility of a thick description. This is possible because the interaction contexts are in themselves complex, and they build a space that, although 'virtual,' is dense, crossed by many connections. In order to use this concept productively, we need to apply it to different cases of study, following the connections they show, and testing its capacity to shed light on these phenomena.

6. Conclusion: Community Building and Trust

We can say then that the Debian Community is imagined in the sense Anderson uses [1], but this is not, in any case, because it is 'virtual' or built online. This is precisely the medium that enables it to be more concrete, localized. Also Appadurai [2] insists on the role played by imagination in configuring social life, precisely in relation to the new media.

We could ask, are online interactions enough to build 'thick trust'? What kind of trust can exist between the participants in an online community that often have not met each other in person, or between a free software developer and his users? This question is especially relevant for an ethnography about a community that communicates primarily through electronic media. We need to think about new social media in relation to the topics of community, identity and trust.

Furthermore, the second question is really important in the case of Debian, since, as O'Neil notes, Debian contributors have the possibility to change the software obtained by

the Debian distribution users. Thus, they can-not be anonymous [15, p. 135]. In Debian, trust and identity are therefore not two separate issues. Actually, the first step in the process of becoming a Debian Developer (a process that tries to guarantee that someone is trustworthy, both technically and socially) is precisely obtaining a cryptographic key signed by other Developers. This signing depends on a check of the offline identity of the key owner, and it is always done in a face-to-face meeting. We have seen how the Debian members value face-to-face interactions strongly.

On the Internet, or at least in Internet studies, the question of identity is always related to the possibility of deceit. That is, the identity of the other appears as a source of risks and a problem for trust. However, the relevant question about online identity is not whether it is fluid, anonymous, or can be 'verified,' but the fact that it is actually created and maintained. So it is fundamental to explore how identity is constructed in this kind of groups.

In conclusion, my hypothesis in this research has been that the understanding of the space on the Internet has to begin with the practices of reterritorialization. The formation of online spatialities can be understood as a process of reterritorialization, of reappropriation and construction of space globalized and neutralized by the development of late modernity. In other words, as the constitution of a local space built upon the technological possibilities offered by the Internet, in itself a homogeneous and universal space. What we have found here is, in the end, the construction of new links between people, forms of social interaction, and specific spaces. This process of reterritorialization is produced by the particular social interaction of its users, local and situated by definition. The construction of a 'virtual' dense space is done through the localized and situated practices of Debian members. So, these practices solve the problems exposed by Hamman and Wittel and the limits posed by their partiality. And we can begin to answer the question posed by Baym.

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The Interactive Documentary. Definition Proposal and Basic Features of the New Emerging Genre.

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Abstract. The purpose of this paper is to explore some topics regarding the convergence between the fields of the audiovisual documentary and the interactive documentary. A new definition proposal for the new emerging genre, the so-called “interactive documentary”, is argued, compared with the logic of creating and producing linear documentaries. A taxonomy of the main characteristics of the new genre is also established from three points of view: the director, the text and the interactor. At the end, some considerations about evolving perspectives of the new genre are presented.

Keywords: Documentary, digital media, interactive digital communication, interactive multimedia documentary, web documentary, new technologies, Internet, 2.0, nonlinear modes of navigation, digital modes of interaction

1. Introduction

This article focuses on the study of the process of converging between two communication fields, which are, apparently, very different: the *documentary genre* and *digital media*. Although the history of the documentary started half a century before that the one of the digital media, both processes have progressed and, nowadays, they have reached a very interesting point of convergence. Towards the end of the 20th century and, above all, at the beginning of the 21st century, the two genres have taken different paths, overcoming their own trials, surviving in a changing environment and reaching a noteworthy degree of maturity. From this first contact, each genre adopted a series of properties and characteristics typical of the other. In some ways, a fusion begins from mutual attraction: the documentary genre contributes with its several *modes of representing reality*, and the digital media genre contributes with its new navigating and interacting modes.

These modes can be found in interactive applications, which use different supports to display and navigate: on one hand, the offline media; on the other, the online medium per excellence: the web or Internet. By the end of last century, offline media –such as CD-ROM or DVD-ROM– were barely used, therefore, the Internet started to incorporate some key factors, which allowed a progressive abandonment of off-line media and a massive emigration towards the Internet as the only media. The most important factors were: infrastructures and technologies, which allowed accessibility never experienced before with regard to the information and

content, quick navigation, other technical features and the interaction between users.

This setting has favoured the development of different formats and the creation of new genres, such as the *interactive documentary*, which is a result of a double fusion of, on one hand, the audiovisual (documentary genre) and interaction (interactive digital media), and, on the other hand, between information (content) and entertainment (interactive interfaces).

2. Difference between linear and interactive documentaries

The documentary genre is *one of the most powerful tools used to explain non-fictional stories about reality*. Its multiple applications have helped the documentary to become a key device within the cinema industry even since the first documentary movie, *Nanook of the North* (1922), which demonstrates this genre's power to immerse the audience in other places and people's lives. Nowadays, the documentary continues providing the public with unique experiences, representing life and offering fundamental observations and thoughts about culture, politics, ideologies and people.

For their part, *the interactive media, virtual worlds and videogames have started to redefine documentary experiences* outside the traditional film context. We could say that these experiences are documentary, in the sense that they provide information and knowledge about real-life subjects and individuals. Although, unlike traditional documentaries, these allow the users to enjoy a unique experience, as well as offering options and control of the documentary itself (Britain, 2009:2).

The concepts of choice and control were considered the documentary maker's property. When this power is delivered to the user, as is the case of interactive media, the author's role as a narrator –and, consequently, approaching the story from the same standpoint is either questioned or removed. In traditional documentaries, the author's ability to influence the audience is taken for granted, and this influence is exercised through filming and the discursive structure coordinated via editing and staging. But, what happens when this ability is given, at least, partly, to the documentary audience? What happens when the audience is not only audience but the creator of their own documentary experience?

The proposals about the genre do not usually differentiate the traditional audiovisual documentary from the interactive documentary, as they consider the latter as the evolution of the former, in the same way that Web 1.0 naturally became Web 2.0. This evolutionary criterion seems insufficient to frame and define such a complex and varied genre.

The first feature defining both fields is obvious: In the first case, the traditional documentary presents a principle of linearity, i.e., we go from a start point to an end point (A to B) and we follow the route established by the author. The limits of the authorship and the control of the discourse are perfectly defined. In the second case, we start at a point proposed by the author (or indeed, chosen by us), to then find branches and alternative ways to the route we follow. The final decision is not for the director but the interactor. Therefore, we do not refer to a sole discourse, but different displays and, by extension, different possible stories. In the second case, *the limits of authorship and control over the discourse lose influence*, which is the main question we tackle more deeply in the next section.

In short, the key element which differentiates the audiovisual field from the interactive one is clear: The traditional narrative is linear and the discourse order cannot be changed, whereas with the interactive field, this order can be affected and modified. As Berenguer explains (2004), there are "*reactive* behaviours in the automatism, as well as *participative* behav-

ious in certain communicative and expressive works, but, according to this definition, none of them can be considered as *interactive* behaviours”.

Therefore, delimiting this first idea, with linear documentaries we can find reactive components (activities based on the DVD control, such as watching scenes, subtitles, extras, etc.), whereas with interactive documentaries, interactive components are found, i.e., *the system must be understood and decisions must be taken in order to progress*. In the first case, the interaction type is weak, whereas in the second one, it is medium or strong (in the case of linear documentaries, only by pressing *play* on the DVD or using the mouse, the user can see the documentary. Whereas in the interactive case, we need to perform different actions in order to achieve different goals: link it to the application, choose language and navigation and interaction modality, know the system, progress on each branch we find, etc.).

Linking the previous point with the idea of physical participation in Gaudenzi's interactive documentary, and as a second big and differentiating idea from a mental and physical point of view, it can be said that both linear and interactive documentaries try to document reality. Nevertheless, the type of material in terms of media and the preferences of authors and participants end up creating a very different final product. Linear documentary requests only one type of cognitive (mental) participation, which results in a mental interpretation and reflection of what has been seen, whereas in the second case, the interactive documentary requires, apart from cognitive interpreting, *some type of physical participation* related to decision making, which results in having to use the mouse, having to move around the virtual setting, using the keyboard to write, talking, etc.

This physical response required of the interactor is carried out in response to elements suggested by the interactive documentary: *navigation and interaction modalities*. Bill Nichols' representation modalities were appropriate in the case of linear documentaries, but in the case of analysing interactive documentaries, the key elements are navigation and interaction modes. This perspective readdresses focus of the documentary study as a finished product that can be analysed through conventions and styles (camera position, voice over presence, edition style, political role, etc.) towards the study of the documentary as a dynamic means of expression, as a system composed by its relationships with different realities (people that have been interviewed, camera intervention, author's intimate thoughts, user participation, cultural and economic context, etc.).

Finally, the fact that an interactive documentary is analysed based on its navigation and interaction modalities marks the fourth difference between both documentary types: during the entire production process, a linear documentary can constantly change, but once it is edited, this process of change stops. The production process and the visualisation process are kept separate within the analog media. This is not the case for interactive digital media. The process does not stop in the case of interactive documentaries, which can be *considered “adaptive systems”*, which keep changing until the collaboration and participation is sustainable or desired by the users or systems in it.

3. Interactive documentary: A definition proposal

If the definition of documentary is blurred and still under construction, the definition of interactive documentary is at an even earlier stage. Below we propose an approximation to

the concept and a possible definition of interactive documentaries based on the proposals of the aforementioned study by Sandra Gaudenzi, who states:

“If documentary is a fuzzy concept, digital interactive documentary is a concept yet to be defined. This comes with no surprise, since it is an emergent field, but the lack of writing on digital interactive documentary has also to do with the fact that new media artists do not consider themselves documentary makers, and therefore they call their work anything but interactive documentaries. In 2002 artist and academic Mitchell Whitelaw was noticing the rise of the terminology “interactive documentary” (Gaudenzi, 2009:6).

The issue when defining what an interactive documentary is does not emerge simply due to a lack of acceptance, or the under specification of an overall trend. According to Gaudenzi, this is clearly manifested because there are many film and documentary critics, who doubt if an interactive documentary can be considered as such, due to the lack of a strong narrative voice. Those who tried to define the term have treated the digital interactive documentary as an *evolution of the linear documentary* framed within the predominance of digital convergence. They have also assumed that the interactive documentary is basically video and that the associated interactivity is only a way to navigate within its visual content. Some of those who have tried to describe the genre are Xavier Berenguer, Carolyn Handler Miller and Katherine Goodnow.

Xavier Berenguer (2004) considers the interactive documentary as a type of interactive narrative, which emerged separated from the hypertexts and games from the 80's. According to Berenguer, when the narrative becomes interactive through the use of digital media, it can spread in three main directions: interactive narrative, interactive documentary and games. Carolyn Handler Miller, author of the book *Digital Storytelling* (2004), also considers the interactive documentary as a type of non-fictional interactive film. The author says that the audience “can be given the opportunity of choosing what material to see and in what order. They might also get to choose among several audio tracks” (Handler Miller, 2004:345). From the point of view of Katherine Goodnow, interactive documentaries arise from the initial experimentation with interactive films, where physical, rather than cognitive activity is used to navigate live within the existing material (video or film). Gaudenzi values the basic distinction between physical function and cognitive functions carried out by Goodnow: “Goodnow makes a distinction between cognitive function (the act of understanding and interpreting) and physical activity (where the ‘audience must do something in order to fulfil the desire to know how the story will end or to explore alternative storylines’)” (Goodnow, 2004:2). But Gaudenzi disagrees with Goodnow when the latter tries to expose the interactive documentary phenomenon from the point of view of an evolution from other genres or tendencies. With this, she approximates Whitelaw's position (2002:3):

“By tying linear and interactive documentaries together the tendency would be to expect them to be somehow similar or, at least, in a clear evolving relation. I personally disagree with this vision and join artist and new media theorist Mitchell Whitelaw when he says that ‘new media doco [documentaries] need not to replay the conventions of traditional, linear documentary storytelling; it offers its own ways of playing with reality’ (Gaudenzi, 2009:7)

Whitelaw finally gives us a clue that will be crucial in our approach, which Gaudenzi also adopts: the interactive documentary offers its own ways or resources to play with reality and, by extension, to represent it. This researcher highlights the fact that her historical approach is too concise and not deep enough, and that plenty of information is found to be subjected to constant thought and reformulation. Specifically, Whitelaw refers to a series of key assumptions that remain unsolved. According to her, if the interactive documentary is considered as an in-

teractive narrative subcategory, the weight lies with the definition of interactive narrative.

According to this author, we believe that a useful approach would be to start assuming that both linear and interactive documentaries want to document reality, but the type of material in terms of the media and the preferences of authors and participants end up creating a very different final product. Gaudenzi continues with the approach, expressing a basic premise in her work and analysis in order to differentiate the linear documentary from the interactive documentary:

"If linear documentary demands a cognitive participation from its viewers (often seen as interpretation) the interactive documentary adds the demand of some physical participation (decisions that translate in a physical act such as clicking, moving, speaking, tapping etc...). If linear documentary is video, of film, based, interactive documentary can use any existing media. And if linear documentary depends on the decisions of its filmmaker (both while filming and editing), interactive documentary does not necessarily have a clear demarcation between those two roles [...]" (Gaudenzi, 2009:8).

In short, it seems obvious that a possible definition of "interactive documentary" will assume the open and complex character of this specific genre (always undergoing changes and variations), its ambivalence between interactive and cinematic fields, and, finally, its identification as a discourse that tries to transmit a certain type of knowledge linked to reality.

Summing up some of the ideas put forward with the aim of focusing this approach to the concept, we are in a position to provisionally define the interactive documentary as *interactive online/offline applications, carried out with the intention to represent reality with their own mechanisms, which we will call navigation and interaction modalities, depending on the degree of participation under consideration.*

The interactive documentaries try *both to represent and to interact with reality, for which a series of techniques or methods must be considered and used* (navigation and interaction modalities), which become, in this new form of communication, the *key element to achieve the documentary objectives*. The structure of the interactive documentary can be based on one or multiple perspectives and can end at any point determined by the author, but it can also admit multiple displays with different trajectories and endings.

4. Basic features of the interactive documentary

We have considered it appropriate to group the most defining features which characterise the interactive documentary in relation to the three definitions offered by Nichols (1991), defined in the second point. In this new scenario, we will substitute the director figure (more associated with the audiovisual and film genre) for the *author* figure (as the authorship concept is one of the key points in the current discourse); the text (understood as a linear audiovisual script and discourse) by the term *narration* or discourse (non-linear or multi-linear interactive) and the concept of audience (passive audiovisual) for that of the *interactor* (with active, contributory and generative attributes).

a. Features from the author's point of view (sender)

1.a. Loss of control by the director and system regeneration

In the new genre and the new navigation and interaction modalities resulting from it, the *user has generative features and, at this point, the author loses control of the flow of their work* and the genre acquires unknown connotations. The final result of the documentary (what is said) and the discursive order (how it is said) can end up adopting a very different appearance from that captured, at an initial stage, in the script by the author.

1.b. Author's role as assistant

The loss of control places the author in an *assisting scenario* in relation to the interactor. At the beginning it could be considered as a personal authorship but, as it is not a closed product, authorship becomes shared and the director of the work transfers the control of (the) linear and non-linear flow. As Berenguer states (2004), instead of learning from the author – a basic premise of linear discourses in traditional media–, in interactive documentaries the author takes a more assistant's role and the relationship with the audience lets itself to be discovered. Therefore, control of the discourse is solely the responsibility of the author of the piece but rather the interactor must learn certain *guidelines and mechanisms* without which they will not be able to progress through the story. Ignasi Ribas (2000) stresses:

"A very important point to study is the relationship established between the author and the reader, the ways of sharing the control between them and the chances the author has to establish, through this control transfer, the conditions for the receiver to fully enjoy and interact with the experience of interacting with the application, so that the planned knowledge transmission objectives are reached. [...] This particular relationship regarding the authorship suffers a marked change from the advent and evolution of the so-called collaborative web and, as a result of this transformation, all genres depending on it, have also suffered profound changes" (Ribas, 2000:8).

b. Features from the discourse or narrative (text) point of view

2.a. Varied terminology to refer to similar projects

Projects of this nature can take on different names: multimedia applications, hypermedia applications, hyper-documents, interactive multimedia applications or, simply, interactive or hypertext. Gaudenzi proposes other terminologies, far removed from the original concept, because the industry considers these projects *not to be greatly related with the documentary field*:

"Since the digital interactive documentary is still an emerging field (it barely started thirty years ago), it is difficult to find such examples, mainly because people refer to themselves with various terminologies: new media documentaries, digital documentaries, interactive film, database narrative etc... Most of the time what I would consider an interactive documentary is not linked by the industry with the "documentary family" and is called an online forum, a digital art piece, a locative game, and educational product, a 3D world, an emotional map, etc., making my search for examples particularly difficult." (Gaudenzi, 2009:6)

2.b. Documentary and informative interactive multimedia applications

Interactive documentaries can be framed within a more general interactive genre, which could be defined as *documentary and informative interactive multimedia applications*. According to Ribas (2000:7), there are “specific networks of interconnected information, brought about by an author or, more specifically, by a team of authors, addressed to a specific audience within a specific context and with the basic purpose of transmitting specific cultural or knowledge content, without an explicit educational purpose.” More specifically, they are hypermedia applications (or interactive multimedia applications or interactive multimedia), i.e., specific networks of interconnected multimedia information. If we delimit the field even more, we can focus on “those with a specific purpose and, therefore, a structural and navigation constrictions knowingly chosen by an author with the intention of reaching the application objectives according to the mechanism of the interactive media.”(Ribas, 2000: 94).

2.c. Format type linked to non-fictional genres

The interactive documentary is a format type related to *non-fictional genres*. *This non-fiction is interactive* and it is articulated from the perspective of wishing to transmit knowledge in an informal, educational setting, i.e., the focus falls on the projects showing a clear informational intention but, in no case, on the need for the interactor to learn the lesson. In these projects there is, at least, one specific way to interact with the system (the user needs to make decisions in order to progress), and said projects are to be found on the Internet.

Both formal and informal education corresponds to all systematised and even institution-alised activities, which follow a specific exhaustive curriculum. Informal education is a set of permanent processes through which people acquire and accumulate discernment knowledge, abilities, attitudes and modes based on everyday experiences and their relationship with the environment. As Ribas explains in his article *Difusión Cultural y Comunicación Audiovisual Interactiva* (“Cultural diffusion and Interactive audiovisual Communication”), in 2001:

“We will place cultural diffusion in this last field of informal education, together with TV and film documentaries, books, magazines or information TV programs. Although borders are not always clear, we will analyse products characterised by the lack of explicit educative intention, by the asystematisation of the process from the didactic point of view and because they seek to find within the receptor some inherent intentions, i.e., only motivated by the own personal interests.”(Ribas, 2001: 182)

2.d. Documentation of a specific reality

One of the application *sine qua non* requirements to belong to the genre is that it has to show a desire to represent reality with the intent of documenting a situation in a specific way.

2.e. Hypertext, nodes and links

From an analytic perspective, the interactive documentary structure corresponds to a hypertext skeleton constituted of nodes, links and anchors. What varies is the type of manipulated media, which goes from being purely textual to a mixture of different formats (image, sound, text, etc.). According to Ribas (2000:36), hypertext can be defined as a “network of interconnected pieces of textual information”. It is a system of organising information based on the possibility of moving within a text and visiting different text using keywords. Nodes are nuclear elements of hypertext, semantic units expressing a unique idea or concept from the point of view characteristic of the content. The links are the elements of the network

connecting nodes between them, allowing the user to move from one node to another. Usually, there is a small portion of the source node to which the link is connected. This small part, which can be a word, a sentence or an image fragment, is called, the anchor of the link (Ribas, 2000:37).

2.f. Nodal outline and branches of narrative discourse

All interactive systems must anticipate more than one display at a time and, the more varied, the better. The key element that distinguishes the audiovisual and interactive fields is the linearity of the former, which does not allow alteration of the discourse order, whereas in the latter, *this order can be affected and even modified*. The example of the pattern poetry perfectly shows the idea that we want to convey: its structure is configured as a very elemental show of a diversified work, which admits multiple readings. For Berenguer (1998) there are four models to suit different possible non-linear narrative structures: non-linear branched narrative, interrupted narrative, object-orientated narrative and conservative narrative.

2.h. Non-linear narrative

The non-linear narrative (similar for an author to the *loss of control on the discourse*) is seen as a problem in the traditional documentary world. Whitelaw (2002:1) explains: "New media forms pose a fundamental challenge to the principle of narrative coherence, which is at the core of traditional documentary. If we explode and open the structure, how can we be sure that the story is being conveyed?". Whitelaw reflects on the open structure of the works and the type of information being transmitted. Giving autonomy to the user, many questions arise regarding the transfer of control and how it can begin to acquire the original discourse from its constant regeneration and reorganisation.

c. Features from the interactor's point of view (receiver)

3.a. Online or offline reception

The two major differences between online and offline applications are that offline applications are located in hardware, whereas online applications use a virtual media such as the network. In terms of transferring the control, online genres are more flexible and open to user participation. Offline genres are associated with Web 1.0 type media through media closed to the user's contribution, whereas online applications are associated nowadays with a network of *collaborative and generative attributes* from the interactor. As Gaudenzi states (2009: 1), when we talk about interactive documentaries located on the network, we refer to interactive digital documentaries that "not only use a digital media –which could be any existing media, from digital video to mobiles or the network–, but that also requires some type of physical interaction (body interaction) of the user-participant". This goes beyond the mental act or interpretation, "with the objective of identifying different ways of documenting reality and possible new subjectivity models".

3.b. Interaction based on the decision making in order to progress

As Gaudenzi comments (2009: 1), the concept of interaction is present in products presenting any type of physical interaction: body interaction, through the mouse or other devices (gloves, sensors, microcontrollers, etc.) encouraging the user-participant-interactor (more

than just a spectator who interprets what is being observed) to *participate and generate a specific type of content*. According to Berenguer's approach, we have divided the interaction into three categories: *strong, medium and weak*. In this case, one of the requirements when establishing a categorisation proposal is that the application must use digital technology from the point of view of medium or strong interaction (it must involve the user to provide some sort of physical response, in the strong sense of the term). Therefore, decision making is considered a basic requirement in order to progress within the story.

3.c. New receivers becoming a new audience type

These receivers, to whom we can apply the parameters proposed by Alejandro Piscitelli (2009) within the environment of his concept of digital natives, constitute a new audience with two attributes portraying and defining it: it is trained to interact in front of the computer screen, rather than the television. According to Berenguer (1998), interactive narrative can make this new public feel emotions the same way as a traditional narrative would do so. This occurs thanks to a "digitally native" *generational emphasis, a Technologies evolution and an interactive culture, i.e., a culture of communications with the computer as the medium*.

3.d. Generative and open system: active system that adapts to the environment

We adopt Gaudenzi's main contribution when considering the interactive documentary as an "autopoietic" mechanism or living organism, which is connected with the environment through different interaction modes. This is the main difference between the linear narrative and the digital interactive:

"This is one of the differences between linear and interactive documentaries: digital interactive documentaries can be seen as "living systems" that continue to change themselves until collaboration and participation is sustainable, or wished by the users, or by the systems that compose it. In order to see the documentary as a system in constant relation with its environment, and to see it as "a living system" I propose in this research to use a Cybernetic approach, more precisely a Second Order Cybernetic approach, and to see the documentary as an autopoietic entity with different possible levels of openness, or closure, with its environment" (Gaudenzi, 2009:3).

3.e. The rules are changed by the spectator: an active user-interactor-participant-contributor

Interactive media is potentially suited to help the interactor to discover, *choose, think about, participate and even create*. The audience of this new medium, now converted not into passive spectators but active interactors, gain presence and identification, are involved in the audiovisual experience and, at the same time, they share it with others. They include user conditions to become part of a preset system, and then use them to their advantage; interactor conditions, because it interacts with modular interactive modes and systems in order to progress within the proposed displayed; participant conditions, because it is actively involved in the display, choosing the route that seems most appropriate; and contributor conditions, as it contributes to the system generation by providing knowledge based on contents or subjective impressions.

Conclusion

Non-linear narrative (similar to the loss of control over the discourse by the author), is seen as a problem within the traditional documentary world, but in this new genre is considered a big opportunity. This kind of narrative allows audiovisual projects to provide elements to complement and enrich it, providing several added values to the global experience of the audience, so that it is more varied, complete and immersive. The role of the documentary cinema director is to find the midpoint where the meaning can be maximised and the audience is most committed, and it is in this midpoint where the documentary film and interactive media can coexist. *By combining the power of the film to provide a perspective and the ability to interact in order to improve the participation of the users with the material, the interactive documentary film can provide with more meaningful documentaries.* The idea that interactive media can shorten the gap between the producer and the user is promising for any documentary filmmaker looking to increase participation in their narrative. But, at the other end of the scale, if this difference is shortened too much, the documentary may lose interest and value, precisely because of the lack of a strong narrative voice and a particular narrative program (this is exactly what most of the traditional authors fear).

One of the essential premises of the traditional documentary is the desire to organise a story that is both informative and entertaining. And, in this sense, the interactive format should continue with the tradition to try to offer similar experiences that mix a recreational (entertainment) proposal with an educational one (knowledge), in the most efficient, original and attractive possible way. And this is mainly possible thanks to the combination of different navigational and interactive modalities, which enable a multiple exchange between the work and the interactor. Firstly, navigating and visiting different proposals and structuring the content (information and knowledge) means the use of strategies and resources of the games. This way, from the structure of the interactive, and through the navigation modalities, the user, in a certain sense, "plays" with the possibilities offered by the work and can satisfy their first necessity: amusement and entertainment. Secondly, this strategy close to the game experience usually gives the user a sensation of deep immersion and stops their learning from being boring and that their need of being informed or need of learning ends up fading. Therefore, the didactic proposal offered is attractive and dynamic, beyond that present in most classical hypertexts. Already at this stage, the interactor "learns through playing" and once they have "learnt the lesson" in a fun, original and light-hearted way, they can share it with other interactors, in real time or whenever they deem it appropriate. Therefore, we see how an interactive documentary can satisfy three needs or desires: that of the player (recreational), that of the student or anyone with cultural interests (educational or formative) and that of the communicator (communication level with other participants). Through the correct mixture of these three aspects, non-fictional multimedia applications can be equated in terms of attractiveness with proposals close to fiction.

The production and circulation of the interactive documentary seem to be at a standstill. Filmmakers have little incentive to turn a movie into an interactive project, as doing it so would limit its distribution to the Internet, giving up control over authorship and reducing the impact of the film due to the experience of the small screen.

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Death of the university? Knowledge Production and Distribution in the Disintermediation Era.

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1. Introduction. Opening Education. More an academic necessity than an intellectual game.

"If students could take courses from anywhere, a marketplace of instruction would emerge that should lead the best to rise: the aggregated university." (Jarvis, 2009: 215)

In the 21st Century, an increasing number of citizens have access to Higher Education¹⁵⁷. However, the imbalance between free contents on Internet and expensive enrolment fees, particularly in the Anglo-Saxon universities, could cause long term problems for the Higher Education system. If the on-line experience is reasonably similar in activities and quality to the teaching provided in the classroom; why not think in a disintermediation of Higher Education, just as happened in other business models like in the culture industry. What would happen if citizens and governments rejected university degrees that certify these institutions as a unique source of learning and professional legitimation?

As it is well known, there is an active debate in the European Union about recognition and validation of informal learning (Council of the European Union, 2009)¹⁵⁸. The aim of this debate is to design new accreditation methods beyond the constraints imposed by formal education institutions. In this context the analysis and reflection on disintermediation practices in Higher Education is more an academic necessity than an intellectual game. All the communication and cultural industries have already passed through this debate: Why should Higher Education avoid the discussion on disintermediation?

This article will explore questions such as: To what extent is this phenomenon reshaping the traditional role of the university? Will it cause a crisis in the educational institutions?

157 Formal education was, at the beginning of the 20 Century, a privilege of the upper class families. In 1910, Secondary students rate in USA was less to 30%, even in the richest states. 30 years later, secondary schooling was between 70% and 90% (Carr, 2008). Higher education rate was even lower, but in the last 30 years it has change from an elite to the massive university.

158 The European Commission, particularly in the division 'Education and Training' an active debate has been developed since the design of the Lisbon Agenda (2000) that now has evolved towards the importance to validate non-formal and informal learning within the formal education. Initiatives such as: European Qualifications Framework (EQF) or the European Centre for the Development of Vocational Training (CEDEFOP) are just a few examples of this concern. More information here: http://ec.europa.eu/education/lifelong-learning-policy/doc52_en.htm

Will this disintermediation of education evolve towards the disappearance of institutions like schools and universities? In the following pages we will reflect on these topics and propose new categories for understanding them..

2. Defining Disintermediation

2.1 Disintermediation

In a few words, *disintermediation* could be defined as ‘cutting out the middleman’ in the production / distribution / consumption chain. The main objective of disintermediation is to drop the final cost of the product and to accelerate the whole economic process. Even if it was introduced in the 1960s in the banking industry, the concept of *disintermediation* only became widely popularized in the 1990s, after the spread of the World Wide Web. During the mid ’90s the expansion of the WWW brought up discussions about new possible intermediations in fields such as: recorded music, cars, computers, books, music, video rental, construction trade sector, hotel reservations or capital markets.. In 1995 the *Journal of Computer-Mediated Communication* published a Special Issue on *Electronic Commerce*¹⁵⁹. At that time the potential of the World Wide Web as a distribution channel and a medium for marketing communications was out of discussion. Considered as a distribution channel, the web potentially offered providers participation in a market in which distribution costs or cost-of-sales shrink to zero, especially in certain sectors like publishing, information services or digital product categories. The introduction of the appropriate information technology in the industry value allowed the manufacturer to leap over all intermediaries and to reduce the cost of the whole process (Hoffman, Novak, and Chatterjee, 1995; Wigand and Benjamin 1995). Between the benefits for the producers Michalski (1995) mentioned that ‘digital products can be delivered immediately, hence such businesses may encounter massive disintermediation or even the eventual elimination of middleman’ (1995). According to Sarkar, Butler and Steinfield (1995) the main arguments for the elimination of intermediaries were the reduction of costs and the internalization of activities. In the Web buyers and sellers could access and contact each other directly, potentially eliminating some of the marketing cost and constraints imposed by such interactions in the real world (Hoffman, Novak, and Chatterjee, 1995).

Disintermediation soon reached popular cybercultural discourses (Silver, 2000; Scolari, 2008, 2009). In 1997 Nicholas Negroponte wrote in his classic column in *Wired* magazine (1997)¹⁶⁰ that ‘the new story of disintermediation is an old bits-and-atoms classic. The complex process of “things” has created a food chain of middlemen and wholesalers who import, export, warehouse, and redistribute physical items.

Disintermediation and other concepts like *end-user empowerment*, *outsourcing*, and *reintermediation* had become the buzzwords of the late 1990’s (Fourie, 1999). *End-user empowerment* refers to end-users having access to information and having the necessary skills to retrieve

159 In 1995 the *Journal of Computer-Mediated Communication* published a Special Issue on Electronic Commerce edited by Charles Steinfield. <http://jcmc.indiana.edu/vol1/issue3/vol1no3.html>

160 <http://web.media.mit.edu/~nicholas/Wired/WIRED5-09.html>

their own information according to their own needs; in other words, they can do it on their own. With *empowerment* users should be less dependent on information specialists, which does not necessarily mean that the information specialist as intermediary will become obsolete: not all end-users will have the time or the interest to do their own searches. Disintermediation was one of the basic (and utopian) components of the cybercultural discourse in the mid 1990s. Managers included disintermediation in their digital wishlist, scholars transformed this process in one of their favourite research objects and journalists fed the discursive machine with utopian visions of a new economy.

In the following section we will reflect on *reintermediation*, a basic concept for understanding the contemporary transformation of Higher Education systems.

2.2 To re-intermediate (cyberintermediation)

Are intermediaries doomed to extinction species? How can intermediaries survive in the new digital system? Negroponte recommended that in case of threat the intermediary should 're-intermediate by adding a new dimension of value. Typically, this is a service with some flavour of added personalization' (1997). As early as 1995, in the middle of the debate about disintermediation, some scholars alerted about the limits of these processes. For example Sarkar, Butler and Steinfield (1995) disagreed that the radical restructuring of the manufacturer-consumer relationship would cause intermediaries to disappear. These researchers proposed to expand our view of intermediary functions, including the search and product evaluation services (quality control, consumer reports, etc.), helping customers determine their needs, reduce consumer uncertainty, improving product communication, informing consumers about the existence and characteristics of products, enhancing the packaging and distribution of goods, and influencing consumers' purchasing behaviour and provisioning information about them. According to their analysis – based on the nature of consumer needs, particularly in a computer-mediated environment- they suggested that there was still a role for both traditional and new types of intermediaries. They even introduced a new figure: the *cyberintermediator*.

In this new context the *cyberintermediator* was a new network-based intermediary in place of former direct linkages. These actors apply the technology to reduce the producer-intermediary or intermediary-consumer transaction costs. The existence of cybermediaries was considered consistent with traditional marketing theory, which views intermediaries as organizations that support exchanges between producers and consumers, increasing the efficiency of the exchange process by aggregating transactions to create economies of scale and scope. Cybermediaries were just intermediaries which take advantage of the technology to create these economies of scale and scope.

Distribution service firms such as Federal Express were considered a prime example of how information technology had begun to make it economical to provide services independently that historically have been provided by integrated retail intermediaries. In a scale economy the digital technology allows the creation of transaction services provided by intermediaries at a very low cost. The expansion of the e-commerce also triggered a *reintermediation* process under the form of huge portals like Amazon and eBay. The traditional middle man was substituted by a buying-selling interface based on algorithms, data-bases, fulfilment centres around the world and, last but not least, the information provided by millions of user interactions. In this context the original disintermediation proposal -based on a killer car dealer logic- derived into a mixed clicks-and-bricks economy.

2.3 Disintermediation beyond economy

The discussion about disintermediation went beyond the economy field and soon reached media and education. Both institutions should be considered the most important social reproduction devices of industrial societies. Traditionally the school has taught a combination of knowledge, ideology and discipline (Althusser, 1970); in the second half of 20th century the media system joined the school in the social reproduction functions. Disintermediation is now challenging both institutions.

In the media the discussion about the possible disintermediation of information processes arrived with the spread of blogging in the beginning of the 2000s. The arrival of the collaborative web (O'Reilly, 2005; Cobo & Pardo Kuklinski, 2007) and the expansion of social networking brought new questions on the table (Pardo Kuklinski, 2010): If information is produced and distributed in collaborative environments, are information professionals still relevant? Is there any future for professional journalists in the land of social networks? The debate about citizen journalism (Gilmour, 2004; Scott, 2007) is a relevant example of this kind of discussions about disintermediation in media field. According to Gilmour 'tomorrow's news reporting and production will be more of a conversation, or a seminar. The lines will blur between producers and consumers, changing the role of both in ways we're only beginning to grasp now'. In this context the communication network itself 'will be a medium for everyone's voice, not just the few who can afford to buy multimillion-dollar printing presses' (2004: XIII)

According to Shirky (2008) the organizational forms perfected for industrial production have to be replaced with structures optimized for digital data. The core problem that school and media solved -the transmission of knowledge, ideology and discipline to millions of citizens- seem to stop being a problem. At this point of this initial reflection we can ask if the educational institutions -an organizational form that, like journalism, was 'designed' for the industrial mass society- have to be replaced with new structures and processes adapted to digital knowledge generation and distribution.

As early as 1996 researchers like Homan (1996) introduced the concept of disintermediation into the educational discourse. For him disintermediation should be interpreted as 'becoming more proactive in identifying information needs; managing the end-user; new retrieval methods, sources and dissemination techniques; improving efficiency and cost-effectiveness; and adding value' (1996: 589). The questions have been always the same: Will educational intermediaries be disintermediated? Will this mean an enhancement to their role? How can the profession continue to add value in an age of information access for all?

3. Disintermediation and Higher Education: New visions and models

The university as an institution in the Western world has been in existence for more than eight centuries. According to Readings: "The modern University has had three ideas: the Kantian concept of reason, the Humboldtian idea of culture, and now the techno-bureaucratic notion of excellence." (Readings; 1996: 14). Despite the recent data of the digital era, it is becoming a driving force for transformations that affect the role of institutions that traditionally has been acknowledged as organizations that provide legitimate knowledge.

The current state can be described as the 'expanded role of the university'. From our perspective the transformations of two relevant dimensions (*generation* and *distribution* of knowledge) have affected the traditional role of Higher Education. This phenomenon is analysed based on new mechanisms of *knowledge generation* (e-science, online education, distributed R&D, open innovation, peer-based production, online encyclopaedias, user generated content – UGC) and new models of *circulating and distributing knowledge* (digital print on demand, e-journals, open repositories, license as Creative Commons, academic podcasting initiative, etc.).

In connection with these new mechanisms of generation and distribution of knowledge Benkler (2006) explains that a 'radical decentralization' is shaping the current network society. According to him the radical decentralization of intelligence in our communications network and the centrality of information, knowledge, culture, and ideas to advanced economic activity are 'leading to a new stage of the information economy-the networked information economy. In this new stage, we can harness many more of the diverse paths and mechanisms for cultural transmission that were muted by the economies of scale that led to the rise of the concentrated' (2006: 32). From an institutional perspective, particularly in the context of Higher Education, this 'radical decentralization' is articulated by new agents, actions and transactions.

Since ancient times educators and students have been intensively using information and knowledge as the raw material of their teaching and learning activities. Nevertheless, the rapid development of the information and communication technologies (ICT) is empowering unprecedented forms of generation, distribution and management of old and new knowledge.

Boyer (1990) developed a model to explain an 'expanded role of the university'. Despite that this theoretical model was elaborated before the expansion of the World Wide Web it still provides valuable ideas to discuss the position that the university has to play as a "knowledge broker" institution in the networked society. Boyer's model stated the four key functions of the university (scholarship) are: *discovery*, *teaching*, *application* and *integration of knowledge*. Johnston (1998) summarizes Boyer's model as follows:

- The *teaching* is not simply a matter of dissemination but of scholarship, transforming and extending knowledge by a process of classroom debate and a continual examination and challenging of both content and pedagogy. It fosters the active, critique and continuously updated process of learning.
- The *discovery*, or research, is a pervasive process of intellectual excitement rather than just a concern with outcomes in the form of new knowledge. It includes the generation of new knowledge through the resolution of problems.
- The scholarship of *application* was defined as professional activity in practice and service, which had to be subjected to the same rigour of evaluation and accountability as teaching and research. It facilitates the appliance of theoretical and practical knowledge.
- The scholarship of *integration*, making connections between knowledge and models from different disciplines and within the wider context. It promotes the combination of disciplines within and outside the academic environment.

In different degrees of intensity and based on distinct levels of development depending on the educational institution, it can be stated that these four key functions have been evolving significantly due to a more connected and interdependent knowledge society (Willke, 2007).

Based on this model Johnston (1998) states that the university lost its 'monopoly' over the production and distribution of knowledge. He explains that university today is no longer unique with regard to the scholarship of teaching, discovery, application and integration.

Gibbons et al. (1994: 6) add that these former monopolized functions increasingly shared with 'non-university institutes, research centres, government agencies, industrial laboratories, think-tanks (and) consultancies'. The authors (1994: 156) envisioned: "The university must enlarge its view of its role in knowledge production from that of being a monopoly supplier to becoming a partner in both national and international contexts". In a later work Gibbons et al. (2003) state the necessity to 'enlarge the role of the university' and proposed a new academic paradigm of knowledge generation (also called 'Mode 2') that is socially distributed, application-oriented, trans-disciplinary, and subject to multiple accountabilities.

However, Jacobson, et al. (2004) point out the inconsistency between the so called **Mode 1** (traditional, discipline-based) and the **Mode 2** (which is applied, problem-focused, trans-disciplinary, heterogeneous, demand-driven, entrepreneurial, embedded in networks). These authors explain the clear necessity to move toward new models for the academy. In general 'these new models describe organizational changes designed to harmonize incentives and expectations, improve access to user groups, and increase the resources available for knowledge-transfer activities'. Gibbons et al. (2003) and Jacobson et al. (2004) highlight the necessity of the 'enlarged' or 'extended' role of the university emphasizing aspects like: (1) communication between the producers of knowledge and the users of knowledge, (2) brokering and negotiation of knowledge translation arrangements, and (3) the delivery of knowledge.

Nowotny, Scott and Gibbons suggested the concept of a 'mode-2 society' in which scientific research would increasingly be socially embedded, giving way to a more "socially robust" forms of knowledge generation. For conceptualizing the hybrid forms of interaction between scientific and social actors, the authors present the notion of an 'agora' a public space for open and democratic forms of reasoning and decision making (Nowotny, Scott, and Gibbons 2001; see also the revisions in Nowotny, Scott, and Gibbons 2003).

Table 1. Gibbon's Mode 1 and Mode 2. Source: Based on Gibbons et al. (2003) and authors' contributions.

Mode 1	Mode 2
Closed - Isolated	Open - Interconnected
Objective	Socially robust
Descontextualized	Context dependant
Restricted to scientific communities	Not restricted to scientific communities
Disciplinar	Transdisciplinar

To conclude this section we present the following table as a way to summarize the above referred concepts and ideas. The table crosses the *knowledge generation* and *knowledge distribution* dimensions with Boyer's key functions. In addition this table includes two columns: 'traditional' and 'disintermediatory' mechanisms inspired by the seminal contributions

of Gibbons et al. (2003). Noteworthy that what has been denominated 'disintermediary mechanism' (right column) is proposed as a collection of trends that envision the adoption of more flexible mechanisms of knowledge translation. The elements included in this column are linked with the concept of Mode-2 that emphasizes the relevance of socially distributed, application-oriented and transdisciplinary of knowledge.

Table 2. Gibbon's Modes and Boyer's Models. Source: Based in Boyer (1990), Gibbon et al. (2003), and authors' contributions

	Boyer's model	Mode 1: Traditional intermediated mechanism	Mode 2: Disintermediary mechanism
Generation of knowledge	Teaching Examples: Academic Earth, iTunes U, OER Commons, Khan Academy, Open Learn.	Linear transferring of knowledge based on content accumulation and memorization (<i>banking education</i> : concept coined by Freire, 1970)	Interactive co-production and experimentation in changing contexts.
	Discovery Examples: Research Gate, Research Channel, How Stuff Works	Critical reading of scientific peer-reviewed publications / text writing for academic publications, thesis or similar. i.e. Knowledge generated within the laboratory of the academia.	Connecting, people, cultures and disciplines. Serendipity. Context-based learning. Hybrid approach (i.e. enterprise-university partnership). i.e. Knowledge generated in spaces of social interaction.
Circulation and distribution of knowledge	Application Example: Public Library of Science, Living Labs, iLab Project; Cramster.	Development of proficiency and quality in the adoption of knowledge (assessed by test). Assessment based learning.	Based on experiment , peer based learning, trial and error, exchange (assessment based on outcomes in-the-context), living labs, etc. Performance based learning.
	Integration Example: Wikipedia; YouTube Edu; SciVee. Directory of Open Access Journals.	Single discipline. Addition of new contents and bibliography to the academic curriculum.	Combining teaching and researching with professional (live) experience (spin off) and crowdsourcing. Transdisciplinarity.

The pace of change is now so rapid and interdependent that it should be considered as a constant, with no period of inactivity in between. In this context, Douglas and Seely Brown (2011: 17) ask: 'What happens to learning when we move from the stable infrastructure of the twentieth century to the fluid infrastructure of the twenty-first century?'. Learning today

is undergoing a "radical decentralization" triggered by new ways to generate and distribute knowledge; i.e. new digital encyclopaedias; the virtualization of books; open access to educational contents; collective peer reviews and P2P universities. Above we mentioned that the information and knowledge has been used as the raw material of the 'generation of knowledge' as well as the 'circulation and distribution of knowledge'. In the following section we will explore questions that could contribute to the understanding of individuals/agents and mechanisms of this changing environment.

4. From disintermediation to knowledge broking

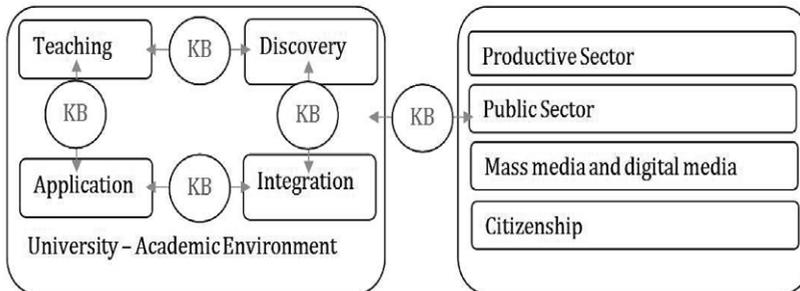
"[T]he economy of the future will be founded on the generation, transmission and exploitation of knowledge of many kinds, much of it dependent on the coming together of disciplines in innovative ways' (Crossick, 2010: 7)

If the discussion about the disintermediation in media field introduced new concepts like *citizen journalism* or *user-generated content*, for analysing the disintermediation in the educational realm we also need to construct a new dictionary of concepts and analytical categories. *Knowledge broking* (*knowledge broker*) is one of those concepts. The concept was introduced by Hargadon and Sutton (2000) and should be considered a natural evolution of the term *knowledge worker* coined by Drucker (1959). Through this section we will explore the significance of the knowledge broker profile in relation to the current challenge that the university face in an era of hyperconnectivity and 'radical decentralization' (Benkler, 2006). In other words: this section analyses why and how, educators and students as well as scientists and researchers should embrace some of the attributes envisioned in the profile of a knowledge broker. As it will be shown in the following pages, these agents play a key role in the production, distribution, translation and dissemination of knowledge.

4.1 What is a knowledge broker?

A *broker* is a person (but also can be identified in certain organizations) that arranges or negotiates (a settlement, deal, contacts, commodities or plan) with an intermediary. This is a profile that is represented by personnel whose skills are remarkably important in the context of the information society. From the perspective of the knowledge translation and dissemination the knowledge broker is an emerging human resource profile that facilitates the connection of information, people or context.

A fundamental skill of a knowledge broker is the capability to make proficient use of the digital technologies to bridge the gap between different stakeholders or communities (Straus et al., 2009). Pawlowski and Robey (2004) wrote that the 'brokering practices include gaining permission to cross organizational boundaries; facilitate the transfer of knowledge among organizational units' (2004: 663). For instance, a knowledge broker gives both decision makers and researchers a better understanding of each other's field of expertise or interest.

Table 3. Knowledge brokering in the Higher Education system. Source: Authors.

A knowledge broker (KB) can be identified in different socio-cultural contexts. In the specific case of Higher Educational institutions, a KB becomes a 'knowledge networker' who connects and bridges different activities of knowledge generation and distribution within the university but also outside of it (see Table N°3). Depending on the link (see arrows) and the stakeholder or context the networking activity could vary significantly.

The profile of the KB is based on the understanding that if knowledge is not in action (translated and disseminated) it is underexploited or even worse it could be simply ignored. In this perspective, the knowledge-to-action process is an activity that has to be pursued by an iterative, dynamic, and complex process of creation and application of knowledge. In this action-cycle there is a blurring of boundaries between creation and action components' (Straus et al., 2009: 22).

Jacobson et al. (2003) explain that 'Knowledge brokers mediate between researchers and user communities. Individuals serving as brokers must understand both the research process and the users' decision-making process' (2003: 98). From an educational perspective, teachers and other educators should develop the skills of a knowledge broker in order to better connect (and update) the knowledge that is being created with what is taught and learnt by students. Coming back to the key functions of the university, the teaching discovery, application and integration of knowledge should be driven by people who are able to understand and adopt this profile. In other words: knowledge brokering 'links researchers and decision makers, facilitating their interaction so that they are able to better understand each other's goals and professional culture, influence each other's work, forge new partnerships, and use research-based evidence' (Straus, Troe and Graham, 2009: 125).

Knowledge brokers also promote the 'interaction between researchers and end users, as well as to develop capacity for evidence-informed decision making [...] developing a mutual understanding of goals and cultures [...]and] facilitates the identification, access, assessment, interpretation, and translation of research evidence into local policy and practice' (Dobbins et al., 2009:2).

4.2 Knowledge in transformation

Straus et al. (2009) summarize the stages of knowledge generation (research) in three levels. One of the key roles of Higher Education institutions is to design and adopt differ-

ent strategies to foster the discovery of new knowledge. It is important to keep in mind that not all the knowledge is discovered at the same stage. Also, it will depend on the discipline or the subject studied the phase that will be adopted during the production of knowledge.

1. **First-generation knowledge** is derived from primary studies such as sampling error and measurement error.
2. **Knowledge synthesis is second-generation knowledge:** Aggregation of existing knowledge. It involves the application of explicit and reproducible methods to the identification, appraisal, and synthesis of studies or information relevant. Identify, review, and select the knowledge or research relevant to the problem. Adapt the identified knowledge or research to the local context.
3. **Third-generation knowledge: Knowledge tools or products.** Present knowledge in clear, concise, and user- friendly formats and ideally to provide explicit recommendations. Facilitate and promote awareness and implementation of knowledge. It may include tools and products (Straus et al., 2009:27).

The academia has its traditional channels of dissemination of knowledge and, depending on the context, the educational system may provide incentives to foster this distribution. Some well-known examples of knowledge distributions mechanism are publication of peer-reviewed journals; book publications; presentation of posts in congress, among others. It is also known that depending on the discipline the strategies of knowledge distribution may vary. For instance, some disciplines promote the presentation of papers in congress meanwhile others prefer a high impact factor (average number of citations to articles published in science and social science journals) provided by the Institute for Scientific Information (cfr. ISI Web of Knowledge, visit here: <http://wokinfo.com>).

Even acknowledging that the traditional channels of dissemination of knowledge already mentioned are massively adopted for scholars and scientists, it is important to keep in mind that these are not unique ways to distribute academic knowledge. When a scholar or a community of them only adopt the traditional channels of diffusion used to disseminate and circulate academic knowledge, there is a potential risk of knowledge underutilization that could affect further exchange of new knowledge generation within other academic communities and stakeholders. In many instances, this underutilization phenomenon could be tightly linked to neglect or simply ignoring the possibilities that the digital environment and new media provides. Dobbins et al. (2009) explain that ‘the evidence demonstrates that traditional one-way passive strategies used alone are relatively ineffective. Strategies that are more interactive and involve face-to-face contact show promising results, and involvement of decision makers in the research process is associated with a higher degree of research uptake’ (2009: 4).

Jenkins et al. (2008) refer to the importance of this action-cycle, which includes the knowledge creation and distribution. In that work about ‘spreadability’ they refer to the importance of knowledge in action saying ‘*If It Doesn’t Spread, its Dead*’ as a way to describe that is vital to create stretched connections between the knowledge creation and the knowledge distribution through different niche communities.

Based on the current evolution of the digital environment and considering how the global society is changing, it is important to enquire if the diversification of strategies to distribute and circulate knowledge today is sufficiently discussed by the academic community. Straus

et al. (2009) explain this diversity as follows: 'In the United Kingdom and Europe, the terms implementation science and research utilization are commonly used in this context. In the United States, the terms dissemination and diffusion, research use, knowledge transfer, and uptake are often used. Canada commonly uses the terms knowledge transfer and exchange' (2009: 19). Jacobson et al. (2004) also mentions that knowledge transfer is a concept close to terms like: research transfer, technology transfer, knowledge utilization and knowledge exchange.

As we can see, the concept of *knowledge brokering* (*broker*) is a useful theoretical tool for understanding the reintermediation processes in Higher Education and defining the new skills and profiles that the education professionals should develop.

5. Conclusions: The death of the university?

Regarding the future of educational institutions, Tucker (2010) proposes a sort of middle ground perspective. Interestingly Tucker highlights the social value of educational institutions (schools in this case); suggesting that they will evolve toward hubs to create and maintain social relationships. 'There will always be physical schools - students need to go somewhere during the day to enable the engine of modern economic progress: two parents working. But these schools will evolve into things that look more like civic centers - hubs for community involvement and rich relationship-building' (2010: para.7).

In order to summarize some of the main ideas proposed in this paper the authors highlight three questions that have been argued along this text and are open to further discussion:

1) Will Higher Education institutions disappear because of disintermediation processes?

As in other fields, disintermediation will not declare the death of university, however there are reasons enough to think that Higher Education institutions are not alone anymore: a complex network of platforms, systems and new institutions are operating in the educational field. Many of these platforms and systems were born under the disintermediation flags, but now some of them are good examples of cyberintermediation, that is a series of digital environment that promote some kind of 'collaborative intermediation'.

2) How is the Higher Education system mutating?

New actors, new relationships, new teaching/learning processes. The traditional educational institutions do not occupy a monopolistic position anymore.

The traditional *closed / closed* system (*closed* generation of knowledge + *closed* distribution and access) is changing to a *closed / open* system (*closed* generation of knowledge + *open* distribution and access), and evolving toward a more radical stage: an *open / open* system (*open* generation of knowledge + *open* distribution and access). *OpenCourseWare*¹⁶¹ or *iTunesU*¹⁶² are remarkable examples of a *closed / open* model, meanwhile the P2P University¹⁶³ and the Khan

161 <http://www.ocwconsortium.org/>

162 <http://www.apple.com/education/itunes-u/>

163 <http://p2pu.org/>

Academy¹⁶⁴ are examples of an *open / open* model.

We consider that the opposition is not anymore between intermediation or disintermediation. Disintermediation platforms are the new digital collaborative intermediaries, but these systems are often working together with traditional intermediaries like universities. In this context we could talk a 'hybrid system' where old and new intermediaries coexist in the same environment.

3) How are the relationships between traditional intermediaries and new intermediaries?

Universities should not compete but collaborate with new cyberintermediaries. Between traditional and new practices we can identify countless micro and macro combinations where Higher Education institutions apply new disintermediated logics that include new agents, actions and transactions.

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164 <http://www.khanacademy.org/>

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Orkut, virtual identity in Brazil

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1. The phenomenon of communication in daily life

"Communication is the message"
 McLuhan [1962]

If we consider the current scene of communication, a privileged environment for the formation of sociability and postmodern subjectivity, we note without much effort that there is an interest in everyday life. In the contemporary world there is a growing interest on the part of the media in the ordinary and banal aspects of daily life, resulting in the exposure of the individual in various formats and levels of visibility, such as the Orkut phenomenon, where the intimate relationship between the ordinary, appearances and the ephemeral nature of communication provided by this type of environment are an extreme example of search for and construction of self-identity. In the words of Baumann, we can identify clearly that this is what he defines as post modernity.

Post modernity means many different things to many different people. It may mean a building that arrogantly flaunts the 'orders' prescribing what fits what and what should be kept strictly out to preserve the functional logic of steel, glass and concrete. It means a work of the imagination that defies the difference between painting and sculpture, styles and genres, gallery and the street, art and everything else. It means a life that looks suspiciously like a TV serial, and a docudrama that ignores your worry about setting apart fantasy from what 'really happened'. It means license to do whatever one may fancy and advice not to take anything you or the others do too seriously. It means the speed with which things change and the pace with which moods succeed each other so that they have no time to ossify into things. It means attention drawn in all directions at once so that it cannot stop on anything for long and nothing gets a really close look. It means a shopping mall overflowing with goods whose major use is the joy of purchasing them; and existence that feels like a life-long confinement to the shopping mall. It means the exhilarating freedom to pursue anything and the mind-boggling uncertainty as to what is worth pursuing and in the name of what one should pursue it. [Zygmunt Bauman 1999: 254]

The Internet is currently a large heterogeneous system known as cyberspace, in which the number of people with an email address keeps increasing worldwide. Given this reality, which only tends to grow, what becomes necessary is an urgent rethinking of the role of the subject who frequents it and what is his role in its history, since he is its author, alongside with the issue of this new space. People no longer need to leave home to search for or to find individuals with whom they share interests and affinities, or even as Pierre Lévy [1999] argues in his book *Cyber Culture*, conflicts which may develop into other concepts and ideas. From the moment that anyone in the virtual environment can be an issu-

ing agent -by constructing a home page, for example- and considering the immense number of websites that are created every minute, we must accept that the receiver is confronted with infinite options for access to this endless network, a network which has been made possible by the existence of a worldwide system of interconnected computers.

Since its launch in early 2004, Orkut is currently one of these “centers” of the Internet. The site is more of a system of virtual relationships, created under a program that, from an extensive database, becomes a meeting point for all those who are connected.

With the evolution of human knowledge and, consequently, information technology, man also began to seek for ways to adapt to the new world triggered by computers. Since the beginning of times, he lives in groups - called communities - and identifies with them somehow. With the advent and evolution of the Internet, these groups came into being “inside” the computers too, in a virtual world where, essentially, the organization is similar.

Cyberculture specifies “the set of techniques (material and intellectual), practices, attitudes, modes of thought and values that develop along with the growth of cyberspace” [Lévy, 1999, p. 17]. Cyberculture introduces still other forms of social relationship in which virtual communities are the big news. If we think that communities are groups of people in social interaction, virtual communities relationships are established without a space delimited, they are deterritorialized [Cintra, 2003]. The relationships are mediated by computers, with their mechanisms and connectivity technologies, and connections established will compose the virtual space, that is, cyberspace (ibid.). It should be emphasized here that the virtual is not the opposite of reality. It is what is not present in material form, but it has a concrete existence. “It is a facet of the real” [Saraiva, 2006, p. 27]. Therefore, Cyberculture poses significant challenges to the understanding of contemporary society.

2. Daily life in the media

Before we proceed further and in order to better understand the process of media interaction with everyday life in post modernity, we need to conceptualize communication not as a simple process of information flow between a transmitter and a receiver, but to understand communication as something that goes beyond technology, something that emphasizes emotional values and investments, largely exceeding a mere exchange of signs or information in the utilitarian sense of the term.

Communication is more than one set of messages disseminated through various media, massive, communication is a socially shared way of life that sets the tone and atmosphere of our time. Communicate means to meet, go out to you, seek the interface, operate in the area of interaction. [Maffesoli, 1978].

Everyday life had been long disregarded in the media’s daily debates, but with the eclosion of reality shows on television worldwide, the strong presence of documentaries in cinema, and the phenomenon of weblogs, fotologs, and Orkut on the Internet, the theme has resurfaced in communication environments, revealing a notion of daily life that is exposed, documented, and spied on. One striking example of this type of daily exposure is the relationship site Orkut. This new type of social relationship is becoming an irreversible trend in

daily media and, according to Felinto [2002, p.22], in the virtual world identity is the fruit of a process of intentional building and thus, subjects would have total freedom in redesigning their personae. The postmodern identity begins to metamorphose, appears in its multiplicity, highlighting the complex being of our time, fragmented. The virtual world is a world that originates in the thinking and actions of ordinary men, being affirmed as real to them.

In the universe of virtual communities, Orkut in Brazil stands out, since the site is currently the second most accessed electronic address in the country, second only to the search engine Google - which also leads the ranking of Global Access – according to Alexa¹⁶⁵, which lists page visits on the Internet worldwide. In addition, Brazilians are approximately 50% of all Orkut¹⁶⁶ users. It is young people who dominate the social networking site; after all, about 70% of “orkuteers” are younger than 30¹⁶⁷.

Orkut was created in January 2004, in the United States, by Orkut Buyukkokten, a Google engineer (search engine widely used worldwide) and in April the following year he launched the Brazilian version in Portuguese. To join the site, you must build a profile, which is a kind of page for each individual user, which contains a great amount of personal information¹⁶⁸ which can be located, reviewed and distributed among participants. This is achieved through a permanent written profile so that every taste, expectation and preference is noted. The idea is to record everything, in order to relate each individual to others, within a general surveillance of behaviors described in detail and rigorously recorded. In each profile, there are different types of underlying controls, whose aim is to reveal the behavior of users.

One type of control divides individuals by distributing them within specified categories and classifications, in order to regulate behavior. Another type of control acts on the actions: a disciplinary power [Foucault, 2005]. Discipline which is linked to resistance, leakage and seepage, a constitutive heterogeneity in Orkut, where different models of behavior come into contention and confrontation in the process of subjectification of youth. The grouping of “orkuteers” in the community seems to form a “Network of alliances”¹⁶⁹, flexible and unstable, and the universe ends up being in the Orkut space as one of “perpetual imbalance, rather than a closed exchange” [Deleuze, 1988, p. 45]. Imbalance arising also from the constant changes in the discussion forums.

The communities do not fix permanent forum practices or behaviors, there is flexibility in the proposals, in trade and in the arguments. The communities are composed of a “subjective plasticity” [Pelbart, 2000, p. 14] due to all its heterogeneity and hybridization, resulting in a series of “new dangers but also new powers” [ibid., p. 16] for the youth connected.

The permanent exhibition of oneself, made possible by Orkut, is one of its constituent brands, which arouses on the users both fascination and distrust. If, on the one hand, the possibility of combing through profiles of others and finding out everything about anyone has

165 Available in: <<http://www.alex.com/topsites/countries/BR>>. Accessed: 11 July. 2010.

166 Available in: <<http://www.orkut.com>>. Accessed: 11 July 2010.

167 Ibidem.

168 By filling out the topics listed in the profile, for example, the user can describe him/herself into three categories: social, professional and personal. The social profile or general is the one that appears when the page is accessed by a particular person and brings features like age, tastes, favorite books, TV shows, movies, among other things. The job profile includes data for the profession, education and career, in a sort of curriculum vitae. The profile staff, as its name implies, brings a lot of personal information such as physical characteristics and personality. It also includes information about the type of person the user would relate to or is even dating or married to.

169 Cf. Deleuze, 1988.

attracted many Internet users, on the other this same possibility has driven away many, on the grounds that this exposure can be dangerous and susceptible to criminal actions. There are several reports, published in the media, about pedophiles and other criminals using existing information on the Internet generally, and specifically Orkut, to commit their crimes.

Orkut communities function as a “writing machine” that through techniques of annotation, recording and typed conversation, establishes a whole set of categories and normative standards of conduct in relation to school youth. Conversations in Orkut are monitored using a range of codes that homogenize conducts and eventually exert coercive forms of control over gestures and juvenile behavior. The act of writing about oneself, however, does not only lead to the disciplining of behavior; after all, “writing is fighting, resisting, writing is coming-to-be” [Deleuze, 1988, p. 53]. By writing in detail about their likes, preferences, what they love and what they hate, connected youths are also contradicting the will of the power that tries to subdue and discipline them. In doing so, youths turn off what is planned for them and make “other connection types, composition of solidarity, of concern, other ways of associating whether, and to tout itself subjectively, away from subjection imposed” [Pelbart, 2000, p. 20].

Orkut communities are heterogeneous; some are composed of utterances produced in various forums which deal mainly with the competition among schools. There are numerous disagreements among community members, especially regarding the classification of a certain school, practice curriculum or teacher. In this case, the arguments used to defend different opinions are discontinuous, sometimes they tend to endorse them, other times they express a vehement disapproval regarding the theme under discussion. These disputes are sometimes quite offensive and on occasion have brought chaos into the forums.

In the community under the name “I hate studying,” the opposition to studies is narrated in different ways in the forum. There are, for example, topics asking the members to describe the school in three words. The topic was started in July 2005; by January 2007, it had 15,688 posts. This number is quite significant in the context of Orkut and reveals that the issue is quite debatable for members of the community. There you can see the school described as “very bad “ by means of numerous expletives and also by terms like “Waste of time,” “boring,” “disgusting,” “hideous,” “tiresome,” “garbage,” “the worst”; “boredom”, “crap”, “annoying”, “dull”, “idiocy”, “outrageous”, “unbearable”; “rough”, “stress”; “capitalist dictatorship”, “prison”, “torture”, “slavery”; “barracks”, “hell”, or “tremendous hospice.”

Heterogeneity, however, is not restricted to Orkut. Youths connected are in contact with different discourses, which are circulated by the most varied means; discourses that are disclosed in other socially accepted and valued conducts in life.

3. Young people and social networks

In Brazil, most players immersed in the information society and their networks are young. According to IBGE, in 2008 in Brazil the group aged 15-17 years had the highest percentage of Internet access. According to the Supplement to the National Survey by Household Sampling [PNAD, 2008]¹⁷⁰ on Internet Access and Possession of Mobile Telephone for Personal Use,

170 Available in: http://www.ibge.gov.br/home/presidencia/noticias/noticia_visualiza.php?id_noticia=1517. Accessed. November, 2010.

62.9% of young people between 15 and 17 had accessed the Internet at least once in their lifetime. The sampling PNAD 2008 indicates that in the age groups above 15 to 17 years, there is a decrease in the percentage of Internet access, and in the age group that ranges from 50 years or older, only 11.2% of people have accessed the World Wide Web in their computers. The average age of people who have no interest in using the Internet, apart from the issue of affordability, is 45.

Specifically, the survey conducted by IBGE in 2008 aims at communication with other people as the greatest source of subject access to the World Wide Web. Of the respondents, 83.2% stated that the main purpose of Internet use is communication with others. Currently, other more accessible forms of communication between Internet users are: e-mail, conversation programs, and social networking sites like Orkut. Of the three options for communicating virtually, virtual social networks are identified as those with greater agility of information flow among multiple simultaneous Internet users.

A new system of communication that speaks a language increasingly Universal is promoting both digital production and distribution words, sounds and images of our culture as customizing them to taste and moods of the identities of individuals. Nets Interactive computers are growing exponentially, creating new forms and channels of communication, shaping the lives and at the same time, being shaped by it. [Castells, 2009, p.40]

The insertion of young people in the World Wide Web complements anxieties, common at this stage of life, with socializing with diverse cultures. In youth, generally, the subjects seem to occupy the maximum space possible in the construction of their identity. The interfaces of virtual social networks offer a greater possibility of presence for individuals in different environments, even if such an occupation means passing from the real world to the virtual world.

The current process of technological transformation expands exponentially because of its ability to create an interface between technological fields through a common digital language in which information is generated, stored, retrieved, processed and transmitted. We live in a world that, according to Nicholas Negroponte, has become digital. [Castells, 2009, p. 68]

The profile of Orkut¹⁷¹ users, as provided by the social networking page, reinforces the PNAD data from 2008 on increased participation of young people in these virtual spaces. In Orkut, 53.48% of users are between 18 and 25 years old, 14.99% range from 26 to 30 years, 6.68% from 31 to 35 years, 4.15% between 36 and 40; 4.14% between 41 and 50; and 3.47% are 50 or older. Among the interests of network users, 44.04% highlight friendship as being more important; 14.41% consider dating as the main interest, 13.53% said their interest is in activity partners, and 13.02% considered professional contact as the most interesting advantage of using Orkut.

4. Orkut as intercultural system

Interculturality is conquering the virtual space as changes weaken the architectures of multiculturalism, a form of social production that involves the acceptance of heterogeneity. In other words, we go from a multicultural world, marked by the juxtaposition of ethnic

171 Available in: <http://www.orkut.com/MembersAll>. Accessed. November, 2010.

groups in a city or nation to another which is the globalization of interculturality. Consequently, Orkut can be understood as a global intercultural system, where participants are responsible for organizing and disseminating interculturality and cultural diversity.

Moreover, the success of social networking on the Internet may be related to a perspective of the overabundance of space [Augé, 1994]. When you go into action, a variety of fictional universes emerge, which can act as universes of recognition. Spatial overabundance spreads on the multiplication of references, resulting in physical changes. The conurbations and transfers of population produce the reproduction of non-places. The scope of the Internet thereby favors the expression of local aspirations, marking cultural diversity and, at the same time, the demarcation of localism in the global picture of cyberspace. It is a paradox of cyberculture, architected under a condition of post-modern life: the quantity of imaginaries mobilized and cultural differences asserted increase in the same proportion as the number of messages circulating worldwide do.

In a planet connected via digital communication, there is a tendency towards the contraction of many groups around their particular cultures and their similar ways of life. Such a trend is cyberbalkanization –a term coined by Alstynne and Brynjolfsson [1997] –, in which the ease with which contacts can be made through emerging technologies can lead to a fragmentation of society into associations of private interests.

The focus is on the potential for balkanization or integration of interactions supported by preferences, including social, intellectual and economic affiliations, similar to geographic regions. In some cases, fragmentation seems to be more intense in cyberspace. So the question that arises is how local heterogeneity can give rise to homogeneity. As this study reveals, tribal character can be observed in virtual communities, which can bring together -in a network such as Orkut- part of the migrant population native of Brazil. On the relationship between culture and territory, Hannerz [1998] states that cultures as collective phenomena are, by definition, related to interactions and social relationships, and only indirectly and without logical necessity would they be linked to a physical space.

According to Lemos [2006], there is a model for the development of contemporary tribes, because they need not arise from a place situated geographically, nor from an exclusive virtualization of social needs, such as dating, especially because some groups promote physical meetings. The tribes may be born virtually and / or from a physical location, a country, region, may coexist and relate in the virtual environment or outside of it. Such is the case of Brazilian migrants or aggregations from “Abroad,” whose participants are organized via Orkut and live outside the borders of Brazil.

Therefore, all communication systems structured in cyberspace which are effectively deterritorializing, are involved at the same time in a movement of symbolic territorialization. The use of such networks and mobile devices such as cellular phones induces the processes of territorialization and deterritorialization that would result in a “new repossession” [Lemos, 2006].

With regard to the cultural field, Garcia Canclini [1998] states that the two movements are coupled: the occurrence of dispossession, the loss of a natural relationship between culture and the social and geographic territories, also leads to repossession, when outlining relocation of the land leads to old and new symbolic productions. Cyberspace can be up to the stage of deterritorialization of culture, but in the end it always produces a repossession. So, creating a territory implies maintaining control over all actions revealed within the boundaries already deterritorialized, and alludes to the probability of moving these borders, through the

production of lines of flight, an opportunity for reframing the inscribed and the established. Cyberculture not only helps to destroy hierarchies and boundaries, but has the ability to establish them through other deterritorializations.

It is understandable that the social world lacks physical territories to exist, which can assume the shape of laws, institutions, architecture. However, Lemos [2006] warns about the "vitalism" of the groups that manifests itself by the tensions that come along with the deterritorializing and restructuring of such territories. Thus, life is characterized by social mobility and fluidity, while the dynamics of society are instituted by escape movements. In the space of megacities, productions of meaning stemming from the appropriation of mobile technologies and cyberspace are at stake.

Moreover, the link to one's own circle of individuals in space establishes mediations. The non-place is crossed by words and texts: "We know, first of all, that there are words that make the images, or better images [...]" [Augé, 1994: p.87]. Something that refers to a "maffesolian" approach to the establishment of social ties in postmodernity, supported by visual communication, games images, appearances and viral contagion, from an aesthetic design of sociability: "Definitely, aesthetics (aisthesis), feeling common, appears to be the best way to style 'consensus' that prepares our eyes, the feelings of shared or bag exacerbated [...]" [Maffesoli, 1996: p.13]. It is interesting to note that the logic of membership in virtual networks, as well as affection which serves as vector, carries, basically, a relativistic character.

Postmodern culture opens the way for the explosion of a multitude of lifestyles, they multiply and are redeveloped at all times, giving rise to a multiculturalism that is now able to develop in a sometimes confrontational, sometimes smooth, way. For Maffesoli [2004], communication acts as social cement because only through it one can exist and understand the relationship with others. The author suggests that the word communication is the idea of meeting, or rather, that the act of vibrating along awakens collective imagination. Consequently, the non-place reterritorialized in the symbolic space of a network acts as a social meeting place, bringing together people who seek traditional values identified with the nation, the motherland, the city. (And this is a possibility that is still expanding and spreading every day worldwide, at national, regional and local levels, including all places and non-places inhabited by people who perform various roles in our daily drama).

It is important to note that the adventurer or traveler is generally not well accepted by the locals when he arrives, because he carries an undeniable moral hazard of being a bearer of news. This explains the air of distrust that prevails around the traveler, who appears as a witness of a parallel world, as a vagabond who arouses different feelings in the locals, a sense of anomie having the force of law. Interestingly, the traveler will always be a bird of passage, regardless of the reason for his displacement; and as such, he will always be rejected as being out of bounds of the city [Maffesoli, 2001].

5. Orkut as organizer of social history

In postmodernity, there are "new social bonds arising from the shared emotion or collective feeling" [Maffesoli, 2000, preface to the 2nd edition]. The new bond to which the author refers can be seen in the phenomenon of communities existing on Orkut, where "loving" and "hating" something or someone joins or separates the members,

who join groups and use the communities to present themselves to other members, be they friends or strangers.

Therefore, within the tribe of Orkut, users are configured in new tribes of people united by likes and dislikes, governed by the “law of the middle”, something that Maffesoli characterized as existing in criminal gangs, in the stock exchange, and in academia. For him “[h]istory can dignify a moral (a policy), the space in turn, will promote and produce an aesthetic ethics” [Maffesoli, 1998, p.22].

We saw that the community is emotionally unstable, open, which can make it in many ways anomic with morality established. At the same time, it does not fail to raise a strict conformity among its members. Is there a ‘law of the environment’, one which is difficult to escape? [Maffesoli, 1998, p.22]. Faced with the above, within the socio-cultural context of neighborhoods composed of families of low income and education, it is relevant that Orkut keeps the young visible and active, as an individual deviating from the default stigmas offered by formal education.

Without acting as a diary in the strict sense, Orkut allows for the reorganization of individual history, customizing and highlighting preferences, opinions about various subjects, desires and motivations. When choosing a particular photo or quote (in the “about me” profile), the individual presents himself to others as what users want to be. In “Truths of autobiographies and diaries”, Contardo Calligaris [1998], deals precisely with the use the individual makes of those tools that enable the reinvention of oneself.

Narrating is no different than inventing one’s life. Or looking into somebody else’s life is no different than inventing one’s own privacy. For Calligaris, the autobiographical act is constitutive of the subject and its contents [1998, p. 49]. Calligaris also highlights the “jigsaw (puzzle)” role of diaries, memoirs, and autobiographies, whose reconfiguration can be easily perceived in the Internet virtual communities like Facebook, Twitter, and blogs.

It is a fact that there is always a crucial step in the making of any autobiography: giving meaning and consistency, whether all at once or day by day. This crucial fact can not be judged in the court of factual truth. Omissions, additions, relocations, are the puzzle pieces of the subject. Such is the sense of Lacan’s notion that truth is a line of fiction, under the condition of understanding that fictionalizing one’s own life is the modern Western way of directing and redirecting it [Calligaris, 1998, p. 53]. In Orkut, the writing is not profuse and is definitely not the protagonist, but the network tools that allow the State to build new identities are. In an interview contained in the book *Questions of Sociology*, Pierre Bourdieu [1998] highlights the need for self-assertion of working-class adolescents, who choose to drop out of school to work and rise to the adult world. With the money and consequent financial independence, they hope to impress a girlfriend or a classmate, for example.

Obviously, looking for employment and independence as a teenager is not merely building a more pleasant image of oneself, but the construction of an image is imperative in this age group. Orkut and other virtual communities on the Internet may be one of the tools used for this building / self-discovery. By filling in the blanks offered by Orkut, teens may build up their self-esteem, presenting themselves as nice ‘cool’, attractive, intelligent. And standing out within the school environment is a difficult task. The standardization of education and the teaching of standardization in schools, walk parallel to the continuing of exclusion: while education is equal for everyone and puts everyone at desks lined up, it accentuates the distance between them, between “good” and “bad” students.

According to Dubet [2000/2001], school is not more 'innocent', nor is it more 'neutral'; it is in its 'nature' to reproduce social inequalities, producing inequalities at school. He adds: "Ultimately, students more socially advantaged, who have greater resources for success, are also favored by a number of subtle mechanisms, proper operation of the school, which benefits the benefited". Within an environment of exclusion it is understandable that for a teenager who is looking for an escape from his identity, to have a space where he/she can reinvent itself, may be important. Virtual communities take over the role of valve, which allow them to escape the hardships of the world said to be "real". We must also emphasize that the existence of social networks like Orkut can be explained by the new configuration of the individual in post-modernity. Relations, solid and immutable in modernity, are replaced by connections.

As explained by Zygmunt Bauman in *Liquid Love* [2004], connections do not last "for ever" and are undone and redone according to the current needs of the individual. In Orkut, you can become friends with someone with just one click: a connection is born, which can be undone with another click. (...) Human attention tends to focus on the satisfaction which we expect to obtain from relations precisely because, in some way, these have been considered full and truly satisfying [Bauman, 2004, p. 9]. The (re)construction of identity is related to the universe of possibilities afforded by the Internet, in communities such as Orkut, and that explains the recent interest in virtual communities on the part of academic studies. The topic is current, making this research relevant, since it can help to understand the impact the Internet has in daily life, practices and worldviews, highlighting the significance of school and studies.

6. Conclusion

In daily media we can perceive a constant exchange between receiver and transmitter, an interaction effect. However, the media is no longer the "mother" sovereign in these relations, and is not the one to pass on necessary information for the social subject. Ordinary people not only want to receive their messages, but they also want to feel they belong in the process of production, in order to feel real and legitimate in their daily lives.

Of course we cannot deny that the relationship of media interaction with people is still building itself and we still do not really know who is the protagonist, but it is undeniable that those changes that the media is taking, as is the case of our study, Orkut, are going to have to be made in all media processes, because if they are not, media will not be able to address its target: the postmodern subject.

In contemporary times, where "ubiquitous social control has become techno- our new environment" (Perbart, 2000, p. 15), Orkut is configured as an important artifact that provides specific techniques for production of a certain kind of youth. However, all this investment in juvenile production of subjectivities does not guarantee the formation of a specific type of youth, because the effects of the exercise of power are not guaranteed, since there is, concomitantly, a constant production of "lines of flight" (ibid., p. 14), escapes and subversion of what is planned. Thus, for those who defend Orkut, the site offers ways of being and experiencing youth, where teens may enter conflict among themselves. And to be truly young, youths connected may be required to pose as geeks or nerds.

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Image-based Online Communication: Observations on the Status of Images as Linguistic Constituents in Computer-mediated Communication

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1. Introduction

One of the central concepts in Marshall McLuhan's work is the idea that media are extensions of human faculties, our senses, our thoughts and memory. In the *Gutenberg Galaxy*, he explored how the print media revolution, triggered by Gutenberg's famous innovation, produced a change in consciousness which 'reinvented' people; its focus on printed text and our western morpho-phonemic writing system created a 'typographic man' who emerged through a shift from medieval holistic thinking to a focus on linear thinking and cause-effect rationality. In turn, the ensuing spreading of literacy and our restructured 'typographic' brains led to uniformity, 'seperatedness' and mechanization, and made possible many of the values, scientific discoveries and social movements that have helped to define modern western culture. Both *Gutenberg Galaxy* and *Understanding Media* develop this discussion further by introducing the idea that the media of the electronic age (e.g. television, radio and telephony, among other things) would lead to another shift away from typographic, individualistic, linear thinking back to a holistic, collectivist aural/oral culture.

It is not completely obvious how one should understand today's digital media revolution as regards the tension between McLuhan's linear, rational typographic man and his reconfigured, holistic 'electronic' man. The dominance of Television in the late twentieth century may have portended McLuhan's promised reconfiguration back to an aural/oral tribalism, but the mixed media of the digital age seem to have resuscitated alphabetic 'print' literacy.¹⁷² The technology (e.g. computers, smartphones, iPads, etc.) and the vast array of possible types of both passive and active interaction (through blogs, texting, message boards, chat rooms, online gaming, social networks, online newspapers and magazines, etc.), have exponentially increased our potential to inhabit and participate in 'textual' culture. Having said that, however, present-day online culture, like much of postmodern society on the whole, is visually saturated with images, illustrations, figures and animations.

¹⁷² Because McLuhan's use of the term 'visual' (which typically refers to the visual experience of alphabetic, 'print' culture) presents a terminological problem for the present study, we use the terms 'typographic' or 'print' (as in 'print literacy'), which should be understood in opposition to our use of 'visual' (e.g. in the term 'visual literacy'), to mean non-typographic elements, like images, photographs, drawings, animations, etc.

In this paper we look at the use of digital photographs and images (either user-generated or user-appropriated), many of which have been cropped, edited or manipulated, as a McLuhanesque extension of written language in computer-mediated communication (CMC). This paper is exploratory in nature, a pilot study of the possibilities of linguistic analyses as applied to new practices of image use, an observation of the interplay between images and text seen from an eclectic, interdisciplinary perspective which combines elements of media studies with semiotics, sociolinguistics and grammatical analysis.

2. The Present Study in Context

Obviously, the semiotic study of images is nothing new, it has been conducted for decades, but with a primary focus on visual literacy, i.e. how to read images in terms of implicit and connotative meanings – their veiled agendas, their underlying ideologies or their persuasive potential (as, for example, in the work of scholars like Roland Barthes 1964 & 1977, Stuart Hall 1997 and Gunther Kress 1993, 1998 & 2003 to name only a few). This type of analysis usually starts with a ‘top-down’ perspective of images as the products of agents such as advertisers, educators, journalists, etc., for mass distribution to a potentially visually-illiterate public, with the purpose of, e.g. persuading, educating, illustrating, etc. However, in the digital world of today, photographs are often used by people who do not create (and may not even alter) the original image; often the image is simply chosen from a type of shared lexicon, much the same way word/phrases are selected from the lexicon of an ordinary language. Equally important in this context is the fact that the production and purpose of the ‘original’ image is often irrelevant – it is their extrication from the original context and their subsequent use which is significant. These new practices pose a problem for any analysis intent on finding meaning solely in the techniques of image creation or which intends to decode the visual message in terms of underlying societal myths or subliminal utterances of the dominant ideology. Though the material discussed in the present study can certainly be analyzed in this way, we instead focus on the ‘bottom-up’ aspect of these images and their use, i.e. their creation and/or appropriation by everyday digital natives and the feedback processes which allow them to mutate, iterate and develop as a part of the discourse.

3. The Phenomena Investigated

In theory, the ways in which images can be used in actual CMC situations is potentially enormous and thus the possibility for various analyses and labeling under the flags of different theories is also very vast. As an introduction to the specific type of image uses under investigation, consider the following conversational exchange posted originally the *Teh Vestibule* [sic]¹⁷³ message board in October, 2010. The thread topic, started by *turniptrader* concerns an

173 *Teh Vestibule* is a free (‘gamer’) messageboard available through the IGN website. IGN was originally launched as Imagine Games Network, a network of game-oriented publications by Imagine Publishing. IGN Boards is now run by IGN Entertainment inc., a subsidiary of News Corporation (IGN 2010, *Wikipedia* [online]).

advertisement by KFC which criticizes McDonalds for putting chicken on hamburger buns:

- 1)
 - a. turniptrader: *THEY¹⁷⁴ HAVE A SANDWICH USING FRIED CHICKEN AS BUNS. That is all.*
 - b. ghostchild23: *I hate going into KFC because the fat white trash take up so much room.*
 - c. Logic-: *So leave your gf¹⁷⁵ in the car*

In addition to starting the topic, *turniptrader* also provides the first post in the thread, shown above as (1a). *Ghostchild23's* comment (1b) comes a few posts into the discussion, it has some superficial relevance to the thread topic, but clearly this response is not intended as a genuine comment on the thread but rather is an example of so-called 'trolling', intended to be humorous, but also to insult KFC patrons and provoke a response. Rather than take the bait, *Logic-* 'flames' him, effectively ending any discussion on the original topic and triggering numerous digressions on *Logic-'s* clever and devastating comeback.

Almost all of the subsequent replies use the message board's quoting function to include the above exchange (1b-c), followed by a short comment, as shown by the selected examples in (2):

- 2)
 - a. darthgundam004: *OOH SICK BURN*
 - b. SecondStranger: *Ouch baby. Very ouch.*
 - c. profscam: *SHOTS ***** FIRED!!!*
 - d. Lepoth: *el oh el*
 - e. Amuz3d2Derth: *I laughed so hard I choked*
 - f. Sham365: *LOL*

The replies dealing with the insult can be organized into two main types: attitudinal comments on *Logic-'s* verbal talent (2a-c), or those which merely laugh at it (2d-f).

Because *Teh Vestibule*, like many of today's messageboards and forums, allows for inline embedded images, a large number of the responses included image files¹⁷⁶ like those in the following figures:



Figure 1. Image depicting 'owning' (from left to right: 'cat bites dog' (PWN3D!!!) and 'bird steals food from sad wallaby').

The unconventional spelling (*Teh* instead of *The*) is an example of an internet inside joke involving common typos and spelling mistakes. This particular board was chosen due to its high user activity and because one of the authors (Danielsson) is an active participant.

174 The pronoun *they* refers to KFC.

175 gf = *girlfriend*

176 Note that only the first image in Figure 1. (PWN3D!!!) is a still jpg image – all the others are gif animations.



Figure 2. Images depicting sports achievement (from left to right: '9.7', 'Tiger Success' and 'Kobe Bryant with scorecard').



Figure 3. Images depicting laughing (from left to right: 'Tom Cruise Scientology video', 'Brendon Fraser clap' and 'George Takei laughing').

The images in Figures 1 to 3 could be analyzed and discussed in terms of two broad categories i) the way in which they signify their intended signifier (or, in the more nuanced terminology of Peirce rather than Saussure (cf. Chandler 2002: 29ff for a basic contrast between Saussure's and Peirce's models), they relate a *representamen* with its *referent*) and ii) the way in which they contribute to the conversational exchange. For the purposes of the present study, we are not specifically concerned with the processes of signification in the above images (though this matter is occasionally mentioned briefly in much of the discussion below). Instead sections 3.1 to 3.3 focus primarily on their conversational 'linguistic' contribution, which is analyzed here in terms of the three metafunctions of language as they are generally understood in Systemic Functional Linguistics (SFL) and other Social Semiotic approaches similar to SFL (see, for example Halliday 1978; Hodge & Kress 1988; Kress & van Leeuwen 2001 and Randvir 2004). The metafunctional dimensions discussed in the subsections below are the *interpersonal-social*, the *experiential* and the *textual*.¹⁷⁷

3.1 The Interpersonal-social dimension

The examples of CMC image use given above can be seen as having an interpersonal-social function in the exchange. They are image 'utterances' which we understand as dealing more (in fact, almost solely) with the perceived prestige of verbal repartee/wit, social statuses and interpersonal relationships between the speakers than with the communication of 'experiential' meanings (which would, in the framework of this study, be the use of language/images to encode experience related to the world, see section 3.2). As a way of understanding

¹⁷⁷ Though we borrow terminology and conceptual units from SFL, we make no claim to follow that framework slavishly and it should be noted that our interpretations and uses of these terms are adjusted for the present study and may vary somewhat from standard practices in SFL.

the essence of this use, it may be useful to regard them as having a pragmatic function, similar in some ways to so-called ‘smileys’ in textspeak or discourse markers (usually short, non-integrated units like *really*, *well*, *ok*, etc.) in ordinary face-to-face discourse (see, for example, Schrifin 1986 or Swan 2005). They do not contribute directly to the propositional content of a message, they simply provide a way for the reader to indicate a reaction to or position on something in the conversational flow (in this case *Logic*’s reply), i.e. approval, disapproval, boredom, admiration, awe, acknowledgement, etc.

Consider also the way in which the images in Figure 1. (‘owning’) differ from those in Figure 2. (scoring/sports images), which in turn also differ from those in Figures 3. (laughing images). Particularly interesting here is the intertextual aspect (see also section 4) of using scoring and sports achievements; it is the taking of a convention from another genre (sports) and applying it in the conversational context of the thread. Thus the speakers conceptualize the conversation as being a contest, where outsmarting an opponent is valued. They are in a way equating *Logic*’s achievement in insulting *ghostchild23* with that of sportsman.

3.2 The Experiential dimension

None of the image uses provided so far are clear illustrations of the ‘experiential’ use of visual elements in CMC. In the experiential use, the message encodes the speaker’s experience as it relates to the real world (typically to make statements about the world, ask questions, give directives, etc.). If images are integrated into this type of communication, then logically they should be considered a part of the propositional content of a message and would typically illustrate or replace (either partly or wholly) some linguistic unit in the message. Consider now another thread on *Teh Vestibule*, this time with the topic *Vesti, what do you smoke?* (posted by *your_gravest_words* on April 15, 2011). This subject triggered many image responses, most of them either user-created digital photographs of their favorite cigarettes, cigars, water pipes, etc., or user-appropriated selections from the vast collections of images to be found on the internet:



Figure 4. Images depicting what *Teh Vestibule* users smoke (from left to right: ‘American Spirit cigarettes’, ‘Cigars’ and ‘Waterpipe’).

These images are most likely to be read in the same way a textual response would be read, in other words these images would be read as *American Spirit*, *Cigars* and *Waterpipe* (or *Hookah*) respectively. Surely, it would be simpler and quicker to reply with text-only comment than to take the time and trouble to either photograph the relevant object and upload it, or search for a suitable image on the internet and then upload that.

Before we address why users would go to such lengths in these ‘visual’ utterances, consider first a similar conversational exchange and image use from the *OffTopic* site¹⁷⁸ in which a user, *Akus*, posted the topic: *In this thread post people you would pay \$ to watch perform (they must be dead). I'll start...*

The topic-starting post itself contained two images, one of Barry White and one of Frank Sinatra. A few replies were text-based and included responses in the form of names like *Chris Farley*, *John Candy*, *SRV*¹⁷⁹ or with a phrase like *no one*. Interestingly enough, like in *Vestibular-do-you-smoke* exchange above, the majority of the replies consisted of single images, with a few users adding the name of the person in question above or below the image. The replies (visual and textual) included celebrities like Johnny Cash, Kurt Cobain, John Bonham (former Led Zeppelin drummer), Bruce Lee and stand-up comedian George Carlin. Figure 5. below shows some of the images posted along with a screenshot of the post containing the Bonham image:



Figure 5. Images depicting dead celebrities (from left to right), ‘Frank Sinatra’, ‘Bruce Lee’ and ‘John Bonham’.

Like the images in Figure 4. above, these pictures are participants in the sentence structure of the utterance, used to relate to and encode the speaker’s experience of the world, regardless of the fact that the utterance is truncated and construed as a sentence fragment. The picture of John Bonham is particularly interesting in this respect as it is followed directly by a comment from *w00t_man* which reads *plus the rest of zep*. Essentially, when this utterance is understood in context, the message *w00t_man* sends is *John Bonham plus the rest of zep*.

While some semioticians are wary of talking about images in terms of grammar, we would argue that the combination of image and text here could be seen in terms of a single compound noun phrase. If you presuppose the question of the thread *Which dead artists would you pay money to see perform?*, the answer *John Bonham plus the rest of zep* fits perfectly. Neither reading only the image or the text alone provides the intended message in full. The image is necessary for the interpretation of the text (for instance defining ‘the rest’ as ‘everyone except Bonham’). In semiotic terms this is a *multimodal syntagm*, where one single message is conveyed through the combination of two different media (see Lamke 2009 for a full discussion of multimodal syntagms).

178 Offtopic.com is a general interest discussion forum with a very large following. According to *Bigboards.com*, the offtopic forums ‘have become the temple of general discussion. Anything can be discussed here by the hundreds of members present at any time, would it be news or politics as well as what happened to a member on that day, sharing altered images or imagining fictive situations.’

179 SRV = Stevie Ray Vaughan

3.3 The Textual Dimension

As a way of understanding image use in the context of the textual metafunction of language, consider again the images in Figures 1. and 2. Above. The first image (a popular internet image macro, see also section 4), that of a cat biting a terrified looking dog, is captioned with the text *PWN3D!!!*. This caption is very interesting, since it carries with it a chain of connotation. The term *pwn* has a particular meaning in online contexts. According to the *Online Slang Dictionary* (onlineslangdictionary.com), *pwn* is a variant spelling of *own* which means 'to defeat someone severely, as in a verbal argument or in a competition, often to the point of humiliation'. The text serves to anchor the content, reducing the number of possible readings (cf. Barthes 1977: 38ff). The eclectic spelling serves to indicate that this expression of the sign is connected to gaming culture. The Online Slang Dictionary also notes that the form *pwn* is mostly used by computer gamers and comes from the fact that the key for *P* is adjacent to *O* on most keyboards and that the form probably originated from frequent typos. In this case, though, one must assume that the author made a conscious choice.

The image thus carries with it connotations not only of defeat, but defeat specifically as it is typically expressed in videogames. Considering the nature of *Teh Vestibule* as an online community centered on gaming (as a part of the larger IGN website), the choice of expression is natural. The fact that the caption relates to gaming is important in an intertextual sense as well, since this alludes to another genre of communication further connecting it to the social context: in-game chats. The image is not just a mix of text and image; it is a mix of a *specific genre of text* and image. The choice of the unorthodox spelling and indeed the choice of word in the image are both part of an attempt to draw on the relevant codes fitting the context. The spelling itself suggests a rushed and frantic response. While the substitution of the letter 3 for *E* is more of an in-joke (or a nod to the geek subculture that uses 1337 spellings, see *leet*, 2011 (Wikipedia [online])) than anything else, the substitution of *P* for *O* and *I* for *!* suggests typos due to rushed typing. The number *1* is on the same key as *!* and when writing several exclamation marks after each other in rapid succession it is easy mistake these two characters.

One further implication of the parallel with videogames is the fact that the users seem to equate their message board interactions with gaming in some sense. This use of images and themes from competitive videogames applied to conversation suggest that these insults and their reaction are part of this message board culture. This is clear when looking at example (2a), *OOH SICK BURN*, which directly comments on the insult itself rather than the situation. The ritual give-and-take of insults seems to be a part of the sociolinguistic conventions of this genre.

4. Image Macros, Memes and Intertextuality

It cannot escape the attention of anyone examining internet communication practices that many images have a special status as often repeated image macros or memes. Image macros are images with superimposed text, typically used for a humorous effect (cf. Image macro, 2011, Wikipedia [online]). The term *Internet meme* is a phrase used to describe a catchphrase, concept, image, etc. that spreads quickly from person to person via the Internet, much like an esoteric inside joke.

According to the *Wikipedia* 'an Internet meme may stay the same or may evolve over time,

by chance or through commentary, imitations, parody, or even by collecting news accounts about itself' (Internet meme, 2011, *Wikipedia* [online]). Internet memes can develop, mutate and proliferate extremely fast, often reaching world-wide popularity (which is sometimes referred to as going 'viral'¹⁸⁰) and vanishing all in a few days. They are spread organically, voluntarily, and peer-to-peer, rather than by predetermined or automated means.

The importance of the image macro/meme phenomena is especially relevant in interpreting CMC image use from an intertextual point of view. In other words, how should we understand the selection of these particular images and how does that selection relate to their use in these particular contexts? In the case of the image of Tom Cruise, it is likely because the original video (leaked from the Church of Scientology) created a great deal of interest when it first surfaced (*Tom Cruise Scientology Video - (Original UNCUT)*, 2010, *Youtube* [online]). One version of the video has over 6 million views on Youtube, and the segment of him laughing has seen many "remixes" and edits. Thus his particular laugh has become a part of internet sub-culture. The same goes for the image of Brendan Fraser (*Brendan Fraser clap*, 2010, *Youtube* [online]). The other image (George Takei) does not seem to have the same kind of viral background. It is interesting to note here that all these images are user-appropriated, employing ready-made pieces of media output, rather than representations of the user themselves. The users might very well crop, edit and adapt the material into a finished image, but they do not create the basic elements. One could imagine that with current technology available in the form of web-cams it would be simple for users to record themselves laughing and post those images instead. No such examples were found however.

Aside from the anonymity factor, using material that is part of the media output, utilizing shared knowledge appears to be an important feature of the practice of image posting. One aspect of this that cannot be answered by this study is to what extent the sources actually constitute a part of the message. Could the fact that it is Tom Cruise laughing, rather than George Takei, alter the interpretation of the sign? Potentially, this could be true for some images in certain contexts, but further research using experimental studies would be required to investigate such an effect.

5. Image Use in Relation to Unconventional Orthography

Another related aspect of internet communication that is generally noted in the discussions of CMC is the frequent use of unusual or unconventional orthography. In as brief an explanation as possible, so-called 'textspeak' or 'txng' can be described as a combination of abbreviations, symbols, pictograms, logograms and general wordplay. As David Crystal points out in his (2008) book *Txtng: The Gr8 Db8*, none of the often bemoaned textspeak practices are recent innovations, but rather stem from much older traditions. While textspeak orthography is very popular in CMC, it is not central to the present discussion, what is relevant is how the conventions of textspeak parallel some of the developments we have noted above and also how they may have primed users for image use in CMC. For example, abbreviations

180 Some scholars, such as Jenkins (2009) do not find the metaphors of 'memes' and 'viruses' to be helpful. In his view these materials travel through the web because they are meaningful to the people who spread them and not because they have any self-replicating properties.

like *lol*, *omg*, *brb*, *lmao*, *wtf* are often used as prefabricated units in textspeak exchanges, those who use such abbreviations do not have to consider the process of concocting them or reflect on their literal meanings; they are selected as ready-made elements from a shared vocabulary. Another common feature is the *logogram*, for example the use of 2 to mean 'to', *b* to mean 'be', @ to mean 'at' or 4 to mean 'for'. Such logograms can be used separately or as parts of larger elements as in *2day* 'today' or *b4* 'before'. etc. Finally, and more relevantly for the topic at hand, is the use of *pictograms*, which are visual shapes that are used to represent things or concepts, the most obvious of which in text-speak are so-called smileys, for example :-) means 'smile', ;-) means 'wink' and ;-P means something like 'winking and sticking out tongue'.

Though such orthographic conventions do not contain photographic images like those in the examples examined in the present work, they do show some similarities and highlight some of the trends underlying both these types of 'anti-typographic' utterances.¹⁸¹ Firstly, image-based CMC and text-speak have in common that they signal a 'linguistic identity' (see also section 6 below) on the part of the user. It shows that you are aware of, and can use correctly, certain (linguistic) codes that identify you as a member of the group with shared knowledge and interests.

Secondly, text-speak pictograms are used in very similar ways to some of the types of image uses noted above, for example the 'laughing' gifs in Figure 3. and abbreviations like 'lol' and pictographic 'smileys' have the pragmatic function of showing approval and are not integrated into propositional content of the utterance.

Thirdly, text-speak pictograms and some image elements in CMCs signify in similar ways – i.e. for all intents and purposes, they have a one-to-one, direct or iconic correspondence to that which they signify – in their typical uses, we need only understand that the smiley or the image in question (e.g. those in Figure 3.) shows someone smiling or laughing to understand its message.

Finally, text-speak utterances and some CMC-image utterances can have a rebus-like quality. They encode typographic and non-typographic units in messages in novel, sometimes esoteric or far-fetched, ways that test the cleverness of the producer of the utterance as well as the intended addressees. They show an appreciation of wordplay and humor that is abundant in both text speak and image-based CMC (for a discussion of the playful aspect of textspeak, see Crystal 2008: 71ff).

Taking this comparison of non-typographic writing systems a bit further, we can say that image-based CMC appears to go beyond typical pictograms by more readily exploiting a potential for use as *ideograms*, i.e. characters, symbols or images that represent complete ideas or concepts. For example, one can read the 'owning' images in Figure 1. like ideograms or visual metaphors whose explicit relationship to the idea or concept being signified must be interpreted indirectly via a chain of connotations or through a previous knowledge of conventions.

In this context, it is interesting to note one of McLuhan's observations on different writing systems as he expresses it in *Understanding Media*:

As an intensification and extension of the visual function, the phonetic alphabet diminishes the role of the other senses of sound and touch and taste in any literate culture. The fact that this

181 In this context, it is interesting to note that in Akus's thread on dead celebrities discussed above, he/she uses the '\$' character instead of writing the word *money* or even *big money*.

does not happen in cultures such as the Chinese, which use nonphonetic scripts, enables them to retain a rich store of inclusive perception in depth of experience that tends to become eroded in civilized cultures of the phonetic alphabet. For the ideogram is an inclusive gestalt, not an analytic dissociation of senses and functions like phonetic writing. (1964: 91-92)

We cannot comment on the accuracy of McLuhan's observations on the relation between ideograms and Chinese culture, however his comparison between phonetic alphabet, which dissociates the senses, and the 'inclusive *gestalt*' of the ideogram is quite striking.

6. Discussion: What's it all about?

In section 3.2 above, it was noted that using images in some cases is more time consuming and complicated than simply typing the intended message – the question then is: why bother? Naturally, whenever one asks the question 'why' of such an issue, one of the inevitable, clichéd answers is 'because it's there'. In the case of image use in CMC, this answer is more than just a platitude. Since the technology makes it possible, it is only to be expected that people will exploit it, in more or less elegant ways, to expand communicative potential.

Another motive is simply the way in which images can effectively complement or synergistically combine with textual messages; in the specific context of this study, this is especially relevant in regard to verbal playfulness. Crystal (1996) comments that '[I]language play occurs when people manipulate the forms and functions of language as a source of fun for themselves and/or for the people they are with. Everyone, regardless of cognitive level, plays with language or responds to language play' (p. 328). As we have noted in the conversational exchanges above, verbal cleverness and repartee are highly-admired attributes in the online communities examined. In image-based CMC, the entertainment value of such repartee makes it a goal in itself and it may be, depending on the specific community norms and expected behaviors, an important rapport building strategy.

The final reason offered here, also mentioned briefly in section 5 above, crucially revolves around sociolinguistic notions such as linguistic identity and *performativity* (cf. Butler 1990 for an early discussion of the term). In Tagg's (2009) discussion of texting and texters (which is equally applicable to the image users of this study), she states that:

[...] through their choice of respellings, texters draw on awareness of other language domains in construing texting identities through performances of spoken informality, of brevity and of deviance. This perspective recognizes [...] the active role that texters play in choosing how to mean, how surrounding discourses and conventions constrain these choices, and how the choices made can change according to purpose and audience.' (p. 154)

Linguistic identity in both text-speak and image-based CMC can thus involve two (seemingly contradictory) motives for unorthodox and innovative linguistic expression, it can satisfy an individualistic desire to define and express oneself in 'unique' ways (which is now enhanced because of the medium), while at the same time it can function as a way of positioning oneself within a group identity. A crucial aspect of the group identity here is the technology through which it communicates - in other words, if one derives social prestige from

inhabiting a digital world that defines itself in part through its technology, then utterances that explore and exploit the communicative possibilities and meaning-making potential of that technology will emphasize group belonging.

7. Notes and Final Remarks

From a McLuhanesque standpoint, photography (which, unfortunately, has not been discussed here as a medium in its own right due to limitations of space) is typically seen as a 'hot' medium due to its 'visually, "high definition"' quality. However, with technical advances and the widespread manipulation of images, the distinction between 'hot' and 'cold' in this medium is blurred – digital photography and software such as *Photoshop* allow practically anyone to combine, modify and recycle images in previously unimaginable ways. Additionally, factors such as the greater processing and storing capacity of computers, easy access to a virtually infinite archive of images, and today's ever growing bandwidth, have coalesced to make (manipulated) photographic images a viable and increasingly important component of online communication; a means of expression which extends language beyond its normal bounds.

As our modes of expression become more and more varied and sophisticated, so does the need for an analysis of our expression. Since image-based communication is closely integrated with media output, the language it creates automatically becomes intertextual and coupled to other cultural phenomena, giving it both a familiar, stable quality as well as an unfamiliar and ephemeral one. Additionally, the speed at which these images spread, mutate and are (re)appropriated makes them very sensitive to the surrounding media-landscape. As McLuhan first suggested, the form of a new medium produces psychic and social change in other media forms and gives us a new pattern of perception for looking at the world. This investigation shows that in the use of digital images in online communication, one can see the formation of new conventions which may entail possible concomitant shifts in cognition and patterns of perception.

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Primary Material (Messageboard threads)

- KFC has a commercial raising an issue about McDonalds putting chicken on burger buns.* http://boards.ign.com/teh_vestibule/b5296/197020572/p1
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The Sensorium of Social Media: 'Tactile' Cyberculture and McLuhan's Turn On the Audiovisual

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Introduction

Once upon a time Jen Colton, granddaughter to Marshall McLuhan, told a story about her grandfather: In the days before TV remote controls, the original media guru connected a simple light switch on a very long wire to the speaker of his television set, so that when a commercial interrupted the program, Mr. McLuhan could mute the sound without getting out of his wingback chair. (Pescovitz 2010)¹⁸²

This bon mot, whether it is true or not, should lead through the following text. Herbert Marshall McLuhan, undisputable one of the key thinkers of what became 'the media' and hence, media studies, one of the most quoted public intellectuals by both aphorists of 'the media' as well as scholars of media studies, could most easily be imagined altering the TV in this way. The witticism of McLuhan's assumed modification of the apparatus by connecting a remote switch to the speaker boxes of his television set can be considered a tale of true media hacker spirit, before we did even know what 'the media' were. Though: McLuhan is imagined to choose the easiest way to get rid of unwanted content – he switched off. The bon mot, be it true or not, is indeed an example of how one believes how one of the most visionary thinkers

182 Douglas Rushkoff pictures the image of a 1950s father: "Imagine if your father were watching that aspirin commercial back in 1955 on his old console television. Even if he suspected that he was watching a commercial designed to put him in a state of anxiety, in order to change the channel and remove himself from the externally imposed tension, he would have to move the popcorn off his lap, pull up the lever on his recliner, walk up to the television set and manually turn the dial. All that amounts to a somewhat rebellious action for a bleary-eyed television viewer. To sit through the rest of the commercial, however harrowing, might cost him only a tiny quantity of human energy until the pills come out of the drawer. The brain, being lazy, chooses the path of least resistance and Dad sits through the whole commercial. Flash forward to 1990. A kid with a remote control in his hand makes the same mental calculation: an ounce of stress, or an infinitesimally small quantity of human effort to move his finger an eighth of an inch and he's free! The remote control gives viewers the power to remove themselves from the storyteller's spell with almost no effort. Watch a kid (or observe yourself) next time he channel surfs from programme to programme. He's not changing the channel because he's bored, but he surfs away when he senses that he's being put into an imposed state of tension. The remote control breaks down the what. It allows a viewer to deconstruct the content of television media, and avoid falling under the programmer's spell. If a viewer does get back around the dial to watch the end of a programme, he no longer has the same captivated orientation. Kids with remotes aren't watching television, they are watching the television (the physical machine) playing 'television', putting it through its paces. (Rushkoff 2003, 23)

of not only television, but ‘the media’ of his time in general, would have reacted to the media scopes that surrounded him and his contemporaries. More specifically and intriguingly, the episode shows how the rise of television not only changed the way people interacted with the media, but also how TV has given way to new theories of forms of participation, interaction, multi channels etc., all forms we today hold unique for the ‘new’ media (which are, in common parlance, a loose conglomerate of phenomena such as the Internet, user generated content and Web 2.0, interactive multimedia, virtual reality, video and computer games and related hardware) and thus are often interrogated isolated from their historical range.

Scholars like Friedrich Kittler (2002), Christoph Tholen (2002), Stefan Rieger (2003), or, most recently Jussi Parikka (2011) have shown in the last one and a half decades, that the technical constitution of the media themselves laid the ground for an anthropological media theory of technical media for which Marshall McLuhan’s work can be considered constitutive.¹⁸³ The need to interrogate our media’s past, and, even more, connect the history of media theory to a history of the media is a duty which will continue to be quested. I will thus use an archaeological approach to the study of media, an approach which in fact is supplied by a bundle of assumptions and/or postulates by various authors that can be subsumed “media archaeology”, an approach that focuses on the interplay (or discourse analysis) on how media were designed, used, and written about. (cf. Huhtamo/Parikka 2011) In doing so I hope to spell out how discourses about tactility and participation the media within the technical conditions of the media themselves – discourses which arose from the technical structure of the media’s apparatuses and discourses of the apparatuses themselves. (Mersch 2003, 199)¹⁸⁴

This paper discusses the concept of tactility in the discourses on and of ‘new’ media as a discourse of interactivity, which has become obvious as a convenient build-in technology since Web 2.0 at the latest. (Schäfer 2011, 264 et sqq.) My main argument indicates that the metaphorical use of ‘tactility’ when referring to ‘new’ media is one that masks underlying ideologies of a cultural industry. Starting with McLuhan and the theory of media developed in *Understanding Media* (McLuhan 2003) which is, as I will make the case, a theory of the media under the influence of mass media, esp. television, then proceeding to Derrick de Kerckhove and his notions about the possibilities of user participation by means of the computer or the Internet (de Kerckhove 1995a), I will look at how technological inventions and market launches have historically influenced the media theory of their times. My postulation will be that McLuhan’s media theory as developed in *Understanding Media* is epistemologically related to the advent of television, as much as de Kerckhove’s continuation of McLuhan’s theory is related to the advent of the Internet. I will trace the notions of tactility, interactivity, participation in the work of Marshall McLuhan and Derrick de Kerckhove and conclude with a critical analysis on how modes of participation are maintained, yet simulated in contemporary cyberculture.

183 To quote as an example (German): „[J]ede an die Funktionen des Körpers gebundene Metaphorik, welche die Ersatzwelt der technischen Medien auf die Erweiterung oder Amputation des Körpers und seiner Sinnesorganisation reduziert[...], erleidet in ihrer zeitgenössischen Variante dank der unspezifischen Vielfalt, die das digitale Medium jenseits mechanischer oder organischer Bilder eröffnet, eine nachhaltige Irritation.“ (Tholen 2002, 19)

184 Mersch’s German text reads: „Diskurse aus Apparaten“ / „die Diskursivität der Apparate selber“ (Mersch 2003, 199). I owe this hint to Mersch’s text to Florian Sprenger in Vienna

The rise of TV, the rise of McLuhan

In the first part of his Information age trilogy *The Network Society*, Manuel Castells coined the term “McLuhan Galaxy” to show the shifting paradigm of the 1940s, 1950s and 1960s to the paradigm of television. (Castells 2001, 358 et sqq.) Not only did Castells use the term *galaxy*, a term coined by McLuhan to describe the groundbreaking influence of print technology on European culture and human consciousness, he also shows how the TV became the predominant medium in the time McLuhan wrote his first three books *The Mechanical Bride* (1951), *The Gutenberg Galaxy* (1962), and *Understanding Media* (1964).

*“The diffusion of television in the three decades following World War II (in different times and with variable intensity depending on countries) created a new galaxy of communication, if I may use the McLuhanian terminology. Not that other media disappeared, but they were restructured and reorganized in a system whose heart was made of vacuum tubes and whose appealing face was a television screen.”*¹⁸⁵ [1] (Castells 2001, 358)

Let us at first look at how McLuhan described the tactility of the TV in his *Understanding Media* of 1964. McLuhan’s theory of the media is, in its very core, one of how media are perceived, which senses are involved, and how a new medium alters use of the senses as opposed to media that are longer in use or overcome. A new medium “shifts the ratios among all the senses” [2] (McLuhan 2003, 95) in so far as it makes possible, or necessary, an adjustment or rearrangement of man’s sensorium. Thus, McLuhan can consider the radio a visual medium and the photo an auditory medium, due to a sensorial shift which divides media into ‘hot’ and ‘cool’ by relating media to their predecessors or successors:

“A hot medium is one that extends one single sense in ‘high definition’. High definition is the state of being well filled with data. [...] A cool medium [...] has very different effects from the hot. [...] [T]he past mechanical time was hot, and we of the TV age are cool. [...] A cool medium like TV, when really used, demands this involvement in process.” [3] (McLuhan 2003, 39, 44, 49)

A medium always relates, thus it is ‘hot’ or ‘cool’ in relation to another medium, and thus the effects of a medium always relate to another, similar, or overcome medium. TV is a ‘cool’ medium, because it needs active involvement, as compared to still images or the moving image of the cinema:

“The mode of the TV image has nothing in common with film or photo, except that it offers also a nonverbal gestalt or posture of forms. With TV, the viewer is the screen. [...] The TV image is visually low in data. The TV image is not a still shot. It is not photo in any sense, but ceaselessly forming contour of things limned by the scanning finger. [...] The TV image requires each instant that we ‘close’ the spaces in a mesh by a convulsive sensuous participation, that is profoundly kinetic and tactile, because tactility is the interplay of the senses, rather than the isolated contact of skin and object.” [4] (McLuhan 2003, 418 et seq.)

¹⁸⁵ note that Castells, too, uses metaphors of the body. Castells refers to a “lazy audience” (Castells 2001, 359) in the *McLuhan galaxy*, the first wired remote control of 1950 was named “Lazy Bones”

McLuhan wrote the three books which established him as the original 'media guru' in times where the TV sets became more and more a standard equipment of every North-American household. With increasingly saturated markets, the TV viewer in the US or Canada had the problem of selection ("Selektionsproblem" [5], Engell 2003, 63): At least in the great cities of North America, more than one program could be received.¹⁸⁶ To make viewers able to switch between channels/stations, since 1956 some TV sets were equipped with remote controls. It was not until the 1980s that the remote control became standard equipment of the television set, but the desire to immediate interaction with the apparatus (without getting out of the chair) was detected in the 1950s. (Rosen 2005) The remote control then became the tool in the hand of the viewer to 'interact' with (i.e. to choose a certain program out of the range of initially few channels) the TV. This fundamentally changed how programs were perceived: The program could be deconstructed and, within the limited possibilities of few or later numerous programs, reconstructed by the viewers (or destructed: commercial breaks zapped, or muted). (cf. Engell 2003, Rushkoff 2003, Winkler 1991)¹⁸⁷

The groundbreaking, or 'cool' quality of TV is thus accompanied by a possibility to switch, zap, choose, or refuse content or unwanted parts of the content (e.g. 'muting' or switching off). TV's possibilities to produce, or make imaginable, spatial immediacy was thus endorsed by another quality of instantaneity: While the screen allows to seeing distant places, the remote control allows to switch/zap/choose between the different offerings of distance.¹⁸⁸

186 See e.g. *Canada Year Books* 1958, 1959, 1960, 1961, published by the Ministry of Trade and Commerce and Vane A. Jones, *North American AM-FM-Radio-TV Station Listings* (Summer 1958 and 1963 respectively). Jones lists for e.g. Toronto CBC's CBLT for 1958 and CBC's CBLT and CFTO-TV, as well as Satellite stations of less than 100 watts ERP, which were "not listed" for 1963. The alphabetical indexes of *The Canada Year Book* began to list television broadcasting separately from radio (and as part of its Communications section) in 1960. In the Yearbooks of 1958 and 1959, television and radio were subsumed as one instance. From 1960 to 1962, the Yearbook also lists TV monitor manufacturing as a part of its section Industrial Development / Manufactures / Electronics. The consecutive Yearbooks between 1958 and 1961 list a growth from 90 p.c. to 93 p.c. in terms of receptability of TV programs. Between 1958 and 1961, the percentage of households equipped with TV sets rose from 70 to 75 p.c.

187 a longer quote would read: "Scharf und absolut als Gegenwartspunkt artikuliert sich demgegenüber der Moment des Umschaltens, des Tastendrucks selbst. Der Tastendruck markiert und produziert die Differenz von Vorher und Nachher, von Aktualität und Virtualität. In ihm berühren sich die beiden parallel laufenden Sendungen, die er aneinander vermittelt, ebenso wie die Ereignisse auf dem Bildschirm sich mit denen vor dem Bildschirm beim Tastendruck berühren und synchronisiert werden, wenngleich eben nur für diesen Moment. Selbst eigentlich ausdehnungslos, ist der Tastendruck der Fernbedienung schlechthin die Erfahrungsform von Gegenwärtigkeit als Punktualität im und beim Fernsehen." (Engell 2003, 66)

188 McLuhan's utopian and synaesthetic theory of the immediacy of media must be contrasted with Samuel Weber's description of television: "[Television is] a phenomenon that is so close to us, so ubiquitous and so powerful, that it has proved particular resistant to thought." (Weber 1996, 108)

"[T]he notion of ‚distance‘ is preserved only as an obstacle to be surmounted, either by an intangible 'sixth sense' (telepathy) or, more frequently, by some sort of mechanical device or electronic apparatus (telescope, telephone, television)." (Weber, 1996, 114)

"The television transmission does not [...], as is generally supposed, simply overcome distance and separation. (This is the illusion of the 'global village'.) It renders them invisible, paradoxically, by transposing them into the vision it transmits. Transmitted vision and audition 'contain', as it were, distance and separation while at the same time confounding the points of reference that allow us to determine what is near and what is far [...]" (Weber 1996, 122)

McLuhan describes the interactivity of television by means of a sensual involvement of the viewer due to the technical condition of the television: the image is, due to the vertical lines of the cathode ray tube, not completed; it has to be completed by tactile involvement of the viewer's eye. Since media extend it also becomes clear that tactility is not only the sense of skin but also the sense of understanding, of perception itself, of grasping a concept, a *sensus communis*, the "common sense"¹⁸⁹ [6] (McLuhan 2003, 89), "the sense of all senses"¹⁹⁰ [7] (Heilmann 2010, 127), an "involvement of the whole body"¹⁹¹ [8] (de Kerckhove 1993, 147). Tactility thus does not mean a simple touching or gripping, but at the same involvement and understanding¹⁹².

Though this subliminal completion of the horizontal cathode rays of the TV image, which makes TV 'cool' and 'tactile', the device introduced by the manufactures of TV sets and which became necessary during the 1950s and 1960s due to the availability of more than one channel, was the market's answer to an assumed involved viewer. There has indeed a media archaeology of the remote control (ranging from the first wired remote control *Lazy Bones*¹⁹³ of 1950, the directional light *Flash-o-matic* of 1955, the ultrasonic *Wireless Wizard* (1961) to the universal remote control of 1985) and how it changed programming in the 1950s and 1960s, how the networks intervened in the commercial launch of remote controls,¹⁹⁴ yet to be written. But, in the words of József Tillman, with the mere existence of the TV remote control, the question arises: "Who or what has whom or what in the grip? Who or what takes matters into one's own hands? Who is whose servant, who is whose captive?"¹⁹⁵ [9]

Tactility: Skin, Touch, and new Media

In the tactility of the TV screen (a medium which is, in common parlance, an audiovisual medium, or, in the meaning of the word, vision from distance) McLuhan discovers what is

189 a longer version of the quote would read as: "It begins to be evident that 'touch' is not skin but the interplay of senses, and 'keeping in touch' or 'getting in touch' is a matter of a fruitful meeting of the senses, of sight translated into sound and sound into movement, and taste and smell. The 'common sense' was for many centuries held to be the peculiar human power of translating one kind of experience of one sense into all the senses [...]" (McLuhan 2003, 89)

190 the German text reads „der Sinn aller Sinne“

191 the German translation reads "Fernsehen ruft unvermeidlich multisensorische Antworten hervor, die unseren ganzen Leib ins Spiel bringen."

192 The German word "Begriff": idea, concept, term, is etymologically related to "greifen" (to grip or take hold of something), and "Griff" (the handle, the grip, the grasp), its non-finite verb form is "begreifen" (to grasp)

193 The *Lazy Bones* worked as follows: A motor operated the tuner in the TV set, by pushing buttons on the control, a signal was transmitted through a wire, rotating the mechanical tuner in the direction of the channel to a higher or lower number. The *Lazy Bones* included a button to turn the TV on/off. (cf. Phil Ament, "Remote Control History." <http://www.ideafinder.com/history/inventions/remotectl.htm> (accessed March 22nd, 2011))

194 One may think of, for instance, today's "Squeeze and Tease" credits of NBC and BBC

195 The whole quote reads, in German: „In ihr [der Fernbedienung] ist der Geist der Technokultur kompakt und greifbar verkörpert, in ihr erscheint das übrigens sehr weit gehende abstrakte Prinzip der Vereinigung von Macht und Elektrifizierung. Über einen unsichtbaren Strom von Zeichen und Symbolen wird der Mensch plötzlich allmächtig. Dabei steht aber ständig die Frage: wer oder was hält wen oder was in der Hand? Wer oder was ergreift die Hand des anderen? Wer ist wessen Diener oder Gefangener?“ (Tillmann 2001)

in the possibility of TV to produce involvement and interaction, thus broadening the concept of tactility as that of a community, “the common sense” [10] (McLuhan 2003, 89), the realization of a connected society. (cf. Heilmann 2010) While 1964 in *Understanding Media*, tactility is the referential sense and TV is the dominant medium, 30 years later and with the advent of the Internet and instantaneous, real-time connectedness, proprioception (sensual awareness of oneself) becomes the referential sense for societies in which the computer has become the dominant medium. Derrick de Kerckhove follows McLuhan when he argues, that interactivity began under the influence of television. The visioning of the TV screen with its horizontal image deflection of the cathode ray tube technology is a profoundly tactile (at the same time visual and auditive) experience: “TV inevitably calls for multi sensory reactions, which involve our whole body” [11] (de Kerckhove 1993, 147)¹⁹⁶, or, in another text, “TV is challenging our previously, dominant literate mindset by substituting its own tactile, collective orality.” [12] (de Kerckhove 1995a, 13)

De Kerckhove, McLuhan’s successor and internet’s contemporary, prolongs McLuhan’s notion of tactility/interactivity into the era of computer networks. In *The Skin of Culture* and other texts of the 1990s, de Kerckhove develops a theory of computer networks, cyberspace and virtual reality, in which the computer is, within a genealogical understanding of the media, the subsequent medium after TV. (de Kerckhove 1995b) Drawing on McLuhan’s various notions of tactility as a core element of new media (McLuhan 2003, and *massage*, McLuhan/Fiore 1967) de Kerckhove draws on the interactivity of the media, in which not only the sense of touch, but the whole body is involved in reception and communication. The configuration of the computer and esp. the connection of multiple computers into global networks (an “electronic highway” [13], de Kerckhove 1995a, 51 et sqq.) extends the tactility of the TV into the age of the Internet. The notion of tactility is thus prolonged in the age of computers and global electronic communication, and at the same time carried to its extremes by notions of an self-aware, proprioceptive involvement of the whole body (de Kerckhove 1993) and also connected cognition (de Kerckhove 1995a, 208 et sqq.). The adaptation of McLuhan’s theory of the media for the age of computers is thus done by a rereading and updating of metaphors of the body. Not surprisingly, de Kerckhove mentions the remote control as *the first step* of a mass audience towards interactivity: “The invention of the remote control was the first step, which mass audiences did when heading for interactivity.”¹⁹⁷ [14] (de Kerckhove 1993, 153)

This way, the remote control becomes the epitome for the possibility of ‘choosing’ under the conditions of media. Matthias Bickenbach has shown how the meandering notions auf the auditory, the visual, the tactile and bodily involvement in the works of McLuhan and de Kerckhove resulted in a yet undecided status of communication not with, but through the media. (Bickenbach 2010) The history of the TV screen, of the computer screen, the remote control, and the interface with user’s possibilities to complexly interact with machines can be told as a genealogy of user participation. But it is yet to ask, does user participation lead to an active form of involvement? Can user interaction be a critical invention or just a (binary)

196 The German translation reads „Fernsehen ruft unvermeidlich multisensorische Antworten hervor, die unseren ganzen Leib ins Spiel bringen“

197 “Die Fernbedienung ermöglicht es dem Benutzer, wenn schon nicht in feedback mit der Fernsehapparatur zu treten, so doch zumindest das Fernsehen unter seiner Kontrolle zu halten und in Echt-Zeit das Zusammenstellen von ‘live’-Informations-Verarbeitung einzuüben. Die Erfindung der Fernbedienung war der erste Schritt, den das Massenpublikum in Richtung Interaktivität tat.“ (de Kerckhove 1993, 153)

affirmation of what a cultural industry provides to consumers-made users? Have not utopias of tactile user participation become obsolete with the push-button instantaneity of recent phenomena such as 'liking' or 'becoming a friend' on Facebook, of 'One-click-buy' on Amazon, of 'flattering' via Flattr?

The computer, particularly the Internet and the recent phenomena of Web 2.0 have been represented as enabling technologies, turning consumers into users and users into producers. The rapidly unfolding online involvement by users, starting with online identities like MySpace or Facebook, Flickr photo sharing, Twitter usage, political blogging, file sharing and specifically sharing of files intended for political communication (Wikileaks); the whole geek culture is so rapidly evolving, that it is impossible to make a final statement about. The *common sense* of cyberculture seems to be the tactile, a skin-brain-relation: When Tim O'Reilly introduced the Web 2.0 or 'social web' in 2005, he described the possibilities and conveniences of Web 2.0 with references to functionalities of the body. With O'Reilly's description of the blogosphere McLuhan's notion of the 'global village' continues to live: „If an essential part of Web 2.0 is harnessing collective intelligence, turning the web into a kind of global brain, the blogosphere is the equivalent of constant mental chatter in the forebrain, the voice we hear in all of our heads." [15] (O'Reilly 2005)

O'Reilly uses the brain as a metaphor for the supposedly neuronal organization of Web 2.0: "Tagging allows for the kind of multiple, overlapping associations that the brain itself uses, rather than rigid categories." [16] (O'Reilly 2005) *Tagging* (to mark something by attaching a tag to it) is, for example on sites like del.icio.us, is part of the so called 'social web', with users being able to attach keywords to certain links. Tagging thus allows to place own contents so that users can share their (useful or not) associations to a certain content and share it with other users using the same platform.

The same desire for could be discovered in *skimming*, a superficial intervention in the visual surfaces of desktops and/or program interfaces, or the recent developments of body-controlled interfaces introduced to the market of video games. It can be argued that these interfaces like rumble controls, proprioceptive game controllers, camera devices to capture movements were introduced to raise market shares in difficult market segments (women, elderly, children). In his book *Bastard Culture*, Mirko Tobias Schäfer argues that user participation is rather an interaction of users with companies. According to Schäfer, computers and the Internet transform the traditional consumers of the culture industry into users, who actively participate, but only within the sphere of the cultural industry, by appropriating products from the commercial domain. (Schäfer 2011) Push-button interaction is exactly this: a tactile interaction of users to content. Tagging (del.icio.us), #hash tagging and faving (Twitter), liking and poking (Facebook), users are encouraged to simply 'approve' content, thus diminishing interaction to a convenient (and one-way binary) sign of affirmation. Even more crucial, the industry has already begun to adopt push-button affirmation with the possibilities to make easy monetary transactions (Flattr, One-Click-Buy). This culture of push-button instantaneity is of course far away from a, for instance, Brechtian radio theory which arrogates to completely abolish the difference between distribution and communication. (Brecht 1980)¹⁹⁸

198 For a Brechtian argument see further the Wired-Interview with Derrick de Kerckhove: "On the Web, Karl Marx's dream has been realized: the tools and the means of production are in the hands of workers. ... Broadcasters will continue being. You can't destroy such a powerful base." *Wired* 4.10, Oct 1996, viewed 15 April, http://www.wired.com/wired/archive/4.10/dekerckhove_pr.html

In his quirky and often associative writings and musings,¹⁹⁹ McLuhan anticipated many of current trends in cyberculture. The notion of tactility, presented as a notion of tele-tactility in *Understanding Media*, continues to live and an understanding of this notion has become a basic requirement for usability design and convenient interaction on the Internet. The possibilities of blogging as alternatives to professional broadcasters, of producing and publishing long texts, or mixing tags and text with for instance, #hash tagging, of micropayment systems like Flattr is of course far more complex than this paper is able to show. But one should be aware that the “common sense” of interaction is too often reduced to easy affirmation. If you think of the bon mot from the beginning, McLuhan discovered a possibility by an instant, spontaneous, real-time interaction with the TV. He muted. He did not intervene though. He did not even change channels.

Addendum: interaction, instant communication, and recent insurrections

In the time between the proposal for this paper and its acceptance, my focus has also been drawn to the political proceedings in North Africa and the Middle East. The recent insurrections in Libya, Egypt and other countries have shown that active users can indeed inform the world outside the distribution channels of professional broadcasters. Besides, the insurrectionists spreading information about upcoming events on Facebook and via text messages have been widely received by the media.

Intervention at a distance can never be a substitute for the actual act of intervention.²⁰⁰ The users held most trustworthy by broadcasters were actually on the scene, and involved in the political proceedings in the countries where they live or the countries of their origin long before the conflicts became visible for ‘Western’ media. Professional broadcasters more and more referred to political bloggers and web-/activists to authenticate their information policy. The users themselves were dependent on platforms and hosts like Flickr, Twitter, Wordpress or Blogger. Tweeps and Bloggers like Hossam Arabawy (@3arabawy), Sarah Carr (inainties.org), Mahmoud Salem (@sandmonkey) or Matthew Cassel (justimage.org) were putting insightful and alternative information in their blogs and spreading links via Twitter. They had, however, to fear censorship from their respective authorities like Mubarak shutting down social websites or blocking text messaging. (Tsostis 2011b) On the other hand, global photo platform Flickr, whose content is fuelled by user generated content only, ominously refused to publish photos by an Egyptian blogger exposing Egyptian secret service officers and claimed copy-right infringements. (Tsostis 2011a)

In *The Medium is the Massage*, McLuhan anticipated that “[i]n an electronic information environment, minority groups can no longer be contained-ignored. Too many people know too much about each other. Our new environment compels commitment and participation. We have become

199 For McLuhan’s writing and thinking cf. the yet unrivaled *Re-reading* reader by Schmidt/Leeker/de Kerckhove, e.g. Peters 2008

200 For a critical intervention see Paul Virilio: “[T]he instantaneousness of interaction never quite manages to eliminate the distinction between the actual act itself and acting at a distance.” (Virilio 1992, 86), cf. Virilio 2002

irrevocably involved with, and responsible for, each other." [16] (McLuhan/Fiore 1967, 24) The political condition of the media is also at stake here. The present condition of many democratic governments (not to speak of elusive democracies) has been criticized as post-democratic: for their lack of civic empowerment and the simulation of citizen participation.²⁰¹ We have to describe the intersections and interfaces of as well the political, different societies and cultures in relation to media's technological conditions and possibilities.

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Methodologies and statistical models for social network analysis

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1. Introduction

In this paper, we analyze the application of formal and statistical models to social networks analysis.

Social networks extension can be understood as a part of the global embrace, referred by McLuhan's [1]: 'Today, after more than a century of electric technology, we have extended our central nervous system in a global embrace, abolishing both space and time as far as our planet is concerned'.

Formal and empirical analysis of social networks extensions in the global embrace will be useful and necessary.

2. Models and social networks

The notion of model has played a fundamental role in science and its application can provide ideas and hypotheses relevant to social science research²⁰².

Theoretical models are an abstraction, and are developed with the application of certain known formal properties (eg, probability theory) and not based on the analysis of empirical observations.

A statistical model of a social phenomenon can serve to clarify a theoretical (explanatory function), and also to represent a recurring process in abstract form (Farraró, 1997, pp. 73-101 [2]), enriching the dominant systematic empiricism of the social sciences (Willer, 1996, pp. 319-331 [3]).

Statistics has been used for inference, analysis and summarization of data on social phenomena, but it has been used to a lesser extent on the modeling of social theory. The challenge is to apply statistical formalization to sociological theories and models. The development of the model allows new methodological approaches in social sciences, even if only they are not directly related to observable data.

To illustrate these ideas, we apply properties of probability and information theory to social network and social systems analysis.

202 For example, the application of Markov chains, or organization and games theory.

3. Models in social sciences

Different applications of mathematical models to sociology have been developed²⁰³ (Rapport, 1951, pp. 257-277 [4]; Farraro, 1997, pp. 73-101 [5]; Simon, 1957 [6]). Many of the social scientists involved in these applications, have used elements of the general theories of systems, games theory, and theory of information.

Ludwig von Bertalanffy emphasized the analysis of open systems and nonlinear dynamics as a key in the study of systems (Von Bertalanffy, 1968 [7]; Luhmann, 1991 [8], Coleman, 1960, pp. 1-149 [9]). James Coleman, a renowned American sociological theorist, links the modern idea of rational choice with the older idea of stochastic processes of social contagion (Coleman, 1964 [10]). In general, he suggests relations between social contagion and assumptions of chances of individual change in a short period of time, a procedure known in the mathematics as stochastic processes.

Many of these ideas have applied in the theories of social networks, and in simulations in computer of social phenomena (Hummon, Farraro 1995, pp. 79-87 [11]; Freeman, 1984, pp. 343-360 [12]).

In recent years, theories and software applications (Wasserman, 1994 [13]) have been developed for analysis and graphical visualization of social networks (Freeman, 1984, op. cit.; Hanneman, Riddle, 2008 [14], see also, software Cytoscape²⁰⁴), for the analysis of semantic networks (Izquierdo, Hanneman, 2006 [15]), or analysis of the relationship between ego and alter (i.e. software EGO - NET).

In this regard, specific data processing software for the analysis of social networks have been developed (i.e. UCINET, Hanneman, 2008 [16]).

Also, different kinds of software for representing complex social networks, and plot relations among members, friends, groups (<http://scouta.com>; <http://www.digitalismo.com>) have been developed in the last years.

Software Mathematica has incorporated these contents [18].

Concepts as network density (the number of actual connections on the possible), social distance or geodesic distance, and the number of links that separate an actor from others²⁰⁵ (Hanneman, 1988 [19]) have been developed for this type of analysis. Hanneman²⁰⁶ (1988,

203 A key paper in the latter work, originally published in 1951 in the American Sociological Review, formalized the influential social system theory of Homans (1950 [17]). The Homans book has been a continual source of insights and data for social network analysts, while Simon's paper has been an exemplar for sociologists who formalize theories in terms of differential equations.

204 "Cytoscape is an open source software platform for visualizing complex-networks and integrating these with any type of attribute data. A lot of plugins are available for various kinds of problem domains, including bioinformatics, social network analysis, and semantic web", <http://www.cytoscape.org>.

205 To capture how individuals are embedded in networks, one approach is to examine how far (in terms of social distance) is an actor from others. The distance between two actors is the minimum number of edges that takes to go from one to another. This is also known as the geodesic distance. Those actors who are closer to more others may be able to exert more power than those who are more distant.

206 The amount of information that we need to describe even small social networks can be quite great. Managing these data, and manipulating them so that we can see patterns of social structure can be tedious and complicated. All of the tasks of social network methods are made easier by using tools from mathematics. For the manipulation of network data, and the calculation of indexes describing networks, it is most useful to record information as matrices. For visualizing patterns, graphs are often useful

op. cit) suggests to advance in dynamic analysis in social sciences, with the use of formal languages, and methods of computer-assisted simulation²⁰⁷.

These kind of analysis of network has also become more relevant with Internet, “stimulating connections and forging new links at all levels of organization – grassroots, corporate, institutional, national, global – and a concern that such connectivity may detract from local interaction (Haythornthwaite, 2011 [20])”.

4. Models of social interactions.

Some ideas regarding the application of formalizations and models can be applied to the analysis of social networks.

Concepts developed as a network density (the number of actual connections on the possible), social distance or geodesic distance, and the number of links that separate an actor from others (Hanneman, Riddle, 2005 [21]) can be applied to the analysis of social interaction networks.

Social networks are interactions between nodes, connected with different kind of social interdependency. In networks we can formalize social interaction occurring simultaneously or dynamics of changes in time of these networks. In sociology, interpersonal ties are defined as information-carrying connections between people. These ties could also be potential, usually referred as latent ties (Haythornthwaite, 2005, *op. cit.*).

Also, this kind of conceptualization is useful in understanding globalization. “Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication. The personal and social consequences of any medium - that is, of any extension of ourselves - result from the new scale that is introduced into our affairs by each extension of ourselves, or by any new technology”. Regarding this McLuhan (*op. cit*) concepts, changes in the extension of social networks (and the extension of man) with the new technologies – like Internet -- will have important social consequences.

We can distinguish the properties of the network (collective property), and the properties of individuals or elements (nodes) within it. A particular configuration of a network (collective property), depends on the probability of interaction of a given node (individual property).

Using probability theory, we can calculate some formal characteristics of a network. For simplicity, let's call the model M.

Methodologically, we assume that all nodes in a network N (i.e. *a, b, c, d*) can be classified binary in a dichotomous variable (i.e., node *a* interacts or not with N). Given a theoretical probability to interact, we can calculate a probability of a particular configuration of interactions in N.

In the figures below, nodes are classified according to whether they are in or out of the network at any given time. To simplify, we understand that “to be connected” means being

207 “This book has the inmodest goal of reorienting how many social scientist go about building and working with theory. First, I believe that we would benefit from a shift in substantive focus towards less concern with static and more concern with dynamics. Second, I believe than social scientist's theoretial work would be much advanced by the use of powerful and flexible formal languages for expressing theory, as opposed to the current practice of using either “everyday” language or mathematics. Third, I am advocating to the use of computer – assisted simulation methods as a useful way for social theorist in the social science Hanemann (1988, *op cit*).

connected to the network as a group.

In Figure 1, a network of four nodes is represented by program UCINET (a, b, c, d) that have all the six possible bidirectional connections among them. We call this connection a saturated connection -- it has all the possible interactions --.

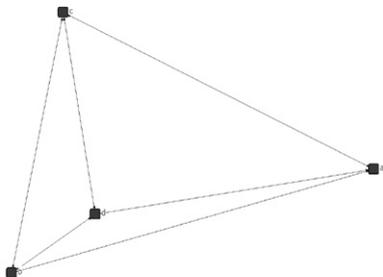


Fig. 4. A network with four nodes with all possible bidirectional connections (UCINET).

There is variable that describes a characteristic of the individual a : the probability of being connected in the network. There is also a variable that describes a network characteristic: the probability of a saturated network occurrence. In this case, we do not analyze the different properties of connections, but of individuals and the networks as a whole (not analyzed the distances between individuals, or the density of nodes, for example²⁰⁸).

If we assume a co-occurrence, the network implies a temporal variable, since the configuration occurs simultaneously.

Suppose to interact or not in a network it is equally probable (0.5, or $1/2$). If each of the four individuals (a, b, c, d) has a probability of $1/2$ to interact with the network, the probability of a saturated connection is equal to $1/16$ (0.0625). If they were 5, the probability that all three interact simultaneously be $1/32$ (0.03125). The probability decreases exponentially. With these assumptions, the probability of a network of 7 simultaneous interactions (similar to Figure 2) is $1/128$, 0.007812.

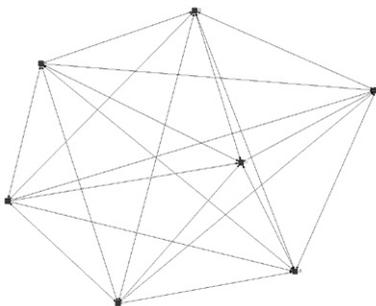


Fig. 5. A network with seven nodes with all possible bidirectional connections (UCINET).

208 If we measure the ties among actors with values (strengths, closeness, probabilities, etc.), density is usually defined as the sum of the values of all ties divided by the number of possible ties.

If we increase the probability of each interaction of the node with network N to 0.9, using binomial distribution, the likelihood of the occurrence of a saturated network of 7 interactions increase to 0.478296²⁰⁹.

The type of models (Model M) is a formalization of this intuitive perception. Intuitively, a coordinated interaction of 1000 people is less likely than coordination between 10. And although in a real situation we can not calculate the individual probability that each individual engaged or not in an interaction, this is always a value between 0 and 1. Keeping the individual probability of constant connection, the greater the number of individuals in the network, the emergence of a saturated connection involves a more unlikely event.

Suppose we have a dichotomic value of connecting to Facebook or not. If, as in M, we suppose a probability of connection, say, $\frac{1}{2}$. We don't actually know this probability, but we know it is a number between 0 and 1. For 500 million users of the social network, we have a probability of $1/2^{500,000,000}$, a very low probability. This kind of modeling shows the difficulties and how strange is social coordination. Also, it shows the fact that we need highly sophisticated social technology for coordination (language, money, and others).

Models of this type of phenomena have been applied mostly to seemingly trivial problems (i.e sociograms). But it is possible to relate social theory with the probability of social interactions, in a similar way as Model M, using these dichotomous variables in the descriptions of significant interactions: language, exchange of goods in a network (money), to produce or not physical harm to the network (moral - law).

Information and probability.

The relation of probability with information seems also very fruitful in theoretical terms. The information is related to probability theory²¹⁰. The definition of quantity of information (I) associated with an event i , is the negative logarithm base 2 of the probability of the event: $I(x_i) = -\log_2 p(x_i)$. The unit of measure, when logarithm base 2 is used, is a bit. As more unlikely phenomenon, has more information associated²¹¹. In model M, for a node probability of $1/2$ in a network of 7 nodes, the associated information of a saturated configuration is 7.

The concept of entropy is also related to the probability and information: if the event is more likely, there is greater entropy. Shannon gave a mathematical definition of this concept (Shannon, 1948: 379-423, 623 - 656 [22]). The concept may be related to irreversible pro-

209 From the statistical point of view, the calculation is analogous to the probability of throwing a coin and having seven times out face (success). The binomial distribution formula:

$$P(7 \text{ successes}) = \frac{7!}{7! \cdot 0!} (0.9)^7$$

$$7! \cdot 0!$$

The result is: $P(7 \text{ successes}) = 0.478296$.

210 The probability measures are also used in information theory. The amount of information transmitted in a response of a choice between two possibilities. With two questions is possible to decide between four options ... Thus, the logarithm base 2 of the possible decisions can be used as a measure of information (this unit is called binary unit or bit).

211 Suppose we have a box containing ten balls, nine white and one black. If we randomly take a ball, to get a black ball completely reduces the uncertainty: we know that each of the balls remaining in the box are white. If we had found a white ball, the reduction of uncertainty is much smaller: we still can not say what will happen if we do another extraction without replacement of the previously drawn ball.

cesses, which occurs in only one direction in the arrow of time: for example, aging, or heat flow. Entropy is a quantity that always increases in an irreversible process (in the reversible process is equal to 0). In some social phenomena, there is a decrease in entropy, in the sense of creating more complex and improbable systems (Oliva, 2004 [23]).

Social sciences are usually adapted to the necessary grasp of probable events, facts of everyday life, with high information and low probability. All these facts are sorted and analyzed by regularities, and relations between variables. But the problem is that history changes its course with basically improbable events. Strange political leaderships, technological change induced by genius (as the invention of the steam engine, the use of electricity or magnetism, invention of the phone, virtual networking), improbable individuals, are very important in historic shifts.

The usual tools of social statistics, such as polls or census, are not intended to capture these strange events. Neither social theories such as functionalism, historical materialism, or structuralism, appear to have theoretical sensitivity to capture them. Usually they are aimed to capture useful regularities of social structure. They are used to analyze social structure reproduction, usually seeking the possibility of undifferentiated application to any historical period, a feat considered a virtue. But focusing on this kind of methodologies in social sciences, they fail to predict and analyze strange and relevant aspects of social life.

Subjective probability. There is also, a subjective perception of probability. That is, the translation into the subjectivity of the actors is an important aspect of the model M. Individuals perceive likelihood of social phenomenon (a empirical frequency distributions can be useful for analyzing this item, for example). The same notion applies to information. A subjectively unlikely event - to visit a faraway place, buying a car - is associated subjectively with high information (anecdotic event).

It is not necessary for this subjective panorama to have accurate estimates of probabilities. For example, we take care of falling, without knowing the equation of gravity acceleration. In a similar way, we could consider that the probability of coordination of actions is something that the individual perceives and organizes its experience in this regard, without calculations.

Also, qualitative approaches are needed, since many of the actions and strategies of individuals are made based on qualitative perceptions of the likelihood of possible scenarios. On the other hand, a quantitative formalization helps us understand the nature of the phenomenon.

The subjective probability is often guided by the actual frequency with which an event is observed. That is, the subjective probability of an event depends on how often a phenomenon occurs in a given context. Flying a plane is a likely event for the pilot, given the frequency with which the event occurs, but not for the passenger. Visitor A, who lives in Latin America, and resident B, are walking on the streets of Beijing. For A, going there is an unlikely event - and therefore with high information -; for B, that is a normal event. Both are doing the same thing in the same place; the difference is the probability of the event (the generation of improbable events is informative, are an important factor of the tourist experience).

5. Examples of application in social and media research.

Some examples of application of these concepts and Model M in social and media research can be mentioned. Power, language, or money, are symbolic media that increase the likelihood of coordinated actions. Laws, morality, religion, are also institutions that make human behavior predictable, reducing contingency.

We understand the importance of media not only as mediators among several levels of social life, but as producers of social life.

Chernilo explains the relation between symbolic media and coordination. "What are the media? What does the theory of generalized symbolic media actually conceptualize? In brief, media are specific forms of social coordination; they are the most constant dynamics of social co-ordination present in modern societies. Money, power, love, truth, and the other media are the way in which societal subsystems, firstly, regulate their internal functioning by contributing to its own differentiation and, secondly, the way to interrelate with each other to produce co-ordinations between subsystems" (Chernilo, 2002, pp. 431–449 [24]).

Language. One of the specificities of human societies is its coordination through language and the generalization of symbols, such as money (Parsons, 1982 [25]). Now imagine that the lines in Figures 1 and 2 correspond to the use of a particular symbol to designate an object. We could understand each line as a binary symbolic code of an object by a word in a language. Use of the word "tree" in this network corresponds to a 1, and the contrary - not using the term "tree" - carries a 0. Surely a spontaneous coordination of the use of a word - which is an arbitrary encoding - for the appointment of an object is very unlikely. At the same time, a word used by a greater number of individuals, it more unlikely that a less widespread word.

Systems theory. A network of interactions may be associated with a system. In the calculation of the probability of a state of the system, the number of elements combined in it is a relevant feature (Luhmann, 1991 [26], Luhmann, Niklas, De Giorgi, Rafaele, 1993 [27]; Bertalanffy, 1982, op. cit), associated to its complexity. The calculation of probabilities of network interactions, would potentially provide an index of complexity of a system or network.

Mass media and history. The events recorded in mass media tend to be unlikely, and with a qualitative important amount of information: a repeated event, and subjectively very likely, is not a news. In general, the history and social media events tend to focus on the unlikely. The historical figures have generally done unlikely actions. For example, prophets perform miracles. Instead, the history of normal individuals is usually a long chain of likely events.

Money. Money can be analyzed as a socially assigned probability of exchange of a product or service: at higher prices, the exchange is less likely. The exchange of an article of high value (an automobile, for example), is less likely than the exchange of daily foods on the market; therefore is an event with more information, and most talked and commented when it occurs. The economic idea of "scarcity" is associated then the probability of exchange of a product; inflation, is a relative change in economic exchanging probabilities.

Conclusion

The basic idea of this paper is that modeling, enables new methodological approaches in social sciences. Statistical models, usually assisted by computer, could be used with great utility in the methodological approaches of the social sciences, just as in many other sciences. Mathematical models have been applied in theories of social networks, usually using computer simulations of social phenomena. The notion of probability, information and entropy can be applied to the modeling and analysis of networks and social interactions.

A statistical model of a social phenomenon may clarify a theory (explanatory function), and also to represent a recurring process in abstract form (Farraro, 1997, *op. cit.*), enriching the dominant systematic empiricism of the social sciences (Willer, 1996 [28]). Formalization helps us understand the nature of the phenomenon.

In social life is necessary to coordinate actions and omissions, increasing or reducing its likelihood. Model M shows, in general, that if there is a greater number of actions or omissions to coordinate in a network N, the less likely is a saturated coordination. Less likely, more information, and less entropy.

While the specific calculation of these probabilities in a real situation is complicated or impossible, the models to simulate social networks and interactions in order to understand them theoretically. In this sense, these models are explanatory, and represent recurring processes abstractly.

In social life, these odds of an event tend to be correlated to subjective perception. Individuals have a qualitative perception - based on factual odds - of the likelihood of the configuration of social events. And the subjective assessment will guide the actual decisions and actions of the actors.

In science, the theory simplifies. In fields like sociology or media studies, where systematic empiricism is a dominant method (Willer, 1996, pp. 319-331 [25]), empirical research never simplifies, because its object is not to apply theory, but to find "findings", and the findings are typical of a particular moment in time and space. Thus, scientific models simplifies, while the systematic empiricism makes the world more complex (Willer, 1996, *op. cit.*).

The development of these models is potentially useful, as they are incorporated into thematic analysis and specific training in disciplines such as sociology or media research. This type of models may improve the understanding of phenomena such as media, language, power, hierarchies, and systems theory.

The development of formal modeling enables new methodological approaches in social sciences. Including modeling, even without a direct reference to empirical observable data, helps to improve the understanding of social phenomena and to increase the relevance of social science.

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From “homo typographicus” to “homo digitalis”

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1. Introduction: Updating McLuhan Galaxy

When Marshall McLuhan wrote “McLuhan Galaxy” *“The Gutenberg Galaxy: The Making of Typographic Man”* it was 1962. The two decades following World War II were a period of increasing expansion of the power of mass media. Television was sneaking in almost all households in the first world, and it seemed it came to stay for evermore.

First the telegraph, then the telephone and the radio, had penetrated into people live to give a real Copernican revolution to human imagery of communications. But television was undoubtedly the most influential and paradigmatic element in the daily lives of men and women of the twentieth century. Television came to combine the functionality of the rest of the media in a single terminal by adding the stimulating presence of images on the move who wrapped the television interface in the aura of quasi-magical window in direct contact with the world. Television has moved to the center of family reunion that had previously occupied the radio, which, long before, was occupied by the tribal bonfire.

Cultural moralists cry out to heaven. No wonder. Cultural moralists had spent years preaching in the desert against the mass media. Some, elitist and conservatives, look to the masses as if it was the embodiment of all degeneration of individual and looked at “mass-man” with suspicion as the most dangerous destructive power against social order (Ortega y Gasset, 2004). Others, in a more progressive way, looked to the masses in an almost paternal way and manage their rage against the Cultural Industry, as the most dangerous member of the capitalist system (Horkheimer and Adorno, 1988), an entity with an alienating function conducted to captivate the masses, which was defenseless against the new multi-sensory flow, the new ecstasy, to which he is subjected.

This was the frame of mind in Western civilization since the thirties, and little or nothing changed in the different intellectual approaches that tackled the analysis of human communication system immersed the media technologies revolution. And then came McLuhan. Marshall McLuhan arranged a strange strategy to escape the stale air of anti-media thinking of cultural moralists: flee the immediate context posed by the global capitalism and mass society. McLuhan looked in the past in order to find the origin of the underlying structures of modern thought where mass media converged. In “The Gutenberg galaxy” focused on an analysis of socio-technological revolutions in the history of Western civilization (printing press) and tried to see what was decisive in the form of linear thinking that it introduced. His reasoning, structured in an apparently unconnected way (or how he himself liked to say, as a mosaic) tried to tackle the issue of human thought, communication and thinking constraints from the origins that shaped it, to the revolutionary changes that transform civilization into

the mass media society that McLuhan knew.

Today, late in the second decade of the 20th century, many are those who see McLuhan as a visionary, like those who criticize the lack of a theoretical device that could turn his theory into a systematic corpus. But something that everyone agrees is in seeing Marshall McLuhan as a thinker who has put on the table suggestive and stimulating ideas even in difficult times, ideas that have allowed us to advance in the pursuit of knowledge, which, at the end, was his most fervent purpose.

Seizing the opportunity that this Congress suppose, we propose the appropriate update of McLuhan thinking mosaic. Of course, we will try to analyze the present situation in McLuhan terms. Considered all we have set out this text as an analytical upgrade of the thinking mosaic that McLuhan used to approach the emergence of techno-social revolutions such as printing (which introduced us into the Gutenberg galaxy) or mass media (which introduced us into Marconi or electric galaxy) to address the analysis of the new digital society. In other words, who could be those of McLuhan, we will address the transition from “homo typographicus” to “homo digitalis”, ie the genesis of the new digital galaxy.

2. The main keys of McLuhan approach: cultural galaxies and “homo” evolution

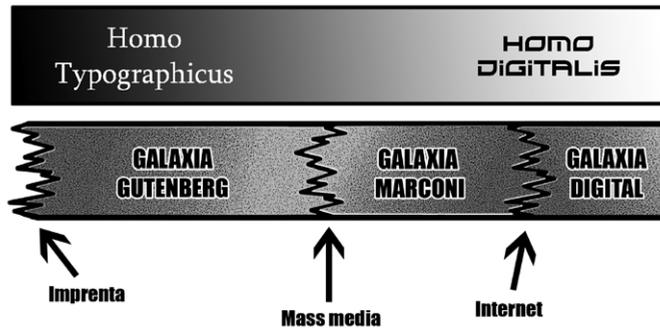
The McLuhan mosaic-reasoning way shows us a double backdrop: on the one hand the approach of cultural systems of thought, which called galaxies and whose transitions are marked by different socio-technological break-ups, on the other hand, we find the considerations about ideal type of man who becomes dominant in each stage, referred to as “homo” (taking, in an ironic way, a classical concept of paleoanthropology).

After the spread of printing, Western civilization entered in the Gutenberg galaxy, characterized by a linear way of thought, within which was born the “homo typographicus”. The printing press and movable type in particular, entail, according to McLuhan, a move that marked milestones in the development of our civilization. Centuries later we enter a new age of technological and social revolutions of the communication systems, it was, of course, the era marked by the rise of mass-media. McLuhan pointed timidly at the emergence of a new galaxy, galaxy Marconi or electronic galaxy, but he never put on that stage, the same emphasis he puted describing Gutenberg Galaxy. The fact that in this new Galaxy, McLuhan did not elaborate description of an “homo” clearly distinct and antithetical of the “homo typographicus” could make us think of the Marconi galaxy as a transition galaxy.

It was an open space of transformation in which humanity kept in essence a linear mode of thought, and the successive technological revolutions (radio, TV, color TV) seemed to move towards the convergence of media into a single unified system. Strictly speaking, time seems to have strengthened these suspicions. Sociologists like Manuel Castells, Zygmunt Bauman and Scott Lash (Castells, 2005, Lash, 2005; Bauman, 2003), among others, have agreed to describe the present stage as a different paradigm essentially characterized by the new techno-social revolution which involved new information technology and communication expansion in the late nineties and early twenty-first century (considering the important role of the Internet). All indications coincide that it was actually in the last decade of the twentieth century when society began to develop a substantial change in the structures of thought significant

enough to build a new “homo”, which we are proud to present as “homo digitalis”.

The following chart shows our idea of the metamorphosis of “homo typographicus” into “homo digitalis” (which is a still incomplete mutation) and the parallel transition of galaxies that have occurred since the invention of printing to the galaxy that probably could be called digital or network Galaxy, essentially characterized by the emergence and rapid expansion of the Internet.



3. Copy techniques as key elements in cultural galaxies configuration

Given the very “galactic” reasoning way of McLuhan and his emphasis on techno-social milestones that initiate the transition from one cultural system to another, the turning points he chose seemed to be based on revolutions that affect the information on two fundamental aspects: on the one hand from the point of view of the power and potentiality of transmission, on the other hand, from the standpoint of repeatability.

In *Apocalittici e integrati*, Umberto Eco, analyzes consumer music meets the problem of mechanical reproducibility of music, a classic case that Benjamin had already tried to explain decades earlier, but at the time of Eco seemed to have reached even greater dimensions:

“The advent of recorded music has changed the conditions of use and music production in the same way that the printing press changed the conditions of reading and literary production in both cases the quantitative change was such as to obtain qualitative changes” (Eco, 2006 : 289)

It seems that art academics themselves agreed to see the reproducibility of art as a turning point, as a paradigm shift. The question we must ask ourselves is: In what sense is improvement of reproducibility techniques are effecting conditions of cultural consumption? The answer seemsto be simple, mechanical reproduction allowed to increase the number of circulating copies of recorded music, photography, movies, etc. And this had a direct impact on public access to these objects of cultural consumption.

But McLuhan said on “The Gutenberg Galaxy” that repeatability techniques had been

introduced by the Romans and had been improved during the Middle Ages (McLuhan, 1993: 12-124). From the affixing of stamps to the coinage, the repeatability has accompanied man since the dawn of civilization. So what is different with the digitization? What is its contribution to the history of the reproductive systems? Does it provide something new or is a mere enhancement of the efficiency of mechanical reproduction? However, the digitalization does lead to the extreme possibilities of reproduction. Mechanical copying was simpler and cheaper than the manual, but the economic effect of cost reduction and increase in speed tends to remain small when it comes to digital copy. Files are copied with total accuracy, and in a short space of time without the need for an expensive industrial complex and full deployment of heavy machinery (and corresponding wage labor). To copy a file, text or video we just need a computer. But being aware of the progress that the digitization has supposed, we could interpret the digital reproducibility as a new step in optimizing an existing process. Is it only a matter of degree? What makes the digital copy so special?

The crux of the matter is that we could not find the key in digital reproduction itself, but in its articulation with the Internet, the new communication system that allows its distribution network, if not outside, at least as an alternative to the traditional distribution monopoly that was maintained until now by the Culture Industry. As noted by Lawrence Lessig, the father of Creative Commons licenses, in his book "Free Culture":

"The Internet makes possible the efficient spread of content. Peer-to-peer (p2p) file sharing is among the most efficient of the efficient technologies the Internet enables. Using distributed intelligence, p2p systems facilitate the easy spread of content in a way unimagined a generation ago." (Lessig, 2004: 35)

Between these two issues, reproduction and dissemination of various cultural texts through the Internet situates Lessig the great conflict of the digital galaxy, the controversial issue of the exclusive property of reproducible goods, the Intellectual Property system:

"The Internet has unleashed an extraordinary possibility for many to participate in the process of building and cultivating a culture that reaches far beyond local boundaries. That power has changed the marketplace for making and cultivating culture generally, and that change in turn threatens established content industries. The Internet is thus to the industries that built and distributed content in the twentieth century what FM radio was to AM radio, or what the truck was to the railroad industry of the nineteenth century: the beginning of the end, or at least a substantial transformation. Digital technologies, tied to the Internet, could produce a vastly more competitive and vibrant market for building and cultivating culture; that market could include a much wider and more diverse range of creators; those creators could produce and distribute a much more vibrant range of creativity;" (Lessig, 2004: 28)

Thus we see that the linkage between digital reproducibility and distributed networks that run through the Internet disrupts the deepest structures of traditional industries. At the same time, open season on to alternative ways of distribution of the different multimedia texts facilitating the contact between artist/producer and they fans. The traditional distribution structure controlled by the Culture Industry is losing their power due to the decline of their profits, but profits seems to be a direct consequence of the gradual disappearance of the value of its intermediation. And it all appears as a derivation of reproductive and communication

revolutions like those that made possible the emergence of cultural industries themselves. Years later, the words of Paul Valéry that Benjamin chose to lead his article about the technical reproducibility of art, seems to remain the same today than they did before the advent of electronic galaxy:

"In all the arts there is a physical component which can no longer be considered or treated as it used to be, which cannot remain unaffected by our modern knowledge and power. For the last twenty years neither matter nor space nor time has been what it was from time immemorial. We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art."
(Valéry quoted at Benjamin 1989)

4 From a lineal thinking to an hipertextual thinking

If, about the manuscript, McLuhan said that "it shapes, at all levels, the medieval literary traditions" (McLuhan, 1993: 134), regarding the press, he highlighted (using *L'apparition du livre* written by Febvre and Martin) the key role that typography had in fixing spelling and grammar of the language as we know them today (McLuhan, 1993: 328-329).

In both cases, we learn again the influence that the writing mode and reproduction of texts has had in shaping the thinking of each historical era. But McLuhan claims that, even for clear structuring effects of our cultural galaxies, few have become aware of these phenomena, and in this respect, the philosophy was "as naive as science in accepting unconsciously the principles and dynamics typography" (McLuhan, 1993: 350).

Any living philosopher would reply to McLuhan's reasoning, objecting that his immersion in the typographic scheme of thinking does not allow him objectify a context in which himself is immersed, and that all this is conditioning its own replica against the performative power of language and typography. But more likely is that McLuhan, who was a practical man, would not fall into the trap. Probably he did not reply with a linearly structured argument, but would actively assert their subversive philosophy and preach by example (which has historically been the most consistent way of preaching) by suggesting the philosopher to open "the Gutenberg galaxy" at a random page. Consider that McLuhan, through its apparent methodological sloppiness, escaped to the principles of linear thinking that were part of "homo typographicus". The performance of the argumentation in "Gutenberg galaxy" is much closer to what we might categorize as "hypertextual thinking" than the typographic tradition of linear thinking. Looking through the eyes of a supposed innocent anthropologist, we may even see in the reflections that make up the mosaic of reasoning, the narrative structure of blog posts from our contemporary digital world.

Let's follow the trail of thought that McLuhan raised regarding the manuscript first and then typography and let's take into consideration how did the hypertext affected the "homo digitalis" as framework of his mind, and what exactly do we mean by the term "intertextual thinking". Castells described the hipertext as a "a new system of organizing information [...]based on horizontal information links". Its origin was the creation by the CERN (Centre Européen pour Recherche Nucleaire de Ginebra) a format that they named HTML (Hypertext Markup Language) "designed in the Internet tradition of flexibility,

so that computers could adapt their specific languages within this shared format, adding this formatting on top of the TCP/IP protocol. They also set up a hypertext transfer protocol (HTTP) to guide communication between web browsers and web servers, and they created a standard address format, the uniform resource locator (URL) which combines information on the application protocol and on the computer address holding the requested information. Here again, URL could relate to a variety of transfer protocols, not just HTTP, thus facilitating general interface". (Castells, 2005: 83)

All these technical details may seem superfluous in the analysis of cultural galaxies, but the Castells have a very good reason to remark them. HTML, HTTP, TCP / IP and URL, are the new movable type of the digital galaxy. Not everyone was raised the importance of movable type in the shaping of Western thought, and McLuhan lay down this issue on the table. The typographic man slipped through the text without asking about the conditions that typography had imposed the production of what he was reading, just as the net-surfer (the "proto-homo digitalis) navigates through the hypertext without questioning in which way the net grid system has changed the way of organization of texts and even their own frame of mind.

But what are the key differences between the linear thinking and the hypertextual thinking? Intertextual connection exist since there exists the quotation, and the quotation was invented even before the invention of typography. Then, what is the substantial change which introduces the hypertext? These are two main distinguishing features. On the one hand, the increase in the degree of interconnection between the texts, we mean, the links have increased quantitatively in a manner sufficient to result in a general qualitative change in the cultural whole galaxy. The galaxy has become a network. Moreover, the issue of space-time has largely been subverted. Intertextual quotation make easier the searching process, accelerates the jumps, allows (in addition to cross-reading) the intertextual reading. In some ways, produces a process of rapprochement of the virtual space of the network, which is just a click away in a instant.

Moreover, and this may be the most important aspect of the emergence of hypertext, it subverts the very system of receiving the information. Typography posed a linear, structured and directive system. The text was meant to be read from beginning to end. That kind of reading in which Eco encompassed from novels to philosophical treatises. Such texts are often read as the Eco mode that referred, not without irony, as "whodunit method", in which:

"The end of the book is the end of the reading experience. Note that the same is true if you read, for example, Descartes' Discourse on Method. The author wants to open the book to the first page to follow a series of issues raised by him, to see how it comes to final conclusions" (Eco, 1996)

Following the emergence of hypertext, other types of narrative begin to take importance. The texts conceived through hypertextual thinking, are more likely to resemble what Eco called "reference works" (Ibid.) as textbooks and encyclopedias, where the absolute directivity in receiving information becomes relative. Consider the current rise of Wikipedia and the way of access to the information it contains. According to Alexa, a company dedicated to measuring Internet audiences, Wikipedia is the eighth most visited website in the world by presenting an average of "daily pageviews per user" greater than 4. Moreover, according to the same rate, 50% of the visits involve more than one pageviewing, which means that half of entries in Wikipedia (2 daily entries of the average 4 per user) include at least an intertextual

leap. The same would happen if we take as an example any newspaper online. Today articles bring us to other articles of the newspaper or even external sources from which the story in question. Something is changing. It is true that the policy has not entirely vanished, would introduce a nuance to that flag most naive techno-optimism. Freedom of movement and reception of information in the hypertext world is not infinite, but if it is true that our degree of freedom has increased tremendously. We have gone from a regime of absolute directivity in receiving information based on the linearity of thought characteristic of “homo typographicus” a semi-direct or direct bounded is allowing much greater scope to the receiver of information. This new way of receiving information even add to the act of reading a certain degree of creativity and the user who draws up the final informational text as a collage, keeping in mind the creative dimension bounded collage that presents itself as an art form.

The most interesting part of this new system of semi-directive reception of information is the new balance of power it generates. Maybe the “homo digitalis” is more free than the “homo typographicus” having gone from a directive system of receiving information to a semi-directive way, but we must also be aware that the new framework includes hypertext in a new system of more subtle powers. The hyperlink is a hypertext link generated, possibly by an interest. Upon arrival to the analysis of structural framework that develops new digital galaxy, one can not stop thinking about the influence that organizations like Google, Yahoo or traditional media (now digital and hypertextualized) have in the shaping process of the new hypertext cosmos. It is pointed out here that, as McLuhan reflected in its analysis of the impact of typography in Western thought, this new transition of the “homo” is not a purely emancipatory way, but a change of conditions, a new galaxy, in short, a new order (perhaps more subtle, but, after all, structured by a power game) and not precisely the anarchical absence of power.

5. Toward a general system of texts

An important consequence of the beginning of the decline of “homo typographicus” has been the blurring of the border lines between the various modes of cultural expression. The typography of the book generated a fetish tyranny as the dominant element of the imagery of the Gutenberg galaxy. Typographic culture simultaneously used its power of absorption and exclusion, so that the cultural dimensions of orality were marginalized. In the case of music, the appearance of musical notation system was the germ of the strict boundary between the “cult” and “popular” (separation that has persisted to our days). In the case of narrative, literary, always under the framework of typography were opposed to the popular expressions both handwritten (as in the case of recipes) and verbal (jokes, proverbs, etc.). The Gutenberg galaxy’s legitimacy regime placed the typing text above all other cultural manifestations, in a dominant position which only began to falter with the advent of mass-media. Castells explains in the first volume of his trilogy:

“The new alphabetic order, while allowing rational discourse, separated written communication from the audiovisual system of symbols and perceptions, so critical for the fully fledged expression of the human mind. By implicitly and explicitly establishing a social hierarchy between literate culture and audiovisual expression, the price paid for the foundation of human practice

in the written discourse was to relegate the world of sounds and images to the backstage of the arts, dealing with the private domain of emotions and with the public world of liturgy.” (Castells, 2005: 400)

And it was precisely the emergence of Marconi or electronic galaxy which began to undermine the hierarchical regime of legitimacy of the texts. Over time, popular music like jazz, rock, pop and folk, have become recognized as “legitimate culture” in the new hierarchy, flamenco is studied in Spanish dance conservatories, knowledge about cinema has become a fundamental part of the cultural capital of the intellectuals and now cinema is being studied in academia as an artistic and cultural object, and the comic has moved to the legitimate status of “graphic novel” and has become an avant-garde art.

For people born from the nineties to this part, this transition may seem natural, almost banal, but we should not go back far in time to remember that cultural moralism that today seems to have incorporated popular culture as their own within a omnivorousness regime, yesterday despised the harder. The consolidation of the graphic novel (subversive hybridization of graphic arts and literature) as a legitimate art form is very recent, remember that it was not until 1992 that a graphic novel (“Maus” by Art Spiegelman) received for the first time a Pulitzer Prize. This was a major milestone in the legitimization of the graphic novel into the world of literature “serious”, which had interesting information on the 80, as recognition of “Watchmen” with a Hugo Award in 1988.

We can say the same about the considerations that the thinkers of the Frankfurt School made on cinema as a means of expression (and even about filmmakers like Chaplin and Marx Brothers, which are today revered across the ideological spectrum). Adorno and Horkheimer (1989), looked with suspicion to the cinema considering it a massive alienation weapon in the service of capitalism. Even Benjamin himself so interested in studying the effects of mechanical reproducibility of art and its consequences in society (Benjamin, 1988), was far from raising the issue as the development of the factual possibility of raising the cultural level of the oppressed masses, and missed in the study of the negative dimension of reproduction, of what was lost in the copy, the aura of art. Much has been said about the elitist face of this cultural moralism, but Castells summed it up brilliantly in his vision of the struggle between the sacred power of books and the audiovisual rise what came in the form of sound film and television:

“Indeed, this tension between noble, alphabetic communication and sensorial, nonreflective communication underlies the intellectuals’ frustration with the influence of television that still dominates the social critique of mass media” (Castells, 2005: 400)

The tendency of hypertext, extending hypertext structure to all the possibilities of multimedia, seems to be the reassembly of all sensory modes in a single system, a general scheme of texts where no textual legitimacy will be dictated by the form (alphabetic or not) but for its specific use value, as well as for the collective (and digital) consideration users to make the content. This is one of the main principles of the philosophy of Web 2.0: to take advantage of the collective intelligence.

6. Digital galaxy: the making of “*homo digitalis*”

When dealing with archetypes, as is the case of galaxies and “homo” McLuhan, we must take into account both its explanatory power and their apparent limitations. Galactic stages that have shaped Western thought have not happened so abruptly or homogeneous. While it is true that the rise of “Homo typographicus” came after the printing-press and was largely a result of it, nobody can say that the day after the first printing of the Gutenberg Bible Europe was had plunged into the typographic way of thinking. The transitions are slow and do not affect all social strata equally, so that still exist in the world enormous amounts of illiterate population which supports the day to day on the sound culture and have never seen the glittering procession of the Gutenberg galaxy...

Even not now the “homo digitalis” is a finished reality. For two main reasons: first, because not everybody (even in the West civilization) have been immersed in the digital galaxy²¹², secondly because the new galaxy is still forming. Everything has changed a lot during the past two decades. ADSL, Google, free software and copyleft philosophy, digital journalism, the blogosphere, the microblogging, p2p sharing networks, streaming, instant messaging, social networking, Internet connectivity to mobile devices, Web 2.0 ... It seems like every season offers us a new technological revolution in miniature that is to restructure our frame of mind. Liquidity, which promulgated style Bauman seems to be the trend in the digital galaxy and continually changing one of the principles that underpin the framework of thinking of “homo digitalis.”

Finally, let review the elements of the new galaxy that will lead to the synthesis of the new “homo digitalis”:

1. Hypertextual Thinking: Facing the linear thinking that shaped the textual production of “homo typographicus reduces the directivity in receiving information.
2. Increasing complexity: a growing number of interconnections between different multimedia texts.
3. Use of collective intelligence.
4. Optimization of reproducibility and consolidation of the Internet as a paradigmatic system of transferring information in the digital galaxy.
5. Completing the process of relativization of space-time that first began with the telegraph and continued with the mass-media.
6. The multimedia puts an end to the conflicts related to the preponderance of sensory systems. All the senses are merged in the media and this reconciliation allows the integration of all cultural texts (typographic, audiovisual, graphics, etc..) in a general system of texts. The book-fetish begins to lose its dominant status and began a process of legitimation of the culture in the margins that characterize the new galaxy and the “homo” that is living in it.

As last, but necessary reflection, it is necessary to emphasize the importance of education systems to adapt to new ways of thinking of the digital galaxy. The State must demonstrate

²¹² According to the Survey on Equipment and Use of Information and Communication Technologies in Households conducted by the INE in 2010 (INE, 2010), the number of Spanish households have access to the Internet reached 57.4%. Although the report Spain 2010 Orange Foundation, it is estimated that the percentage of world population with access to the network is still below 27%. (Fundación Orange, 2010)

commitment to promote education in the “practical reason” of the digital age. At school, we must stop to contemplate computing as a discipline in itself and implement its practical use in each of the disciplines. It seems somewhat obvious in light of the analysis of Western cultural drift in the last two decades, but it is equally unquestionable that the objective has not yet been achieved. Any revolution that profoundly changed the course of human thought will lead to a new regime of inequality in the possession of cultural capital and practical knowledge.

One of the functions of the State is not to let the private daily live the domain of the techniques that manage the life of the digital galaxy as it is also fighting for equal access to new technologies trying to avoid creating a gap based on the different levels of digital skills. While the new digital galaxy is not in absolute terms a step towards human emancipation, it is nonetheless necessary to enhance the immense possibilities that digitalism bring us in order to improve the welfare of humanity and the democratization of access to knowledge. The digital galaxy is not the end of History nor the advent of a more just world, but it MAY be a more just one and “homo digitalis” could be a happier “homo” and be aware of this is the first step to achieve it.

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New Media and New Messages

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Introduction

This paper comes from our research about social uses of communication and information technologies and the various ways we create knowledge by means of these technologies.²¹³ We began studying communication processes that help to create virtual interaction environments. In this research project named *Digital Communication in Education: ways of knowing using technologies*, we examined different e-learning platforms and we interviewed experts related to the design of these platforms. In the next research project- in which we are still working- and as a result of previous findings we went into the topic of digital tools usage (weblogs, microblogs, wikis, social networks, mobiles) which are more available from the emergence of web 2.0.

Each tool men created influenced the way they understood their world and, consequently, themselves. As Weizenbaum [1] says, printing changed the way men perceived the world even for millions of people who never saw a book. In the XV century, all kinds of ships and other artifacts, their myths and legends, influenced the imaginary of those people who stayed inland as well as of those who went sailing. Tools, devices pass down from hand to hand, from body to body; they foster common uses and turn into collective memory messengers. Then, tools can be considered as perceiving/knowing/sense making/meeting machines. They function at different levels: some of them extend the boundaries and transform the nature of our perceptions –such as telescopes, microscopes, telephones, cameras, videocameras, and so on. Other machines, specially change our relation with space and time, for example, cars, planes, clocks, television and computers with internet connection. Finally, many artifacts offer us models by means of which we can understand complex situations by using metaphors.

Different cognitive tools – systems of communication, writing, recording and reproducing pieces of information – together with specific institutional and social forms, shape particular cognitive ecologies. Let's take an example. In order to effectively solve the problem of remembering and recovering thoughts, primary orality relies on mnemonic resources. Writing separates knowledge from the person who knows by promoting abstract thinking and objectifying it in different media -papyrus, codex, book, and so forth.

213 We have published many articles about this topic: "El hombre y la máquina: nuevas prácticas profesionales", *Revista Telos. Cuadernos de comunicación, tecnología y sociedad* N° 52, España (2002); "Tecnologías digitales: los mundos posibles..." en *De Signis n°5 Corpus digitalis. Semióticas del mundo digital.*, Barcelona (2004); "La comunicación digital: nuevos ambientes de interacción en la formación universitaria.", en *Revista Razón y Palabra* N 63, editada por el Proyecto Internet del ITESM Campus Estado de México, disponible en <http://www.razonypalabra.org.mx/n63/scomba.html> (2008); "En tiempos del lenguaje digital.", en *Diario Página 12*, Buenos Aires (2009); "Comenzamos a escribir como hablamos?", en *Diario La Capital* de Rosario, 2010. También disponible en: http://www.lacapital.com.ar/contenidos/2010/11/26/noticia_0027.html

Walter Ong [2] suggests that the growth of electronic communication makes us come into a secondary orality age. The TV, the radio and, nowadays, social networks are similar to oral cultures because they strengthen the community sense. And McLuhan [3] suggests that because of its action in extending our central nervous system, electronic technology seems to favor the inclusive and participational spoken word over the specialist written word of alphabetic cultures. However, nowadays, writing, texts we create are much more like oral language. For example, emoticons are visual representations that take us back to the ancient hieroglyphic writing. This type of writing and the Chinese ideograms, according to McLuhan [3] perspective, are culturally richer forms of writing that offered men no means of sudden transfer from the magically discontinuous and traditional world of the tribal word into the cool and uniform visual medium. Multimedia language, such as the use of photos, music and videos created by users also reinforce a more complex relation between speech and writing that takes place on many different screens. As McLuhan points out, *the medium is the message* means, in terms of the electronic age, that a totally new environment has been created.

Nowadays, an increasing part of knowledge is created and distributed by means of interactive simulations as a result of information and communication technologies use. The kind of cognitive tools/intellectual technologies that prevail over a particular cognitive ecology encourages different ways of knowing –such as myth, theory, simulation and so on- with its own style, evaluation criteria and values.

The introduction of new tools/devices always puts some apparently stable portion of a world at risk and nobody is capable of predicting whatever thing will come up instead.

Speed and scale

In his essay named *The Post-Gutenberg Galaxy: the Fourth Revolution of Knowledge Production Media*, Harnad (1992) says that among media which have shaped the way we communicate each other, he only considers words, writing and printing as revolutionary technologies because they are the only ones that had a significant effect on the way we think. And, consequently, these three media had a great influence on the ways we express thoughts and, even more, on what we may think. The remaining technological innovations –phones, teleprinters, faxes- only represented quantitative refinements of media created by orality, writing and printing just till now when many-to-many communication is about to cause the fourth cognitive revolution.

Two factors that mediate qualitative effects are speed and scale. Words reduced the speed of thoughts, which were even more reduced by handwriting. However, with the introduction of typewriting machines –at first they were mechanical, then electrical and finally electronic- and, subsequently, word processors, we returned to a tempo that is similar to speech.

Nowadays, there is not only a change in speed but also in scale. Information seems to be multiplying at a rate never seen before and, as Susan Blackmore [4] says, this is possible thanks to the process of copying which is promoted by the logic of digital communication. Of course it is not new information, but if the copies vary (which they will) and if not all variants survive to be copied again, then we have the complete three-step process of natural selection. From here novel designs and truly new information emerge. None of this can happen without copying.

Today, contents we published in internet act as real memes, that is, a kind of information

that is copied from user to user. The term *meme* was coined by Richard Dawkins, Professor of the Public Understanding of Science at Oxford University, in 1976.²¹⁴ He gave some examples of memes: tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches. Other examples may be habits, skills, songs, stories that pass on by means of imitation and other processes different disciplines are trying to explain.

Memes, like genes, are replicators; a kind of information that is being copied with variation and selection. We can clearly see this phenomenon, coming from biology as well as culture, in our daily practices when we use social networks.

Computers handle huge quantities of information with extraordinarily high-fidelity capacity of copying and storage. Most variation and selection is still done by human beings, but this is changing. There are examples of computer programs recombining old texts to create new essays, translating texts to create new versions. This is a radically new kind of copying. This copying is quite different from the way humans copy memes. The information itself is also different, consisting of digital information stored and processed by machines. This, according to Blackmore, signals the emergence of a third replicator, the *temes* –the first one being the gene and the second one, the meme.

The *temes*, short for technological memes, are digital information stored, copied, varied and selected by machines. Humans like to think we are the designers, creators and controllers of this newly emerging world but really the new machines are storing, copying and selecting digital information so as to generate new information we humans are using in everyday life.

We can clearly talk about a change in scale and speed. As McLuhan describes it, “the message of any medium or technology is the change of scale or pace or pattern that it introduces into human affairs.” (1964, p. 24) And the meaning of *the medium is the message* is that “the personal and social consequences of any medium –that is, of any extension of ourselves- result from the new scale that is introduced into our affairs by each extension of ourselves, or by any technology... The railway did not introduce movement or transportation or wheel or road into human society, but it accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of works and leisure.” (1964, p. 23-24)

Communities Spread New Types of Contents

Henry Jenkins [5] explains that “metaphors of *viral media* and *memes* emerged during a period of transition in the relationship between consumers and producers: first, this terminology reflected a shift away from the *push-based model* of the broadcast era towards the *pull-based model* of the early internet; second, the terminology maintained use value as we moved from an era of personalized media towards the increasingly communal practices associated with the rise of social networks and the emergence of what industry guru Tim O’Reilly (2005) identified as the *architecture of participation*.”

We are actually in the presence of a new form of communication coined by Manuel Castells [6] as *mass-self communication*. It is mass communication because it potentially reaches a

214 *The Selfish Gene* was the name of the book where Dawkins coins the term meme for a unit of human cultural evolution analogous to the gene

global audience through the p2p networks, Internet connection and social networks. But the word audience, perhaps, does not help to describe the kind of process that is taking place in the new environment any more.

Similarly, Shirky [7] focuses his attention on the shift from the one-to-many pattern of mass-communication to the many-to-many pattern that takes place in blogs, microblogs and social networks; and on the type of contents being spread through the different virtual spaces.

Shirky says "bloggers with a dozen readers don't have a small audience: they don't have an audience at all, they just have friends...It's easy to see why the audience for most user-generated content is so small... And it's easy to deride this sort of thing as self-absorbed publishing. Why would anyone put such drivel out in public? It's simple. They're not talking to you." (p.89)

An audience is not just a big community; and a community is not a small audience either because it has a social density that audiences lack. Bloggers and social network users operate in small groups as part of a community. Their conversations - life-gossip, little updates, thinking out loud- are now held in the same medium as material professionally produced by journalists or cultural editors. This is totally new and sometimes leads to misunderstand the actual forms of communication. We are unused to self media and mass media being mixed together, so we tend to think that everyone is now broadcasting. And this is not the case. Most user-generated content does not mean it is created for general consumption, just as a phone call between you and a relative is not considered "family generated content." (Shirky, p. 86)

At this point, let's come back to the question of how and why this enormous quantity of media contents created by users circulate at the present time. We think that the metaphor of memes contributes to explain this phenomenon that is possible because digital communication allows an easy distribution of user-generated contents that are produced in new ways.

Remixing is an important practice associated with many successful online memes. Remixing includes "...modifying, bricolaging, splicing, reordering, superimposing, etc., original and other images, sounds, films, music, talk, and so on." [8]

In his book named *Remix*, Lawrence Lessig (2008), the man behind the concept of free culture, points out that knowledge and manipulation of multi-media technologies is the current generation's form of literacy. At present, information and other symbolic products are no longer provided to us only by a professional source, the content industry. Digital technologies provide the tools for democratizing production. In so doing, they change the relationship between the producer and the consumer redefining the dynamics of popular culture.

Shirky refers to the same process as mass amateurization as one no longer has to be a professional publisher to publish. That is to say, a set of expressive capabilities moves from a group of professionals to become embedded within society itself, ubiquitously, available to many people who propose and explore new models of communication and coordination without needing to get anyone's permission first.

Intensive user participation in social networks brings the problem of filtering contents, but the answer as well. Online communities filter out content they think has little relevance to their community and focus their attention on material with special value in the new context. "Filter-then-publish, whatever its advantages, rested on a scarcity of media that is a thing of the past. The expansion of social media means that the only working system is publish-then-filter." (Shirky, p. 97)

With the growing use of social networks and the huge amount of ever updating contents we are returning to some aspects of the broadcasting's push-model but now users are the ones who circulate contents within their own communities.

Sherry Turkle [9] brings us a psychological based analyzes of the reasons promoting so much users participation. She speaks of a new state of the self, a tethered self. "We are tethered to our 'always-on/ always-on-us' communication devices and the people and things we reach through them: people, web pages, voice-mail, games, artificial intelligence... The self, now attached to its devices, occupies a liminal space between the physical real and its lives on the screen (Turner, 1969). It participates in both realms at the same time."

She considers that tethering technologies are intimate technologies –for example, mobiles and social networks- that become a means to receive validation, a kind of *check in*. At the moment of having a thought or a feeling one *can have it/may need to have it* validated trough the spread of the new type of emotional contents in different networks. "The validation (of a feeling already felt) and enabling (of a feeling that cannot be felt without outside validation) are becoming commonplace..." (Turkle, p.17)

The intimate connection to our devices provides a kind of social and psychological GPS for tethered selves, as Turkle metaphorically describes it.

Culture revisited: new media user practices

At present, web writing is becoming more and more similar to speech. Books are no longer the dominant medium for texts which are now spread on different screens. Unlike paper, users now find a new kind of more plastic and malleable symbol: texts, images and icons that were designed to be manipulated. Electronic screens become a *reading/making machine*, a place where possible symbols emerge from the selection of a particular user.

Secondary orality means not only the existence of a new printing based oral culture but mainly the transformation of writing in a kind of oral culture. Text messages represent a new form of writing, a kind of speechwriting that is taking us back to ancient times. Similarly, cuneiform writing has simple and sound phonological and graphological rules. Complexity, irregularity and irrelevance are removed. We are now writing from and for orality. We can find another example in emoticons which are visual representations that take us back to the ancient hieroglyphic writing. Literal representation is radically changing text graphological abstraction.

Different types of materials and the space available for writing are important factors influencing ways of communicating ideas. Twitter is a good example of a limited space –as the old clay tablets- but hipertextual language characteristic of digital communication expands it as never before. Hypertext layer structure allows users/readers to take many routes, with different depth levels.

As writing changes, so does reading. We now read the same way we talk, with greater impatience. New books need hyperlinks as they are designed to be read on computers –as well as many other devices- and on mobiles. We can think of books as online oral activity records.

Today, written words are more and more similar to speech. Secondary orality may probably be the new literacy for a world where continuous partial attention becomes and advantage in the new environment characterized by multitasking.

The change in new media language - in favour of multi-media language- also means a change in our relationship with different contents. We can consider the way users get engaged with contents we read, produce, transform, upload or download from internet as a process which takes place across different platforms, spaces and interwoven texts. This engage-

ment is shown as the set of users's attitudes, activities and desires related to those contents. Just an example of this phenomenon is the consumption of other related goods and contents or user participation in activities and interactions such as videogames, forums and blogs from a given series.

Ivan D. Askwith [9] analyzes how new technologies shift control over the television viewing experience from network programmers into the hands of media consumers –what he calls TV 2.0- and describes five logics that help us to understand the type of user engagement with contents now spread on different screens.

1. **The Logic of Entertainment (*We Like To Watch*)** The pleasure of being entertained is one of the main motives driving media consumption –videos, literature, music, etc.
2. **The Logic of Social Connection (*Did You See That?*)** Consumption of cultural goods provides viewers with a basis for conversation and social interaction and helps to create a sense of *belonging*. Today conversation expands through social networks, blogs and the many spaces for communities in internet.
3. **The Logic of Mastery (*Everyone's an Expert*)** Mastery describes a mode of engagement that satisfies the viewer's intellectual desire to master complexities, interpret nuances, and solve the challenges that different contents present. It may consist of predicting how a narrative sequence will be resolved, guessing a character's hidden intentions or recognizing opaque references. Pleasure is often associated with games: the satisfaction of overcoming a challenge. TV series with many seasons display numerous interwoven plots and very complex characters which require our continuous attention, going far beyond the standard 90 minutes of broadcasting TV.
4. **The Logic of Immersion (*Being There*)** Immersion describes the sensation of being surrounded by a completely other reality that takes over all of our attention, our whole perceptual apparatus. Immersion may be textual, as it occurs with fictional worlds offered by films and series: games, forums, comics, etc. New media technologies allow creators to develop rich, immersive worlds that dominate the user's entire perceptual apparatus. However, immersion can also be extratextual which reflects the user's desire to experience a show's production process, and to be intimately familiar with the people, places, practices and details that are generally available only to a small group of individuals who participate in the show's production. This type of viewers also demonstrate a strong desire to interact with, and be acknowledged by, a program's "celebrities." This is the case of many users following famous people on Twitter, for example.
5. **The Logic of Identification (*We Are What We Watch*)** Identification describes the range of ways in which engagement with different contents may both help viewers to formulate and/or reaffirm their personal identities while expressing them to others. Each time we share contents and opinions in internet we are showing our choices within a particular community.

Understanding media again

The Web has really created a new ecosystem. As internet reprogrammes our cognitive and social practices, new questions arise. For example, there seems to be a switch from *Why publish this?* to *Why not?*

Understanding of communication technologies leads us to comprehend men and their practices. Tools have an important psychological effect because they tell us that we can remake ourselves. As McLuhan says "in this electric age –we would say digital age- we see ourselves being translated more and more into the form of information moving toward the technological extension of consciousness...We mean that we can translate more and more of ourselves into other forms of expression that exceed ourselves." (p. 64) Let's think, for example, about our collective intelligence spread in a large array of virtual communities. However, McLuhan points out a difference between these technologies and mechanical ones. "Previous technologies were partial and fragmentary, and the electric is total and inclusive. An external consensus or conscience is now as necessary as private consciousness. With the new media, however, it is also possible to store and translate everything; and, as for speed, that is no problem." (p.65)

Finally, what we are trying to understand is how men, together with the machines we create, remake ourselves and, at the same time, recreate ways of being together and, therefore, ways of doing and being in the world.

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New Media Technologies For the Integration of Post Migrant Youth in Urban Italy

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Abstract. The aim of this paper is to present the first results of an ongoing research on the role that new media technologies could play in enhancing the integration of post-migrant youth in urban Italy. The research has involved both formal (lower secondary schools) and non formal educative contexts (intercultural and youth-centers), adopting a multi-method approach developed throughout the three main parts from which the study is composed. The outcomes acquired by questionnaire forms, focus group technique and interviews seem to highlight the positive influence that ICT could have in the social and school integration of young people from migrant families.

Key words: post-migrant youth - social and school integration - new media technologies – educative contexts

1 Introduction

"It helps me survive" (J., 16-years old)²¹⁵

The quotation points up the powerful role that new media technologies could have in underpinning the integration of post-migrant youth. In-fact, the subject of that cite is "Internet" and it was expressed by a girl immigrant from the former Soviet Union to Israel.

It has been decided to report that thought because it represents the starting point from which the present research has begun. Actually, after having read several international examples in which ICT play a role in facilitating the integration of migrant adults (European Commission, 2006; Borkert, Cingolani, Premazzi, 2009; Niessen, Huddleston, 2010, Redecker, Haché, Centeno, 2010), it was decided to focus the attention on the integration of children from migrant families. Studying the specific European research literature (Mehra, Bishop, 2004; Mallapragada, 2006; de Block, Buckingham, 2007 D'Haenens, Koeman, Sayes, 2007; Diminescu, 2008; Everett, 2008; Elias, Lemish, 2009, Buckingham, Willet, 2009) the focus was specifically addressed in examining if the new media technologies play the same role also in Italy.

Therefore, the aim of the present work is to present the first results of an ongoing research on the role that new media technologies could play in enhancing the social and school integration of 9-12 years old post-migrants. The project started actively in May 2010 and it is still in progress.

215 This quotation has been reported on Elias, Lemish, 2009, pag. 549.

The research has involved both formal and non formal contexts, adopting a multi-method approach developed throughout the three main parts from which the study is composed. In the first part of the paper, it has been described the upshot of a quali-quantitative research done in two urban schools in the North-East part of Italy in order to understand the media usage of post-migrant pupils enrolled in those schools. Furthermore, in the second part of the paper, it has been reported the analysis of several interviews made to Italian educators, with the purpose to understand if ICT play a role on educational activities developed in Italian youth-centers. At the end of the paper, it has been explained a variety of examples in which ICT were utilized in different educative contexts in order to verify the hypothesis of the study

2. Theoretical framework and state of art

The present research has fixed its base on the current situation in which it is everyday clearer the relationship raised up by Castell "between technology and society" (1999, p. 45). This proposal takes into consideration every field of the private and public sphere (political, financial, social, educative, etc.) that is related to the others thanks to the "glue potential" of the new media technologies. Deeping more these kind of connections, it is possible raise up the link between these new tools and immigration, a link even more significant in the contemporary "society of flows" (p. 57.). In this McLuhan "global village" (1998), Internet plays a crucial role because it represents one of the most important elements that has contributed in making the village *global*, or in other words *glocal*²¹⁶. In this new *scenario*, Internet activities have another important consequence: the "digitalization" of the migrants. As Diminescu explains, "migrants are the main actors of a culture of bonds", that [...] "became visible and highly dynamic once migrants began massively to use modern information and communication technologies" (2008, p. 565). Currently, in-fact, there are not just *connected migrants* (*ibidem*) but, using a Prensky's quotation, they are ever more *digital natives* (2001). In these last few years, there are several researches (Prensky, 2001; Livingstone, 2002; Buckingham, Willet, 2006; Rivoltella, 2006; Mantovani, Ferri, 2008; Buckingham, Willet, 2009) that reveal the constant increase of the usage of new media technologies by youth. Obviously, in the sample of those studies they have been enrolled also post migrant boys and girls who use Internet with the same frequency, or even more, than their "natives" friends.

Actually, according to Elias and Lemish (2009), new media technologies "do provide young immigrants with various resources needed for adaptation, since they serve as agents of socialization, an emotional shelter, a substitute for communicating with local peers, a tool for inter-generational cultural transmission and a site for exploring various aspects of new identity formation" (p. 534).

Therefore, for the same authors, it is possible to assume that "the Internet tends to replace the traditional media in the process of immigrants cultural adaptation and social integration" (p. 535). This statement seem to reinforce the role that new media technologies have in helping the integration of post-migrant youth in different European Countries. Furthermore, the results of

216 Nowadays, this term has been preferred by different scholars maybe because it could allow to understand better the tie that involves every sector of the society, in which they are included both the global and the local dimensions.

the mentioned European studies let the author to postulate the research hypothesis: examining if digital technologies play the same important function in educative contexts in urban Italy²¹⁷.

3. Contextual framework

In the present work contextualization is central because it underlines the importance of considering every setting as a specific socio-cultural *milieu* that could shape, in this research, how and why technologies could be used for integration. This is the reason why it is not possible generalize the outcomes of the study: it is not proper to consider a context like the other and to generalize the numerous ethnicities present in Italy²¹⁸ and their media usage.

In line with this thought, they have been chosen contexts located in Italy, especially in the Friuli Venezia Giulia region²¹⁹ (where the writer lives). In these places, specific data in this field of study is lacking and which should give relevant reason to begin filling the gap. Furthermore, selecting known contexts could be easier deep the outcomes and understand them considering the specific reality in which they has been acquired. Still, they have been preferred educative contexts because it is been supposed that they are the places in which the children spend a lot of their time and, consequently, in which their integration could or not could be built. In add, they have been chosen both formal and non formal settings because the relationship between school and extra school activities is significant in order to strengthen the integration of these youth²²⁰. Moreover, they have been chosen settings lo-

217 In order to achieve this aim it is necessary to take in consideration different sub-theme areas:

1) *the increase of the post-migrant boys and girls and the consequences of this incidence on the school system* (Fravega, Queirola Palmas, 2003; Bosisio, Colombo, Leonini, Rebughini, 2005; Queirola Palmas, 2006; MPI, 2007; Zoletto, 2007; Favaro, Papa, 2009; Della Zuanna, Farina, Strozza, 2009; MPI, 2009; MPI, 2010b, Caritas, 2010).

2) *the enlargement of the digital technologies usage by adolescents* (Prensky, 2001; Livingstone, 2002; Rivoltella, 2006a; Buckingham, 2006; Buckingham, Willet, 2006; Buckingham, Willet, 2009; Barone, 2009; Carlsson, 2010).

3) *the support that ICT could give in the media education sector* (McLuhan, 1998; Maragliano, Martini, Penge, 1999; Trovato, 2005; Rivoltella, 2006b; Buckingham, 2006; Ardizzone, Rivoltella, 2008; Barone, 2009).

4) *the relationship between new media and intercultural dimension* (Tosolini, Trovato, 2001; Mehra, Bishop, 2004; Mallapragada, 2006; Altin, Zoletto, 2007; Boni, 2007; D'Haenens, Koeman, Sayes, 2007; Vittadini, 2007; Elias, Lemish, 2009, Bonfandelli, H., Bucher, Piga, 2007; Buckingham, Willet, 2009).

218 In 2010, in Italy there were 60.340.328 inhabitants and 7,5% of them (4.563.000) having migrant backgrounds (7,45% more than the 2009). The "foreigners" persons under age were 932.675 and 572.720 of them born in Italy (Rapporto Caritas Migrantes, 2010).

219 Region located in the North East part of Italy. At the end of the 2009, in Friuli Venezia Giulia there were 1.237.050 inhabitants, 8,2% of them (100.849) "foreigners" (6,2% more than the 2008) (Regione Autonoma Friuli Venezia Giulia, 2010, p. 39). In the scholastic year 2008-2009, in this region the students from migrant families were: 10,7% in the kindergartens, 10,6% in the primary schools, 11,3% in the lower secondary schools and 7,6% in the upper secondary schools (MPIb, 2010).

220 In Italy there are manifold "definitions" to identify post-migrants: foreigners, second generations, pupils from migrant families, immigrants (Queirola Palmas, 2006), generation 1,5, the almost adapted, chameleon youth, new Italians (Della Zuanna, Farina, Strozza, 2009). Unfortunately, in this work it is not possible to dig deeper the meaning of each term. As a personal choice, the favourite expression is *new Italian boys and*

cated in districts in which there is a medium-high concentration of immigrants and in which there are been done activities with new media technologies. Finally, they have been selected different locations and types of contexts (different lower secondary schools; intercultural – youth-centers) in order to acquire an assorted range of findings, in according to the introduction of this paragraph. For all these reasons, different kinds of educative contexts have been analyzed in this research.

In particularly, the specific contexts taken in consideration in the first part of the project are included in the formal education. They are the following:

- seven first grade classes of students of one public lower secondary school located approximately in the centre of Udine²²¹ (“Alessandro Manzoni” school);
- six first grade classes of another public lower secondary school (“Via Petrarca” school);
- four of these groups of students attend lessons in a building not so distant of the centre of Udine (“Via Petrarca- Ex-Valussi” school), the others two in a structure placed in a different area of the same city (“Via Petrarca – Bellavitis” school);
- In the second part of the research, the attention has been especially focused on the non formal sector. The centers involved in this phase are:
- two youth centers sited in the surrounding areas of Udine (respectively, “Punto di Incontro Giovani (P.I.G)” and “Il Poliedro”);
- three intercultural centers located in three different Italian cities (“Centro COME, Milan; CD/LEI, Bologna; Centro Millevoci, Trento)²²².

4. Methodology, sample and research plan

The multi-method approach is been preferred to a mono-oriented research methodology, because it allows to the author to consider the topic of the study from different point of views and, consequently, to achieve more complete upshots.

Furthermore, the multi-method approach has been chosen in almost the research literature having the same subject. This decision may perhaps could be explained saying that to describe the process of integration the statistical data are not sufficient: it necessary to add thoughts, opinion, feelings of the people involved in it.

For these reasons, it has been used a quali-quantitative research developed through different techniques.

In the first part of the research (started at the beginning of May 2010) a questionnaire and a focus group were prepared in order to understand the media usage of the children from migrant families. Both these techniques were adopted in two lower secondary schools present in Udine.

girls because it includes the considerations about the new international setting explained above. In-fact, they arrived (or they born) in Italy when they was very young and they lived their socialization in this nation: for this reason they should have the right to be considered Italians. At the same time, they have a new element represented by their different origin (or their parents' origin) that provide them a wider cultural belongings.

221 The decision to extend the research outside the Friuli Venezia Giulia's borders has been taken in order to acquired information related to this specific kind of centers that lack in this Region.

222

At the moment, this research had involved two thousand and fifteen students²²³ of the first grade of the lower secondary school.

In the present research it was prepared an anonymous semi-structured questionnaire, with the purpose to combine quantitative findings with qualitative information.

The questioning route focus group²²⁴ (June 2010) has been prepared in order to underpin the data acquired in the questionnaire. It has been done only with the most significant part²²⁵ of the sample: thirty three students in attendance in two different groups of students.

In the second part of the research (July 2010 - March 2011) they have been preferred different techniques, like observation-in-context and semi-structured interviews, with the intention to understand how new media technologies are used in educative contexts. The observation-in-context was not structured: it was useful to explore how ICT were used in two local youth centers and, consequently, to guess if they could be considered efficient means to enhance the integration of post-migrants.

The semi-structured interview were addressed via e-mail to several educators employed in three intercultural centers in order to verify the previous information in other similar Italian contexts.

With the aim of corroborate the data collected before, there were done meetings with:

- the educative operator of P.I.G. youth center;
- two teachers of the primary school in which the questionnaire was done;
- the librarian of the village in which is located the primary school;

In the third part of the project (February 2011 –in progress) it has been decided to turn into practice the theories and the suggestions collected before. This is the reason why they have been reported examples of a concrete use of ICT both in non formal and formal contexts.

In the last part of the research (September 2011) it is going to understand if all the theories and the practices cited above could have a sense for the addressees of this study: the post-migrant youth. In line with this thought, it has been already planned to ask to the boys and the girls enrolled in the project their thoughts and their suggestions concerning the possibility to use ICT for their integration.

4.1 Expected outcomes

To achieve the hypothesis of the study the final outcomes should be the following:

223 One hundred and five were females and one hundred and ten were males. One hundred and fifty were “natives” and the rest, sixty five youths, were considered for the Italian law “not Italians”. In Italy, in fact, it is in force the *jus sanguine* criteria.

224 The “questioning route” focus group has been considered more suitable in comparison to a “topic guide” model because it allows to deep-in the previous outcomes in a controlled way. This technique included five main questions.

225 The most relevant part of the sample was composed by students in attendance in two classes in which the number of children from migrant families was the highest. They were fifteen girls and eighteen boys; thirteen were “natives” and twenty had immigrant backgrounds.

1. analysis of the new technologies use by post-migrant boys and girls;
2. description of practices in which digital technologies are used as tools of integration in different educative contexts;
3. report on the suggestions gave by post migrant youth concerning the usage of new media technologies as a tool for their integration.

5. First outcomes and discussion

5.1 Figures on the new media technologies usage by post-migrant boys and girls

In order to verify if the research hypothesis is right, it is time to explain the first findings of the study, starting with the data concerning the favourite media²²⁶ and continuing with the statistics on the Internet usage of the lower secondary school pupils²²⁷.

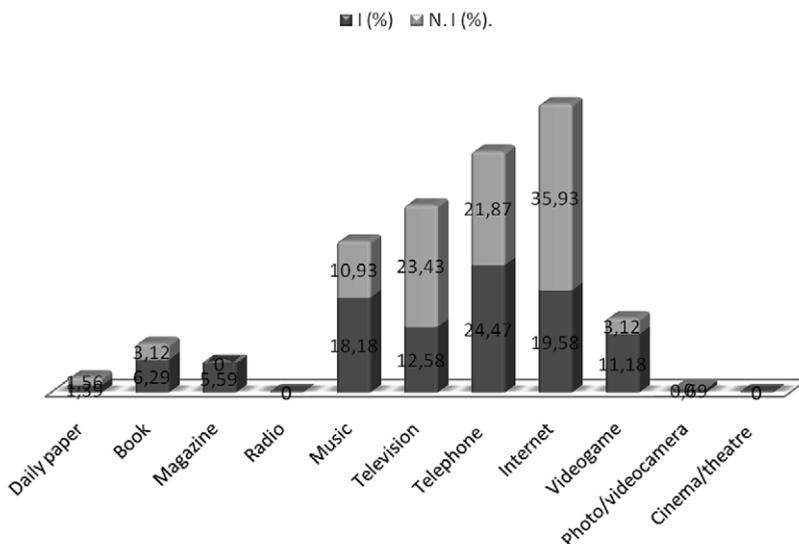


Fig. 1. : Favourite media for the pupils of the first grade of lower secondary school
 As is it possible to note, the preferred media technology for the “new Italian” (N.I) boys and girls is Internet (35,93% of the sample). In the next figure it will be possible comprehend how they use it.

226
227

The list of the media used for the present research it was found in OnAir, 2008.
 The data have been confirmed by the focus group.

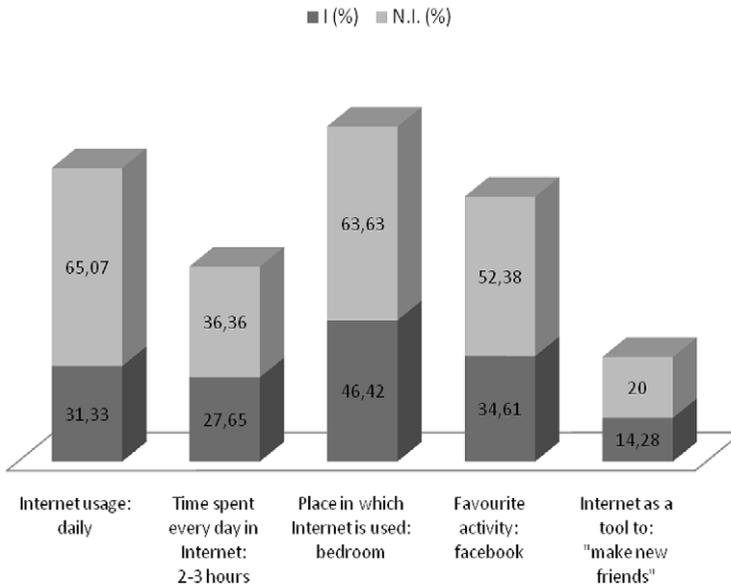


Fig. 2. : Use of Internet by post-migrant boys and girls.

As it is possible to see in the figure number 2, the 65,07% of these boys and girls uses Internet every day and the 36,36% of them spend 2-3 hours/day in it (a).

Furthermore, the 63,63% of these pupils use Internet in their bedrooms (b).

The 52,38% of them preferred Facebook to other Internet activities and the 20% of the sample consider Internet as an important tool to make new friends (c).

Discussion

The data could confirm the hypothesis that post-immigrant youth use Internet with the same frequency (and in the present case, more) than “natives” present in different international researches (Bonfadelli, Bucher, Piga 2007; D’Haenens, Koeman, Sayes, 2007; Elias, Lemish 2009) (a).

Moreover, the findings could support other studies concerning the “bedroom culture” hypothesis (Bovill, Livingstone 2001; Livingstone 2002; Bonfadelli, Bucher, Piga 2007) (b).

Finally, these first outcomes may probably suggest that the post-migrant boys and girls consider Internet as an efficient support to find new friends and to create a positive sense of belonging in the new society (c).

5.2 Description of practices in which digital technologies are used as tools of integration in different educative contexts

Before describing the practices in which ICT mediated socialities and the integration of post migrant youth in Italy, it has been decided to report several answers of educative opera-

tors regarding the role that new media technologies could have in this field of study.

Question 1:

Does the educator of the Center think that ICT could be considered as a useful tool in order to integrate boys and girls from migrant families?

Answer:

All the five centers²²⁸ enrolled in the research answered: Yes.

Question 2:

“Why”?

Noteworthy answers:

a) *“Because the multi-media activities could improve the self-confidence of who still have linguistic deficit in Italian language. Furthermore, the interactivity (of ICT) could support the sociality that often represents the first step to achieve the integration (...)”* throughout *“all the devices of the Net that permit the active interaction: blog, forum, social network (operator of “COME” intercultural center, Milan).*

b) *“Multimedia tools (...) could facilitate the acquirement of different competencies like for instance the Italian as second language or the citizenship education. For these reasons we think that adopting ICT could represent a good decision because they are ever more frequently used by the young people. In add, they are able to encourage communication between adolescents coming from different Countries or social contexts, making easier in this way the relationship with the other”* (operator of “CD/LEI” intercultural center, Bologna).

After having read these statements it is important to identify some of the most significant cases in which media technologies have been used as a tool for integration.

5.2.1 The “Street Voice Lab” project

The first relevant practice is represented by the project “Street Voice Lab” project done during the summer 2010 in the “Punto di Incontro Giovani (P.I.G.)” youth- center (in Udine)²²⁹. The project was divided into different specific courses like hip hop dance, beat maker, beat boxing or video editing. This last activity was the most significative for the present research because it allowed to young people to express their feelings and experiences by new media technologies.

²²⁸ Three of them are intercultural center, the others two are youth centers. For more details see paragraph 3.

²²⁹ When the data was collected, the 30% of the users of the center had foreigner backgrounds (the largest part of them came from Ghana and Magreb).

Discussion

According to Buckingham and Willet researches (2006, 2009), the video editing experience is one of the most common and appreciated activity for the youth; for this reason the operators of the center decided to implement it in the project in order to give the possibility to the boys and girls to express themselves, to discuss and to create something together. Of course, this activity is useful for all the people involved in the project, but it was even more helpful for the “new Italians” because they could communicate thoughts difficultly revealed in the ordinary daily life.

5.2.2. The “SEIPIÙ” project

The second significant example is “SEIPIÙ - Second generations and schooling success” project²³⁰. It has been developed by the “CD/LEI” Intercultural Center (in Bologna), in which many users came in Italy from different Countries. The activities have been done during the supervised study and recreation after school hours in different upper secondary schools in Bologna. The aim of the activities was created together, “Italian” and “new Italian” boys and girls, a blog organized as a journey diary in which to collect videos, thoughts, pictures regarding the experience done during the previous summer.

Discussion

In this project, boys and girls had the possibility to deep the knowledge about the value, the limitations and the different applications of new technologies devices but, above all, they had the possibility to work together and to know better each others. According to the educative operator of the center, *“the blog was an useful instrument in order to communicate, to document experiences shared by different persons, to talk and express something important of own life; (it is) a sort of multiple resources box”* (operator of “CD/LEI” intercultural center, Bologna).

5.2.3. “2x1x2G” project

The third experience is represented by the “2x1x2G, DUE PER UNO PER DUE G” project (www.progetto2x1.it), approved and sponsored by the Italian Minister of social solidarity. It was addressed to post migrant pupils of several vocational schools of Bologna and neighboring cities (in order to guarantee equal opportunities for the post-migrant youth in the school (...) and getting better their participation). This project was done by the same “CD/LEI” Intercultural center. The center had implemented in an autonomous way a Web site with the purpose (...) to help the communication between boys and girls involved in the project.

Discussion

The answers of the people involved in this project highlights the role that the Web site had in the integration process of the post migrants because it offered them *“throughout the Forum section, a tool to discuss about different subjects as second generation concept, intercultural*

²³⁰ The description of this project is the result of the translation made by the author, directly from the interviews.

issues, prejudices and discrimination practices, the value of mother tongue, etc" (operator of "CD/LEI" intercultural center, Bologna).

5.2.4. "COME" Web site

The "COME" intercultural center was founded in the 1994 and still its birth *"it collaborated with public and private institutions but, above all, with schools of every levels (especially upper secondary ones) in order to promote the scholastic success and a positive integration process for the post-migrant youth and their families"* (operator of "COME" intercultural center, Milan).

The people employed in this center tries to reach this purpose preparing professional projects, information, activities (available on the Web site: www.centrocome.it) with the purpose to help teachers, educative, cultural and social operators in strengthening the integration of pupils with migrant families.

Discussion

The suggestions proposed by the "COME" center are well-known in Italy and after having personally tested them it has been considered important to include also this Web site as a "best practice" in this research.

Furthermore, this experience highlights more than the previous ones, that new media technologies could improve easier the integration of the "new Italians" if they are used in collaboration between formal and non formal contexts. However, in order to really achieve the integration of those adolescent it is significant to confer value also to the informal context. The last "example" underpins this supposition.

5.2.5 "Seconde generazioni" Web site

In the 2005 was created the "seconde generazioni" Web site (www.secondegenerazioni.it) produced by post-migrant boys and girls born or grown up in Italy. This Web site was thought as a tool in which youth from migrant families can freely express their ideas and their experiences concerning their status of "foreign" in the nation where they are living. Nevertheless, the main aim for this young people is acquiring the Italian citizenship. In order to obtain this right they wrote together several e-mails to the President of the Italian Republic. Their appeals were not vane because nowadays the Italian Government are discussing about the "citizenship" issues.

Discussion

This example highlights how ICT might help this people in creating a community, a "place" in which youth from different regions of Italy can shared their experiences and struggle together in order to attain their rights.

5.3 Final discussion

All these practices seem to represent the constructive role that new media technologies could have in improving the integration of post-migrant youth in non formal contexts ("Street Voice Lab", "Seipiù", "2x1x2G" projects). Furthermore, they suggest some possible ways to use ICT in co-operation with the formal ("COME" web site) and informal education ("Seconde generazioni" web site). This last sector was not originally included in this research but at the moment, considering the final outcomes, its influence is increasing rapidly. In-fact, it is possible to assume that the relationships created in the free-time throughout new media technologies may be more significant and helpful for the integration of those boys and girls. However, these relationships are not sufficient in order to build a complete process of social well-being: even though in the informal contexts these boys and girls seem "integrated", this integration is unsuccessful if when they attend school or extra school activities they are excluded. This is the reason why all these three educative spheres should share the better practices with the purpose to cooperate in creating together a positive environment for post migrants and, consequently, for their families. Thus, the cooperation²³¹ between these educative contexts should be not an hypothetical way of thinking but a concrete way of working. Actually, in several parts of Italy it is already possible to appreciate the benefits draw-from this co-participation (ex.: "COME" Center) that it represents one of the main suggestions of the present study; the other ones are presenting in the next paragraph.

6. Possible deliveries, final remarks²³² and conclusion

After having analyzed the data and the practices reported in this research, it might be interesting to study the same topic using different approaches. That is why they have been suggested some alternative pathways. From an anthropological viewpoint it could be interesting focus the study on the Country of origin of the pupils, to verify if in other Regions of Italy the people coming from the same nation use new media technologies in the same manner. Still, adopting a psycho-sociological perspective, it will be noteworthy to deep the relationship between the age of the pupils (primary-lower-upper secondary schools) and the different use of ICT.

Pointing out these proposals, it is now the time to refocus the attention on the present study highlighting several aspects that at the moment could characterize it.

Starting with the improving elements, it is important to specify that the technological devices present in the youth centers and in the schools are not satisfactory, both from quantitative and qualitative points of view. These lacking tools may perhaps have compromise the effectiveness of the activities but they represent for real the problems with which Italian educative sector have to deal with. Furthermore, it has already been decided to asked to the post-migrant youth their opinions on the role that ICT could play in improving their inte-

231 These collaborations should be maybe even more crucial in Italy than in other European Countries, because in this nation the financial resources and the technological devices offered to this field are really scanty.

232 Keeping in mind that the project is unfinished, the remarks are "final" just for the present paper.

gration and which could be the proper way to achieve this goal. Finally, as said before, the research wanted investigate local contexts and for this reason it will not possible to extend the final results to the whole Italy.

Continuing with the remarkable upshots, it is relevant to underline that “new Italian” youth enrolled in this project use new media technologies more than the “natives”. Still, the frequency in the chat, social networks, etc. Web sites, may perhaps indicates that they appreciate these technological devices in order to communicate with other people. Furthermore, the data shows that a significant part of those boys and girls considers Internet as a crucial tool to “make new friends” and this is could be read as a signal for an integration wish. So, if these quantitative findings are gathering together with the main qualitative outcomes (the educators’ statements), it is possible to suppose that ICT could play an important role in mediating the integration of post-migrants. This deduction seem to find a concrete reply in the practices described before. However, to discover if new media technologies really could enhance the integration of new Italian boys and girls, “helping them to survive”, it is necessary to wait their answers.

In conclusion, if it is important to enhance all these first upshots, as well it is relevant to consider the unending state of the present study; consequently, it is not right to confirm the research hypothesis yet. In spite of it, it seems reasonable to affirm that the data collecting until now give the impression to go in the correct direction.

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The bird attack: the media, the sender and the internet user in the production of Brazilian journalism

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1. Introduction

This article's aim is to question journalism's production in Brazil specially the one written for internet. Surely there is no novelty to hear that the classic Lasswellian scheme (Lasswell 1948) no longer explain the communication process mediated by the World Wide Web. The receptor has been mentioned by some authors as the newer empowered element in the communicational process, despite the historical role always disfavored in the asymmetrical processes. Studies about reception celebrate that kind of empowerment and often relate it to educational, political and cultural issues which transformed the world and allowed a new relation between an interactive receptor and the emitter/news corporations.

There is no doubt it means a historical conquest however researchers of reception point out other determinant elements. In fact, this scenario has been predicted by McLuhan since the 60s. 'Medium is the message' (McLuhan 1964) is a necessary reflection to help understanding the deep changes that journalism making process has been through. Therefore, before all it is important to analyze the medium, or in other words, the internet so to understand the new places in which the media, the senders/emitter and the receptors stand.

The essence of this new technology, the internet - according to Heidegger (2006) – is the new conditions it imposed to realize our communicational processes. To mention McLuhan (1964) the internet's main message is that something has changed in the communicational relationship of societies.

Nevertheless, those changes are also perceived in an asymmetrical way in relation to the basic elements within communicational process. In Brazil, for instance, one can notice that receptors (internet users) rather than senders have understood and assimilated more quickly all the changes offered by the new medium. Perhaps that happens so far because the Corporations' universe seems to be much more conservative and resistant to novelties than individuals.

The large use of the internet in Brazil, no doubt, is something radical for the country. The amazing access throughout the country to that medium has led many news corporations of newspaper, radio or television to migrate to the internet in order to attend user's demand. Numbers from Brazilian National Institute for Geography and Statistic (IBGE 2010) show that between 2006 and 2010 the access to the World Wide Web has grown up more than 112% in Brazil. Almost 40% of all Brazilian are now wired in the internet.

The technology allows receptors to embrace it and as said before, emitters resist it. As evidence we can mention an emblematic fact occurred in Brazil a few weeks before the Presidential elections. Folha de São Paulo one of the biggest and more respectable newspapers (printed and online editions) started to publish a series of 'close examination' reports on Dilma Rousseff's life, candidate and now Brazil's President. Those actions, sometimes aggressive towards Rousseff were criticized among internet users, especially those using some social networks such as Twitter, Orkut and Facebook, and they protested against the paper's 'attacks'.

The episode's highest point was triggered by an article published on the 5th September 2010 ('Light consumers have paid R\$ 1billion more due to Dilma's fault') in which Folha de São Paulo accused the candidate to overcharge Brazilian citizens with the electrical bill more than due. On the same week, the Ombudswoman of Folha de São Paulo, Suzana Singer, received almost two hundreds emails complaining about the paper's coverage. But the greatest social media mobilization occurred in the Twitter. In less than four days more than 45 thousands messages were posted on Twitter concerning to what internet users thought as a disproportional attack against Dilma Rousseff.

The electronic Era, as named by McLuhan (1964) brought a new environment which allowed much fresh experience at receiving content and that was due to the possibilities of technology. In this article we question the empowerment of the receptor/user within the internet and its impact on the making of journalism process under McLuhan's thought. To that end we examine the above mentioned case of Folha de São Paulo in an attempt to understand the shape of this new social and technological environment in the Brazilian society.

2. The middle way – Theoretical and Methodological approach

McLuhan (1964) denounced in the 60s the media's "invisibility". For him at that time researchers on communication emphasized much more the studies of the effects and messages. The channel was the lost dimension, the obvious data which for its probable "invisibility" occupied a marginal space on most researches done about communication. To McLuhan that was a deadly mistake if we considered that the main message of any media corporation was the creation of a new social and technological environment which wouldn't leave a fraction of us untouched. 'For the "content" of a medium is like the juicy piece of meat carried by the burglar to distract the watchdog of the mind. The effect of the medium is made strong and intense just because it is given another medium as "content"' (McLuhan 1964, p.18).

According to McLuhan (1969) all societies has always been much more shaped by the media's nature than the content conveyed in it (McLuhan, 1969). No doubt this argument is very relevant to start to understand the changes and the phenomena caused by the creation of a new mass media corporation. The author says that it is possible to understand and divide the history of humanity from the types and the nature of the medium used by people. McLuhan proposes three different historical moments to explain the medium's impact: oral, written/printed, and electronic civilizations.

Oral civilization which existed until the beginning of written civilization was marked by the balance of the senses. It means that throughout that period the world's perception was determined by a deep feeling experience demanding efforts from all our senses' organs in a harmonic way.

That historical moment is pointed out by McLuhan (1964) as the simultaneity and circulatory movement of the tribal and collective world in which experience and culture are passed on orally by individuals. Thus, it is possible to identify some characteristic of oral civilizations: intimate character, need for face to face interactions, and perception of the time in a circular way (not linear which marked the written/printed civilization) (Ong 1998).

Printed/written civilization is characterized by the disarrangement of that senses' harmony, as it begin to privileges the sight. For McLuhan, this technology imposes new ways of living because it breaks the balance of the senses, prizes logic and linearity, and offers human kind a new and radical arrangement to produce and to rescue knowledge.

[m]cLuhan claims that writing and, to a greater degree, print, break through the tribal balance, give oral people an "eye for an ear", make the sense of sight dominant, and distance people from sound, touch, and direct response. The break from total reliance on oral communication allows people to become more introspective, rational and individualistic (Meyrowitz 1985, p. 17).

If before, in oral civilization, one lived under the sign of strong, not mediated, social interaction in the written/printed Era one observes the intervention of the medium which breaks the intimate character of the relationships, making them much more bureaucratic. In addition, the written/printed civilization is marked by a great capacity to control information. The written/printed media such as daily newspapers tend to produce content in a much more impersonal, selective and specialized style (Sousa 2009a).

Finally, the third civilization, the electronic, is the one we are living in. McLuhan lived only part of this Era but witnessed watched the greater days of radio and television and that was great enough for him to affirm that electronic Era brought with it some values of oral civilization such as expressiveness, circulatory movement, and the capacity to publicize experiences, feelings and emotions. The electronic medium's capacity to approximate people, making it possible to them to put together and expose their face to face experiences is one significant reason for some authors of Toronto's School to defend that as the second oral Era.

The reason to rescue those arguments from McLuhan is to try to understand the transformations journalism has been going through and the new roles of senders/emitters and receptors. For instance, during the written/printed Era, in which there were only printed newspaper and magazines, journalism experience can be summarized by an organized and empowered emitter sending information to a scattered receptor with a very low capacity to influence the media's content.

Certainly, as pointed out in the Introduction at that time took place an asymmetrical model of reception in which emitter and receptor had separated roles and almost never established any communication between them. Well, there was not any other way of doing it, if we take into consideration that print technology was not open to both ways of communication. For instance, letters sent by readers have always sounded as a marginal slow and silent revolution announcing that the role of receptors would change soon.

The electronic civilization some how rescues the values of the tribal period and brings with it the remake of its communicational processes. However mediated, those processes tend to simulate face to face contacts and do not demand much isolation as in the case of the printed media. McLuhan (1964) believed that due to the capacity to bring images, television was capable of evocate more intimate and diverse content.

[t]V has changed our sense-lives and our mental process. It has created a taste for all experience in depth that affects language teaching as much as car styles. Since TV, nobody is happy with mere book knowledge of French or English poetry. The unanimous cry now is, "Let's talk French", and "Let the bard be heard" (McLuhan 1964, p. 332).

Although radio and television create a very distinct environment from the written/printed Era, most journalism corporations still reproduces the same organized model with an emitter sending information to receptor. Although, it becomes very clear changes occurring in the experience of reception and in the form of journalism production - the core of communicational model remains unmodified.

It is only after the outbreak of the internet, which McLuhan did not lived to see it, we watched a revolution in our classical model stimulus-answer. Beyond the announced transformations in radio and television the internet changes in hat secular format of the production of journalism. The receptor in no longer the lost dimension who welcomes all senders' information who so far was the only one capable of deciding what content, how and when it should be broadcast.

The environment created by the internet is just what makes it possible to break free with that stimulus-answer model. This technology recreates even more perfectly that face to face interaction as it allows the user to interact in real time. The internet's uniqueness is that it is capable of creating social experience much more than what is available on radio and television broadcast. In order to use the internet users only need to know what they want and make intentional commands so that interaction can happen (Sousa 2009b). It means that receptors, as well as emitters, need to know what they want and make the necessary decisions.

Within the World Wide Web does not prevail the so called 'less effort law' characteristic of television productions aimed to the average receptors with content directed to them (Castells 1999). In the internet prevails a strong bilateral communication process making it possible the participation of receptors. Within the internet all dots/users are interconnected and although they don't have equal opportunities to express themselves they can have all means available to make it possible. The internet certainly embeds an innovative character in relation to other communication medium, so it allows that receptors, historically powerless in the process of journalism making, have now the possibility to try a new different role as receptors, and even as emitter.

On the other hand, it seems that emitters need to adjust themselves to this new scenario giving in and offering some space, so that the so called two ways communication process can happen, thanks to the technology. In the case of journalism production, the emitter is the social player who should give in and open some space to negotiate with internet users.

Thus, with this article we try to understand how slowly some of the transformations provoked by the internet are reflected on the production of Brazilian journalism. More precisely, we try to understand how the roles of emitter and receptors have been changed.

To that end we analyzed a much publicized case in Brazil involving the main national newspaper, *Folha de São Paulo*, during the presidential elections in 2010. This case's main characteristic was the readers' interaction between themselves during a great mobilization at the social network Twitter. They protested against *Folha's* discriminatory attitude towards Dilma Rousseff.

The methodological strategy was therefore to analyze readers spontaneous and convergent movement, embracing embraced the medium characteristics - Twitter only allows the

use of 140 characters - to express themselves towards the paper's position, we also analyzed paper's reaction - or the lack of it, as noticed by its own Ombudswoman on her Sunday's column, as well as in other publications.

3. The birds attack: the object description

The 5th of September 2010 was a challenging day for the Brazilian biggest newspaper, *Folha de São Paulo*²³³, and ultimately to the history of mass communication corporations in Brazil. Less than a month to the presidential elections, the candidate Dilma Rousseff from PT (Workers' Political Party) was away ahead of the conservative candidate, Jose Serra, in the opinion pool. On the 5th of September, *Folha de São Paulo*'s front page headline took by surprise its readers: "Electricity consumers paid R\$ 1 billion due to Dilma's fault"²³⁴.

The report written by *Folha*'s journalist Rubens Valente affirmed that between 2003 and 2005 due to administration's mistakes in charging electrical energy there were losses of R\$1 billion to the Brazil's exchequer. In its opening the report doubts the competency of the Minister of energy in charge:

[t]he electoral propaganda has shown the candidate Dilma Rousseff (PT) as an efficient manager. However, a mistake made by the Minister of Energy puts at stake that image. The mistake was pointed out by the TCU (Brazilian Audit Office) in a process going on from seven years, and also confirmed by an investigation done by the government. According to the Office's decision Dilma has procrastinated to recognize and rectify the mistakes on the social table of charges, a benefit given to low incomers consumers of electrical energy (Valente 2010).

Folha de São Paulo's report was referring to the period in which Dilma Rousseff was the Minister of Energy in the first government of President Lula, also from the Workers Party. Despite the headline's assertiveness the report itself led to a different conclusion as the "fault" mentioned by the paper was in fact due to a norm approved much before Mrs. Rousseff was in charge of the Ministry of Energy. The report was therefore mistaken and apparently written to mislead the voters and be used as ammunition for the opposite candidate in his campaign. And it was immediately noticed by *Folha de São Paulo*'s readers.

In a couple of hours thousands of readers went to the social media Twitter to complain against the gross report and accusation towards Dilma Rousseff under the tag #Dilmafactsby-Folha. Even who wasn't openly her supporter complaint in a much humored way, using non sense and hilarious affirmations in an attempt to exposed *Folha de São Paulo*'s lack of credibility. In less than two minutes there were around 250 new tweets (posts).

Those posts, written in a spontaneous and anarchic way, without any coordination or

233 Brazilian biggest newspaper with 301.243 print units. Source: IVC – Instituto Verificador de Circulação, december 2010 <http://www.redetribuna.com.br/images/RANKING%20IVC%20DEZEMBRO%202010.pdf> – accessed in 20/03/2011.

234 <http://www1.folha.uol.com.br/fsp/poder/po0509201011.htm>, accessed in 20/03/2011. One billion reais (R\$) is about US\$ 599 mi, at the Brazilian Exchange Markets, in 03/18/2011.

leadership coming from Dilmás' campaign headquarters rapidly went to the so called Twitter's Trending Topics – when a subject figured as one of the most popular or commented during the day – in Brazil and abroad. Worldly, it was the third topic on the 6th of September according to the British newspaper *The Independent*²³⁵ and also according to the site of internet media trend Mashable²³⁶. In conformity to the site What The Trend the tag #Dilmafacts-byfolha occupied the 26th position on the annual accounts of the trend topics of 2010²³⁷.

At that moment started a curious but significant media phenomena, probably the most remarkable use of the micro blog Twitter in Brazil so far. During the next days people from all over posted some absurd and funny statements, as if they all were caused by Dilma's. Thousands of tweets (posts of maximum 140 characters on Twitter) area still available by doing a quick search on Google as shown bellow²³⁸:

@iavelar – Dilma caused belligerence between the brothers Abel and Caim - #Dilmafacts-byFolha.
 @ondavermelha – Forecast: Tsunami will hit Brazil in less than a month and its Dilma's fault - #DilmafactsbyFolha.
 @alansilva1974 - Dilma sank the o Titanic - #DilmafactsbyFolha;
 @MaurilioBarbosa - Discovered: Dilma took part in the terrorist attacks of 11th September.
 @iavelar – Confirmed: Dilma Rousseff is guilty of the worst humiliation Internet has ever imposed to a newspaper - #DilmafactsbyFolha;
 @JoelMaratonista - Le Monde to Folha, exclusive: Police find out that Dilma murdered Joana D'Arc - #DilmafactsbyFolha
 @diegomalone – French investigation reveals that Dilma forced Princess Diana's driver to get drunk on the day she died. - #DilmafactsbyFolha
 @alexdaforca - Dilma poisoned the apple eaten by Snow-White - #DilmafactsbyFolha (Twitter 2010).

On the following days after the protests on Twitter, Folha de São Paulo simply ignored the movement #Dilmafactsbyfolha. There wasn't a single mention to its existence not even to defend the paper's report or position or to explain its silence. It seemed natural to expect that the newspaper would join the population's discussion or embrace it as a fair subject to deserve the paper's attention and in its process of news production.

By coincidence or not one day after the reader's spontaneous movement on Twitter a well known Folha's columnist, Ronaldo Lemos, published an article entitled "Twitter is Brazilian" but with no mention to the tag #Dilmafactsbyfolha. On the contrary, it contained some criticism to what the author considered the vulgarization of the trending topics "emphasizing the strong Brazilian presence on Twitter":

[o]ne can already notice that some 'gringos' are beginning to be irritated. They must

235 Current Twitter trends: Ana Pau, Jouvvert, Kardashians - <http://www.independent.co.uk/life-style/gadgets-and-tech/current-twitter-trends-ana-pau-jouvvert-kardashians-2071730.html> - accessed 1.

236 Top Tem Twitter Trends This Week - <http://mashable.com/2010/10/09/weekly-top-10-twitter-trends-chart/> - accessed in 20/03/2011.

237 <http://yearinreview.whatthetrend.com/> - accessed in 20/03/2011.

238 <http://blogdojunioriranda.blogspot.com/2010/09/folha-de-sao-paulo-vira-chacota-mundial.html> - accessed in 20/03/2011.

have been saying we are repeating the same happened with Orkut in Brazil: Portuguese language dominating and expelling other nationalities. Besides, there has started a sort of vulgarization of the 'trending topics'. When some Brazilian subject reached the global TTs it was awesome. Now it has become tedious. In the end I began to distrust that global "trending topics" are not so important (Lemos 2010).

Finally, on 12th of September, for the first time and from the very newspaper, came up a discordant voice against the paper's passiveness. Its Ombudswoman Susana Singer²³⁹ used her weekly space to admit Folha's partiality on presidential elections' coverage. Ms. Singer, who writes every Sunday, when the newspaper's sales rocks, gave her article a very suggestive title – "Bird's attack" – a reference to the symbol of Twitter, a bird, and also to the protest's wave happened just a few days earlier at the internet social network²⁴⁰.

(...) last Sunday the paper exaggerated when published the headline "Light consumers paid R\$ 1 billion due to Dilma's fault". The problem was not the article itself (...) To follow closely candidate's administration is an excellent initiative but to give that subject such a prominence doesn't justify in journalistic terms. (...) A forced headline such as the one in question, in addition to other campaign scandals unbalanced the electoral coverage. Dilma is way ahead in the opinion pools and that alone is sufficient to receive more attention than her opponent. However, Jose Serra only is reported by Folha to throw "accusations". Nothing about his recent administration of São Paulo, nothing about his unattainable promises (Singer 2010).

The Ombudswoman's article recognized the relevant role of internet users in identifying Folha's mistake and posting more than 45 thousands messages against the newspaper's headline and its political position. Ms Singer also pointed out that around 11 thousand tweets were indexed by the tag #ondavermelha (#redwave) originated by supporters of Dilma's party which has a red flag as a symbol. However, she also recognized that even with the help of her political party, the movement could not be defined only as the result of the electoral campaign.

(...) it is a mistake to think that only PT's zombies led by politicians set fire on Twitter. The party hasn't achieved such a computational expertise yet. Within the anti-Folha movement there all sorts of readers: unsatisfied readers, people who just joined the movement to laugh a bit, and also those old resented people towards the newspaper (Singer 2010).

The Ombudswoman also criticized Folha's ambiguous politics concerning its coverage of the use of internet social networks. She also emphasized that in recent past the newspaper had different approach about other online popular manifests when favorable to the newspaper's journalistic coverage, but it just ignored #Dilmafactsbyfolha's movement.

239 Folha de São Paulo was the first Brazilian newspaper to adopt the ombudsman. <http://www1.folha.uol.com.br/folha/ombudsman/> - accessed in 03/20/2011.

240 The blue bird is the Twitter's logo.

[i]t is impossible to ignore such reaction and Folha de São Paulo did it. It didn't answer internet users on Twitter e did not at all reported the phenomena. (...) It is not possible to look towards social networks only when interests. The paper should regain the balance on the electoral coverage and agree to open some space welcoming dissonant voices. All in all, not belonging to any political party and not being afraid of criticisms had always been the most precious characteristics of that Newspaper (Singer 2010).

Ms Singer's conclusion was that Folha de São Paulo should open more space to dissonant voices and not be so afraid of criticisms. That affirmation sounds quite obvious, if taken into consideration that this is an intricate part of the Press' role. What is not so obvious and became much clear once more during the episode #Dilmafactsbyfolha episode was empowerment of the users/readers.

The one way communication process which marked journalism before the advent of the internet was subverted by the development of online media which gave to users and a proper platform to connect to other users, also linked to the internet. If traditional media still resists realizing these facts and remain valuing only what is in their own interest in its relation to audience, the same cannot be said of the Internet users. In events such as #Dilmafactsbyfolha, users proved to understand how much power they have in their hands.

4. The birds in the middle: the case's analysis

The episode of Folha de São Paulo certainly is emblematic to understand better this new social and technological environment created by the internet. The mobilization brewed inside Twitter indicates that it maybe became unreasonable to carry on practicing the same old model of journalism production originated during the printed era in which the asymmetrical communication relationship revealed a powerless receptor with no means of participation in the news production and limited power to express their views afterwards.

As well said by McLuhan (1964), the electronic era has created an environment less bureaucratic, more informal and more demanding for quick answers to their questions. The journalism making process certainly will not pass unhurt by it.

The possibility created by the internet (in a process of constant and collective modification) and of interaction between users changes the whole perspective on ordinary people's participation on journalism making. It is not necessary anymore wait until reader's letters sent to the news desk were edited and published, taking into consideration that all printed newspapers have only limited space for readers. So, Folha's case shows us that those limited spaces offered by newspapers to interact with users may become obsolete.

Unsatisfied users did not consider enough to send some emails to the Ombudswoman and wait for her to mediate the debate. The chosen platform was the social network Twitter which does not impose any censorship or edit the posts published. The platform can be visited at any time and it allows you to re-send (re-tweet) any comments to other users or send individual messages addressed to chosen people or to those who "follow" you there.

That movement on Twitter, we understand, can be considered even more interesting when considering, as said before, that is was neither organized or had any leadership. Its spontaneity turned a light on the new role played by receptors. There were thousands of com-

ments in a very short period of time coming from all over the country and abroad. Beyond the probable mislead report on Dilma Rousseff's run to presidency, what became clear on Twitter's posts was a fine irony by internet users, so to put in evidence they were invoking to themselves the right to take part in the news production and to argue for explanations about the papers' intentions, in a pledge to be taken into consideration.

The newspaper's resistance to publish readers' emails, and afterward to write an apology, as well noticed by its own Ombudswoman's article, shows another interesting thing. Although the communicational processes have been rapidly changing since the advent of internet the episode facts leads us to understand that Brazilian mass media corporations, mainly the most traditional ones, are reluctant to change. For instance, the attitude of Folha de São Paulo was to ignore the readers complaints and to put its credibility at stake among social network users.

The Ombudswoman's mediation, no doubt, some how recognized the importance of giving voice to those historically powerless in the communicational process. On the other hand, one can analyze as an strategic action to try to control the movement if we consider that Ms Singer's article was the only response from the paper, which never published anything on the fact, not a single retraction.

So it seems that the making of journalism has been changing all over the world. And it is evident when following the news on the internet being updated every minute of the day. Some changes are obvious, others not so, and some are quite silent. The relationship model between emitter and receptor is under a significant revolution with no precedents. As well argued by Manuel Castells (1999) those are acting receptors that do not seat and wait. On the contrary, they bring a vast range of demands. In this scenario, resisting may not be the right attitude and can be quite dangerous for the credibility of a media news corporation, as demonstrated by this case concerning Folha de São Paulo.

The print era legacy such as separation, isolation and the unilateral models of communication does not make much sense nowadays in a context where technology opens up the possibility of a great level of participation in the production and mediation of content, and it constantly invites us to take part into the debate.

5. Final considerations

The episode discussed in this article, "The birds attack", gives us some clues to understand changes going on in the relationship between the traditional journalistic players, the emitter and the receptor, considering the last one in its new role as internet active users. We started from the presupposition of McLuhan's postulation that the main message of the medium are the transformations made available by the very medium in the attempt to reorganize the whole communicational process.

Some aspects which apparently dictate the new reconfigurations of emitter and receptor's roles in the process of journalism making production can be highlighted from this article. One of them is related to the readers' empowerment as a phenomenon away from intervention or control by the media corporations. What we call empowerment is, as a matter of fact, an objective fact and objectified by the characteristics of the medium internet, which translates in the most exemplary way McLuhan's famous sentence: "The medium is the message".

Episodes of protests against media coverage, as occurred with Folha de São Paulo and its readers, tend to become more frequent in a process of mutual apprenticeship – between the media and its audience – even if the rhythm seems to be dictated by the last in their urgency to take part into the news making process.

Certainly, that phenomenon happens because in the negotiation to reformulate the social roles, eventually who needs to give in some space is now the emitter. And the receptor's movement is in the search of a cause historically denied in part due to the technological shortness. The case analyzed in this article shows us that receptors, no doubt, are conquering some space within the Brazilian journalism making production, especially regarding the internet.

The analysis of the comments posted on Twitter point out to two interesting ways: the first, as mentioned before, is the more intense participation from receptors; the second is the choice of the field chosen for participation. Once the newspaper did not create conditions for that to happen, the debate occurred on the public arena of Twitter and captivated even more people than the usual number of Folha de São Paulo's readers.

The present analysis is only part of a work being formulated elsewhere in the world to try to understand the impact of the medium on the roles of emitter and receptors. No doubt, that change is an ongoing process and there are several aspects needing to be addressed, and some others that are still to be unfolded in this contemporaneous, and why to say, disturbing scenario of technological transformation. Nevertheless, just to follow McLuhan (1964), one can affirm that not even a fraction of us and our media corporations will pass on immune to technological innovations.

Finally, we understand this research implies questions which will persist or impose themselves on the observation of empirical cases: where to those changes in the roles of emitter and receptor in the journalistic processes will lead us? Or from a different perspective: Will those changes prevail or what we will see in future will only the accommodation of positions discussed here? Will news production ever be affected by this new media configuration? New researches and consolidation of their data in future will, certainly, help us to find answers to some unrest questions.

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Social networks in the university teaching

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1. Introduction

Information and Communication Technologies (ICT), communication and Web 2.0 technologies allow the settlement and the strengthening of new complementary formation spaces to the traditional present teaching which instead of replacing it, complement and reinforce it.

And it is certain that keeping pace with the Information and Acknowledge Society we've witnessed the disappearance of transition file gadgets –such as the floppy disk or the CD– which have led to the memory cards and the usb. Computers and IT systems which we used to use not a very long time ago have become totally outworn, as well as it happens with mobile phones, with photographic or video cameras, with televisions or even with domotics systems of our homes.

Obviously, the teaching in general and the university in particular do not prevail apart from all these changes which affect both technology and technique. In other words, technologies have changed, so the techniques of giving lessons, as a straight consequence of the new options and alternatives which provide technological systems, in a way that the traditional magisterial present class has become old-fashioned for most interactive systems which imply more students' engagement, not only in a present way, but also through the great range of resources provided by technology. Adell already assured in 2007 that the digitalization of the information would change the overriding support of the learning and knowledge and, therefore, the habits and the customs concerning knowledge and communication.

In this sense, universities have begun to embody virtual classes or learning management systems of learning (LMS) in order to improve and facilitate their students' formations and, for their part, the professorship has switched from leaving documents at the photocopying to send them through electronic mail or give virtual tutorship through instant messaging systems such as *Messenger* (Túnnez & Sixto, 2010); although it is unarguable, this is, on the other hand, due to the fact that not all the students not even all professors have received the changes at the same way and there is even who highlights that the teaching practice has not got too many changes (Martín, 2009).

Following Esteve (2009), social networks and the Web 2.0 together must be conceived as an easy way making tool for the change in the learning processes, which, besides, supports and improves the strengthening of a suitable practical space for socialization and culturalization of the youth (Pérez Tornero, 2008) in a huge fortunate source of contextualized learning (Esteve, 2009). In this sense, the use of social networks in the teaching contexts can not be taken as a secluded exchange, but as a standard which conceives the learning as the result of interactivity and collaboration among people, which places the student in the core of the

model as an active role in its own learning process (Michavila & Parejo, 2008), considering that the tools of the web 2.0 add to Internet socialization (Cuesta, 2009) due to their inherent features of interactivity, integration, and collaboration.

Learning networks are based on practical communities with an interest shared by their users. Everyone of them are interested in what the others can teach them and all of them have something to teach the others: the learning turns out to be shared and collaborative among pupils (León de Mora, 2010), virtual spaces are potentiated for the social interaction, the open integration supported in easy-handling, free and telematics applications (Cabero, López & Llorente, 2009). In effect, technological literacy is defined for being critical, collaborative, and creative (Bruns & Humphreys, 2005).

Classes have overreached the walls and now do not have timetables: they are open 24 hours and 365 days of the year. Technology has provided the change from communicative and teaching models of one-way featured, in which a professor would provide a group of students with information and learning, to two-way, interactive and integrating models in which all the components have something to add to the process and in where it is not necessarily required the physical presence, but, at most, virtual synchrony.

Three are the basic factors which play a role in this process (Freire, 2007): technology, knowledge, and users. That is, technology allows giving knowledge in a different way from what has been done for years and, as a result, students are not only receivers anymore, but also they can add to the teaching product, interacting with the professor and among themselves. Taking as reference the contributions of Cabero & Llorente (2005) (cfr. Cabero, 2006), we have fleshed out the following decalogue in which we assemble the 10 advantages that technology adds to the teaching:

- 1) Students follow their own rhythm of learning.
- 2) Formation is based on the concept of formation at the moment it is required (*just in time training*).
- 3) It allows matching different audiovisual materials.
- 4) With one single application it can assist a greater amount of students.
- 5) Knowledge is an active process of construction.
- 6) It tends to lower people's time of formation.
- 7) It tends to be interactive both concerning participants and contents.
- 8) It is often performed individually.
- 9) It also allows the production of collaborative proposals.
- 10) It can be used at workplace and at the student's available time.

This paper's authors teach Information Production, a four-month period prerequisite subject in the forth year of the Journalism Major at the Faculty of Communication in the University of Santiago de Compostela. During this academic year (2010-2011) we've tried to fire up a pilot experience in order to supply the subject present teaching –both its theoretical and practical part- with a 2.0 environment in which interactivity in the present teaching in the classroom can be increased and, at the same time, to share and exchange information (links, videos, photos, texts, etc.) with students and also provide interaction among them, making remarks on what is published, taking part in what is proposed and suggesting new ideas and contributions. We wanted to experiment the relevance of changing the flows in the academic communication triggering a scenery where everyone can permanently set up relations with

each other and to tamper the mobility concept in the academic communication process *on line*: instead of stimulating the student to get into the educational environments, why not to take the academic contents to the environments where students are used to be around? We've chosen the social network Facebook because:

- a) It consists of a network of generalized uses among our target (students in the fourth year of Journalism).
- b) The public profile of Facebook matches, according to the own company's data, with users aging between 18 and 44 years old.
- c) The platform relies on the necessary resources and applications to supply the present teaching with an *on line* login and storage of audiovisual, graphics, and text documents.
- d) Facebook web pages allow being managed, which at any time assume a control of publishing on the wall and, at the same time, a continuous assessment of the student's activity.
- e) And, also, because Facebook can be taken as a supply for the present teaching, but never assumes its replacement.

2. Aims and methodology

The main aim of this research is to assess the pilot experience to supply the present teaching of a university subject with a virtual environment in a social network, waiting upon the description of the model used and the resources and applications employed; the students' participation concerning audience ratings and levels; the analysis of the reverberation; and the students' change from the reactive to the proactive attitude in regard with their implication in the learning process.

The model of use of the virtual teaching is, likewise, defined and assessed from the perspective of the application of new technologies in teaching sceneries, explaining the changes both in technique and technology, and evaluating the feedback of contents and the recipient's model that also becomes the issuer and diffuser of contents, always under the competence's point of view and aims settled by the new European Space for Higher Education (EEES).

This research demanded the use of three differentiated techniques of inquiry. Firstly, a simulation of the participative observation method as users and administrators of Facebook web site to carry out, at the same time, a monitoring of the activity recorded throughout the whole four-month period (early October, 2010 to late January, 2011) and evaluate the practical work developed, the interactivity that was revealed and the teaching relevance. Secondly, the audience data collected in the statistical measurers, which the social network itself offers to their web sites administrators, was analysed from an exclusive quantitative perspective, supplying at the same time with other data from external measurers, especially Alexa.com and comScore. At last, a survey with a questionnaire settled for a sphere of 94 students (118 enrolled students except 23 belonging to exchange programs or in the final year of the university course). With an assurance interval of 95% and a margin of error of 5% for the most unflattering situation of $p=q=50$, the sample was settled in 76 students. All the categories of resolution were defined as options to be chosen or as assessment ranks employing scales such as the Likert, in which the 0 assumed the lowermost level, 10 the uppermost and 5 the least

positive assessment. Also in other questions we replaced the numerical scale for assessments with subjective implication predefined previously, which have assured the computation of the answers and its posterior emptying in the database outlined for such purposes, as well as its computing and stat treatment in SPSS-PASW Statics 18.

3. 'I like' using Facebook in the university teaching

Internet assumes many changes in the daily life of millions of users all over the world, it has improved communication and communications and also its use in the university teaching is very profitable, since it a) provides students with a great amount of information; b) facilitates the update of contents and information in general; c) makes information flexible, regardless of time and space where professor and student are placed; d) allows displacing knowledge; e) facilitates the student's autonomy and independence; f) facilitates just in time and just for me formation; g) offers different tools of synchronic and asynchrony communication, both for students and professor; h) facilitates multimedia formation; i) facilitates collective and group formation; j) improves interaction with information, with professorship and among students; k) facilitates the use of learning material and objects; l) allows servers to continuously assist the activity developed by the students, which helps its evaluation and m) spares costs and displacements [13].

Nevertheless, the changes do not only affect the teaching, but also students and professors have to adapt themselves and acquire the necessary competences, so that the on line teaching can achieve great quality and become efficient and effective. The usual student would not create, he/she would only take part and hold him/herself back to inputs. However, his/her role has changed now: a student of a Web 2.0 class student must be competent in the creation of contents, in its diffusion between professors and fellows and in its critical assessment of the others' ideas.

From the reactive attitude with a limited margin of decision concerning the learning, we've switched to the proactive attitude which assumes more freedom of decision-making regarding to what and how to learn and its own performance. The new student must be more entailed and engaged with the learning itself, he/she will settle for themselves their own aims, he/she will be aware of their attitudes, skills and own strategies and the ones they must have and put into practice for their learning, leaving some of the skills aside, mainly the ones regarding to rote learning and replication of contents and introducing the ones related to communication and search, selection, production, and spreading of information and knowledge, and all this under the context of a collaborative environment encouraged by the learning process model and the teaching act. The traditional student had never had the opportunity of learning to be autonomous or being it, but now it is possible to apply strategies related to an autonomous apprenticeship which allow him/her being it, so that's how he/she makes up a personal and professional profile in order to their continuous formation and learning process throughout their whole life [14].

If directives of the European Space for Higher Education (EEES) aim to achieve a Learning Society, superseding the stress on teaching by the learning and depleting knowledge integration in favour of results, it is obvious that all the benefits which assume the use of technology in the university teaching help the achievement of the purposes mentioned and the learning

process of students engaged, with capacity to learn and with perspective to understand interpersonal and intergroup relationships as the base of an advanced and modern society.

On the other hand, it is also required from the professorship their adjustment to the new academic spaces and their virtual sceneries. Besides, in the case of the web site in the social network Facebook, there is coincidence between professor and the web site administrator which requires that apart from making easy students' learning, the professor and administrator have the power to publish themes on the wall; to move links to the main wall, recommend or suggest links recommended or proposed by students themselves; to look up, assess or publish the statistics of the measurers inherent to the web site in audience and participative terms; to propose and run debates on the Net or forums of issues related to the subject which is being taught, and so on. But regardless of the type of platform chosen, that is, whether it is a social network or not, it is required from every professor to be able to encourage and set up relationships with all partakers and users; have the capacity to take off doubts which might come up; promote the participation in forums and roundtables or in the debates on the net, if it's the case; and stimulate students in general.

Obviously, therefore, digital literacy happens to be essential both for students and professors for two main reasons:

1) Internet and computer systems turn out to be essential and fundamental in the development of those communicative processes.

2) Messages are settled in a lineal manner by exchanging and mixing up issuer and recipient's roles and switching from information layout to management and the possibility of building up different meanings concerning the hypertextuality which is carried out by users.

Llorente [15] relates, at the same way, a set of competences and functions the professorship must have to give lessons on the high quality Net. Here they are:

Table 3. Our understanding from the Idea about Professor's roles that carries out 2.0 teaching defined by Llorente. Available at: Llorente data [15].

Academic and pedagogical role	To give information, broaden, clarify, and explain the contents presented; reply to students' works; make sure students are reaching the appropriate level; outline learning activities and situations according to a previous diagnosis; sum up in group debates the students' contributions; make global and individual assessments over the activities which were developed.
Technical role	To make sure students understand the technical running of the telematic environment; give advise and technical supports; develop specific formative activities; carry out learning groups; embody and modify new materials to the formative environment; get in touch with the system administrator (in case he is not the professor); use the electronic mail in an appropriate; know how to run and take part in asynchronous communications; employ the software with certain purposes.
Organizational role	To set up the course calendar; explain the running rules inside the environment; keep in touch with the rest of the teaching and the organizational team; organize works in groups and make easy their coordination; contact experts; offer meaningful information for the relationship with the institution; set up structures in online communication.

Advisory role	To facilitate intellectual working techniques for the study on the Net; give public and private suggestions for the work and its quality; make sure students work in a relevant rhythm; encourage students for the work; let them know about their progress in their studies; be an instructor and advisor.
Social role	To welcome students who are partakers; incite students to broaden and develop the arguments presented by their classmates; integrate and carry out interventions; encourage and stimulate the participation; propose activities in order to make an easy way for knowledge among participants; dynamize the work on the Net.

Pagano [16], for his part, deems that the professorship that gives virtual lessons should have the attributes reflected on the following figure:

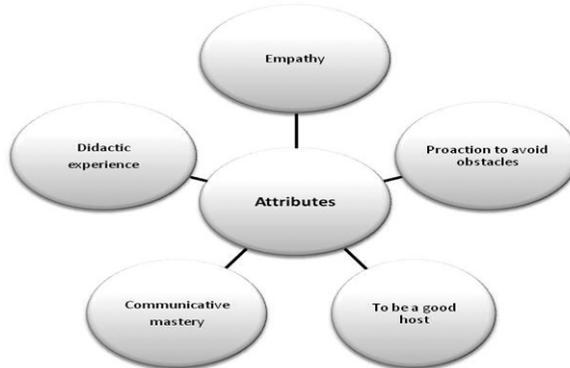


Fig. 6. Our understanding from the Idea about Professorship’s attributes in the 2.0 teaching defined by Pagano. Available at: Pagano data [16].

4. Research results

To provide and strengthen a web page in which students of the subject ‘Information Production’ could always access from anywhere connected to Internet to share any kind of content related to the subject or, simply, to give an opinion about any issue or theme published was the base pillar of the web site creation of the subject in the social network Facebook.

Just as in virtual platforms, and the opposite of what happens in traditional classrooms, students would receive, therefore, 24 hours teaching, apart from the fact that the Production web page would be meddled in its contacts on the Net and its publishing on the wall, whereas virtual platforms demand an expressed intention to access them to check on their contents. By mistake, the main wall was reserved for professors’ publishing (and web site administrators), in a way that students’ contributions would be included in others’ thumb index and we, the professors, were the ones who had got the power – a similar job done by the gatekeeper- to move their publishing to the main wall after checking its relevance and adaptation to the subject philosophy.

We created the web site in the first week of October, 2010, matching with the beginning of the academic year, and we kept it on until late January, 2011, the date when the four-month

period was over. The web site has reached 90 followers (88 students and 2 professors), over which from the total amount of 118 students enrolled in the course, the monitoring has achieved three quarters (74.57%), a percentage even higher than the one referring to students who usually attend present classes.

The typologies of contents published in the web site can be classified into five great sections: 1) links to current issues and with interest from the perspective of the information production; 2) links entailed to information referring to specific contents of the subject as journalism ethics and deontology; 3) advise and notes over the subject development and supporting texts about tasks explained in present classes; 4) reminders of PWP slides used in the classroom; and 5) debates and comments to encourage the participation and interaction with and among students.

Active users have increased from 3 in the very first week to 118 in the last one, the number of followers has reached 90, the number of visits has recorded peaks of 632 scored entries and comments and posts on the wall have the gift of the gab standing at 66.

Students were more integrated in the web site checking, receiving and assessing content in collaboration with their own contributions and comments, which registers certain trend towards the preference for the reception of contents compared to its production, in great tune with a 2.0 user who in some occasions still behaves as a 1.0 user. In the following graphic these data can be noticed in a thorough way:

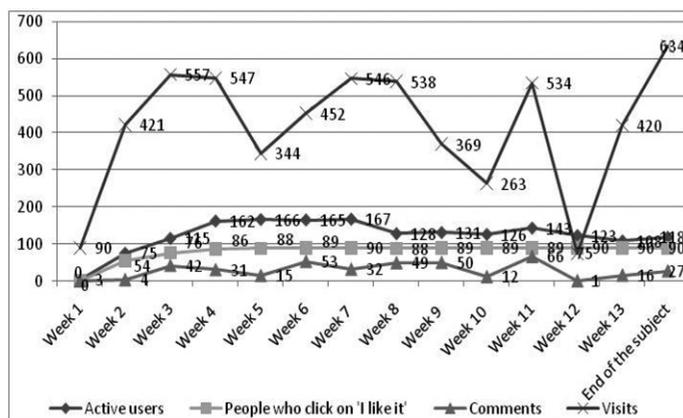


Fig. 2. Our understanding from the Idea about Professorship's attributes in the 2.0 teaching.

From the surveys' results we find out that, although none of the enrolled ones had previously employed Facebook in any other subject of the major, 92.85% of the students have supplied the present teaching of 'Information Production' with the social network web site and that the majority (55.37%) has realized it as a space of reflection and learning. From the ones who haven't employed it, the majority (4.28%) has assured they were not registered in Facebook and only 1.42% has considered that the use of social network would not be appropriate for the teaching.

Therefore, 40% of the students have considered that employing Facebook in the university teaching assumes a way of taking advantage of the new communication spaces, 20% claim that it is a way of making the teaching more integrating and 30.76% that Facebook gathers

those two previous features. More than a half (55.38%) recognize that it has been of such a great use to give them practical examples to understand the subject and, consequently, six of every ten students (61.53%) say that it has come up to be quite useful for subject teaching.

The majority (87.68%) considers that Facebook web site has helped them improve their relationships with professors. Concerning communication habits with them, more than two thirds (67.69%) have claimed that they hadn't lowered their contact with professors through e-mail, whereas more than a half (58.46%) have assured that the number of attendances had not been reduced to present tutorship. However, a quarter of students (24.61%) has recognized that they have never attended to a present tutorship with the professor, which puts in evidence certain lack of attention or probably some kind of generalized lack of interest in the study. The data is a bit more encouraging regarding communication through e-mail, considering that the students who recognize never getting in touch with the professorship through email stand down at 7.69%:

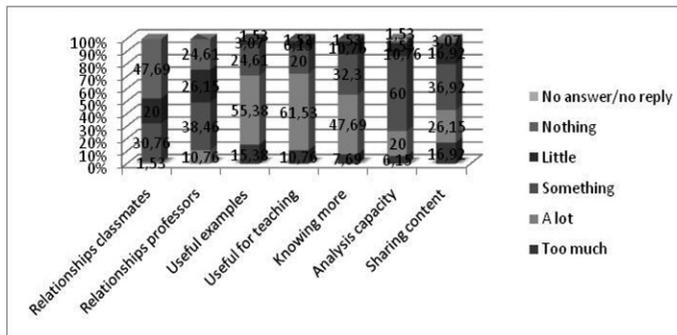


Fig. 3. Our understanding from the Idea about Facebook utility according to pupils.

Three of every four students (73.84%) claim that they prefer Facebook to virtual platforms and, as a result, almost everyone (84.61%) would recommend it to professors of other subjects so that they can employ it as a supply to their present classes. Nevertheless, half of them (50.76%) still prefer photocopies in a paper support to digital files.

In regard with attendance and frequency levels, a third of the students who take part in the social network (36.92%) have assured that they would visit the subject web site every two or three days, as a more intruding query in the usual access they have to Facebook. Otherwise, the fact that they would visit the web site would not assume they would take part in it, because more than a half (56.92%) has confirmed they used to interact every five days, while only 15.38% have assured to do it daily and 21.53% from one to every three days. It is quite surprising that there were only few students who have visited the web site daily (9.23%) and nobody (0%) who has been encouraged to take part in it everyday. On the other hand, the participation is registered in more than half of the cases (56.92%), which at least put together two different modalities of contributions, whether they are of active modality (comments on the wall, links publishing and participation in forums or debates) or passive (to lay stress on contents with "I like" or get in the web page to see contents which were published). Replying to the interactivity assessment developed by students, they stand the average assessment of their classmates' participation on Facebook at 6.81 scores out of 10 (fd-moda 7) and the professors' at 7.43 average scores (fd-moda 8), 0.62 more scores than their classmates'.

5 Conclusion

The pilot experience as a complement to the present teaching with a Web Site on Facebook confirms its relevance and impact on the improvement of the teaching quality and on students' active integration rates both in teaching contents' debates and analysis and adding their own contents as a personal contribution form to collective academic work in the virtual and present classroom.

The research is useful for verifying that the use of social networks was not taken as an encroachment of interpersonal communication spaces and only a 3.07% of the students have considered the initiative as a meddling into the private field. The teaching in the social network implied a widening of teaching hours, a spreading of the classrooms far away from time and space limits and a constant and interactive participation, both of students and professors, and all this in perfect tune with the new parameters defined by the framework of the European Space for Higher Education.

The Web Site on Facebook has improved the rapport among students themselves and also with professors and, in fact, students assured to have upgraded their relationships with the professorship, mainly, in communicative proximity. Taking off doubts would not strictly require the attendance to a present tutorship any more, but tutorship as well as in the classes would remain open 24 hours. The teaching has become cyclical, that is, present classes continued to be on Facebook and contributions on the social network would set up the advance beginning of the following activity in the classroom. The level of entailment and work has grown in number, not only for the student, but also for the professor, who must prepare contents for both different types of classes, yet the advantage is the improvement of teaching quality. The final grades are a proof of this: this year, 90% of the students, who have attended the exams, have approved the subject, one of the most satisfying percentages in years. The legitimacy of the initiative is confirmed in the satisfaction rates: three of every four students (73.84%) would rather social networks than teaching platforms and 84.6% would recommend other professors to include on Facebook their teaching dynamics.

It is important to remark that users consume what they see on the wall, they prefer to consume to create, even though the possibility of "doing it yourself", under the philosophy of edupunk was always open. The ones who wanted to create content could do it and, effectively, the relevant contents were taken to the wall, spread throughout the social network and ended up being consumed by the others. On Facebook, a fifth (19.35%) of the pupils has registered hyperactivity; the majority (41.93%) has oscillated between the explicit and the implicit proactivity of the comment 'I like', and 38.70% remaining have taken part passively or visiting.

The great reception which would be stemmed from the voluntary participation is a referent we've taken into account at the time of selecting the contents which were capable of being passed on through Facebook. Not all things fit in. In order to succeed in its use utilities of the social network must be set right to the subject and not to empty out its contents on the social network. Supplying the traditional/present teaching with a Web site on Facebook assumes that in the communication professor-student (a) the active participation in knowledge transference is encouraged; (b) it is brought about collaboration on equal terms; (c) Debate dynamics, lines of arguments and negotiation are settled; (d) students cooperate by adding in order to learn; (e) several and different sources of information are employed; (f) Processes of self-assessment are encouraged; and (g) new possibilities of assessments based on the reflection and the practical evaluation are introduced. In any case, Facebook is simply a support which does not replace a teaching platform, among other reasons because (a) the material storage is limited; (b) it is open so that, even though not being an administrator, the user can propose themes and add material to be consumed or discussed by their

classmates; (c) it is not provided with tools of personal control of access to the use of the platform or to methods of assessment control; and (d) it does not replace the present teaching in the classroom neither program a compulsory access for the student.

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Social Media: the way from an Informal Process to a Formal Process

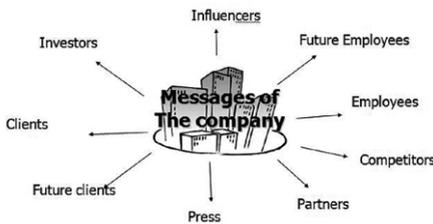
Elena Prodan

University of Bucharest, Romania

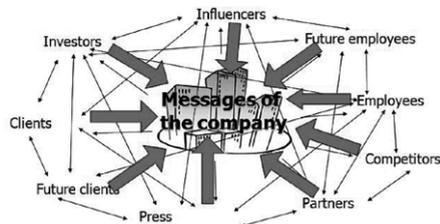
Society and technology have played equally crucial roles in providing a platform for the social networking phenomenon. This has ushered in a shift in mindset that, in turn, has driven people to become actively engaged in generating their own content and sharing it with an international audience on the Web, in contrast to the earlier trend of passively viewing content that others had created. Previously, people viewed the Web mostly as a place of anonymity, but times have changed. People now perceive the Web as a more personal space where they can connect with thousands of other people who have similar interests and share their photographs, videos, and writeups with them.

Social networking websites have been around since the mid-90's, but in recent years, social networking has exploded across the web. With the advent of Web 2.0 technology, the development of content is no longer restricted to the realm of technical writers. On Web sites that support user-generated content, any user can now contribute information, with technical writers transitioning from the dual roles of creators and gatekeepers of information to curators giving them the opportunity to evaluate and fine-tune the information users provide. It means that we are far more able to keep in touch with a wider network of people, help them understand more about what we do and support them in their challenges.

How an organisation communicated before:



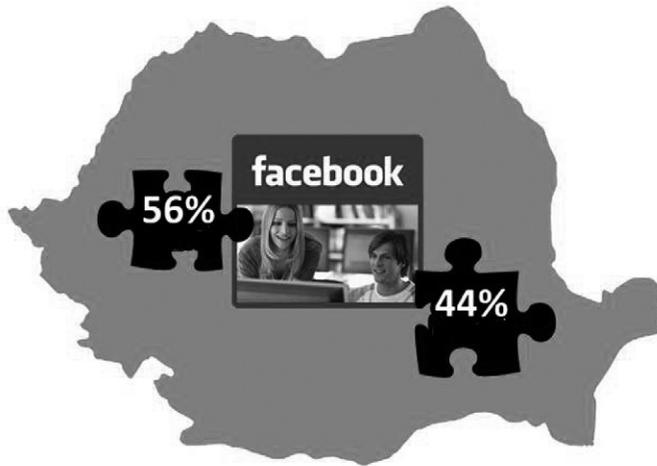
How an organisation communicates now:



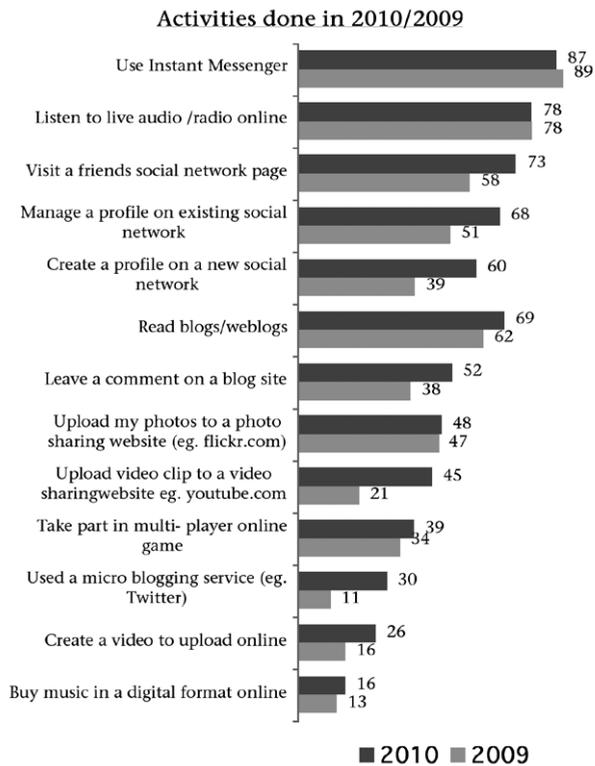
Social Media in Romania

The rapid growth of active online users stimulated the interests of advertisers, especially on social networks where the consumers are more open.

Romania is no 6 in the top of the countries with the fastest growth on Facebook with 120.000.000 DISPLAYS/MONTH.



Continual rise of social media:
Content creation is mainstream



Social media represents an opportunity for continuous interaction and getting constant feedback from consumers.

84% of the companies use Twitter for news	49% of Romanians are using social media	34,000 Romanian twitter accounts
63% of Romanians are using instant messenger	1.6 mil Romanian use Facebook	900,000 Romanians use Neogen
26% of users visit social networks at least once a month	4.7 mil Romanian use Hi5	1 mil Romanians use Netlog

Source: Biz magazine (http://issuu.com/revistabiz/docs/biz_194-m).

Still, people have a lot to learn about how to use social networks effectively for business. For many people, Social Media means simply joining in response to an invitation and then uploading a basic profile. They are not moving much beyond that stage. As businesses understand the value of such networks - the networking can be lifted to a whole new level. From this point of view, another area of change is the move from networking as an informal process which some people engage in more enthusiastically than others to a recognised strategic tool taken seriously by senior management. As more businesses recognise its importance, we should see a wider acceptance of its role in business and planning for its use. What began as a way to keep in touch with friends morphed to open conversations between customers and the people with in organizations.

Social media supplements traditional communication and customer service channels. It provides new opportunities to engage with customers and other stakeholders such as employees, media, donors, board members, etc. Social media channels can be used to support traditional customer care. Social media networks provide easy to use ways for people to become advocates. Social media provides opportunities to have more conversations in more places. It increases brand awareness and understanding about your product, services and company. And all this means public relations tactics and strategies.

Given these circumstances, I consider consistent an analysis of the way social media become a formal process from an informal process concerning the public relations practices, with an emphasis on tactics and social media rules use in campaigns of different brands. The start hypothesis is that the more organizations use social media, the more the organizations obtain reach, achieve a friendly well informed target that knows the organization profile and the organization policy of communication and, nevertheless, the organizations gain customers. The methodology used: both content and campaign analysis on two projects. I analysed

three campaigns made in Romania: Tnuva Yoplait facebook campaign from 2010, Petrom campaigns that involved bloggers and social media and Microsoft twitter campaign from 2010.

A recent attempt to systematically compare formal and informal groupings and their impact on the levels of role ambiguity found more similarities than differences and suggested a complex set of contingencies in which one or the other would have the most impact on organizational variables (Hartman & Johnson, 1990). A formal structure identifies individuals who are the official sources of information and the information that is their special concern. This has been the traditional view of managers and professional business communicators. Since relationships are determined by one's role, structure is viewed by managers as a static entity which conforms to a top down configuration (Monge & Eisenberg, 1987). This perspective, which has been termed the configurational view, emphasizes the authoritative coordination of work in the service of stated organizational objectives (Dow, 1988). Recent reviews suggest that formal approaches focus on the configurations resulting from formal authority relationships represented in the organizational hierarchy (Dow, 1988; Jablin, 1987), from differentiation of labor into specialized tasks (Dow, 1988; Jablin, 1987), and from formal mechanisms for coordination of work (Dow, 1988). These characteristics, along with the notion of goal or purpose, have been seen by Schein (1965) as representing the very essence of an organization. On the other hand, informal approaches recognize that a variety of needs, including social ones, underlie communication in organizations and that, as a result, the actual communication relationships in an organization may be less rational than formal systems (Johnson, 1993). Informal structures function to facilitate communication, maintain cohesiveness in the organization as a whole, and maintain a sense of personal integrity or autonomy (Smelser, 1963). The coactivational perspective recognizes that communication relationships are not solely based on the positions individuals occupy within formal organizations. Informal groups often arise out of a combination of human needs and formal factors (Schein, 1965). For example, increasingly business communicators have focused on the role of informal communication in generating innovations within organizations (Johnson, 1990).

So there is an important distinction to be made then between formally structured and organized social relations, and informally structured relations. In open social media spaces, sociality emerges around informal relations that may become increasingly formalized, as social differentiation and complexity develop over time. (Twitter lists are a direct example of this: it took three years for the soft and informal emergence of groups referenced by tweeting practices like #FF to become architecturally formalized as a list feature.) In closed social spaces, the formal sociality organized by workplace relations and job functions stands to benefit from the know how (information, knowledge) and communicative practices of informal social practices (<http://www.gravity7.com/blog/media/2010/01/social-media-in-enterprise-formal-v.html#ixzz11UKujrQO>).

In Romania several examples of campaigns that happened in 2010 sustain that the informal became formal when we are talking about the interaction of different organizations and brands with social media.

In 2010, Petrom supported a road trip through the country that involves a number of bloggers who were passionate about travelling, in an action coordinated by Bobby Voicu (very well known blogger from Romania <http://www.bobbyvoicu.ro/>). The action "Rediscover Romania" includes four trips throughout the summer, for five days, in every historic area (Moldavia, Transylvania, Muntenia and Dobrogea), by the end of August. The campaign

was coordinated by the agency iLeo.

Dove has recently initiated a live conference on Facebook about the skin beauty and care, having a dermatologist as a guest. The initiative was led by the agency StandOut.

Microsoft has released the first volume written on twitter "How I first entered the net". The online book is the first example of Romanian "Twitterature" (Twitter + Literature) and includes the stories created online through their personal Twitter account by 127 users. The project was developed by McCann PR with the support of Iulian Comanescu (very well known and appreciated blogger from Romania <http://www.comanescu.ro/>).

Sony Ericsson and Vodafone have organized a blog trip to the Football Championship in South Africa. Costin Cocioaba (<http://costin.ro/>) and Dorombach Cristi (<http://www.piticu.ro/>) participated in the great competition for a week, trying to capture the atmosphere using their Vivaz mobiles and Vodafone's mobile communications services.

Also in 2010, iLeo launches the first campaign of the year under the concept "five minutes of pleasure". This campaign suggested to the ladies to participate in the first online shopping with product codes / gained points instead of money. For five weeks, every Friday at five minutes after five in the afternoon, Yoplait opened the shop where anyone that has 10 points collected under her profile and 5 minutes at her disposal to choose anything she wants from the store, following the first-come, first served principle.

"By trying to provide a new and relevant experience related to one of the greatest pleasures of women, namely shopping, we have created a concept proposal that is both close to the brand proposal (short intense pleasure) and to the Internet usage patterns (online stores)", says Anda Lazar, Director of Brand Comm iLeo (http://digital.iqads.ro/importanta-componentei-de-facebook-pentru-promotia-yoplait-cinci-minute-de-placere_12213.html).

The campaign started with a teaser on Facebook in which girls were invited to tag some photos representing promotion prizes. Following this action, each person was receiving a bonus code subsequently adding a point to the profile. These people were the first ones invited to create their profile and enter the promotion while opening the site www.5minutedeplacere.ro for the first time. Following the moment of campaign initiation on the site, Facebook turned up into a support and spreading environment of the campaign proposal.

Accomplishing this campaign started from the idea of turning a normal promotion with proof of purchase into an attractive and relevant concept to the target and the online environment. Further on, the challenges have continued with choosing some fresh products (awards), to match this proposal and creating the virtual shop and the mechanics of "buying".

"Yoplait is a brand that provides moments of pleasure not only through taste and quality, but also through the innovative and surprising way that it addresses and reaches its consumers. The way in which they have received so far this campaign, and the assessments already received from specialists in online marketing and not only confirms us that this campaign strategy and tactics are well suited to the expectations, but also the demands of our target" Adriana Ionescu, Marketing Director Tnuva Romania (http://digital.iqads.ro/yoplait-si-ileo-ofera-5-minute-de-placere_12215.html).

The team that was involved in this campaign was formed by:

Tnuva: Adriana Ionescu (Director de Marketing), Mihail Neculai (Research si Online Communication Manager)

iLeo: Strategy: Elena Ionita, Media: Cosmin Nastasa; Client Service: Anda Lazar; Creation: Codrut Alexoia, Andreea Mitea, Development: Dominic Timotin and Emil Gheorghe.

iLeo is a full service interactive agency, part of the Leo Burnett group. The company offers a complete product ranging from strategy, creative, unconventional promoting and growth in these environments and develops communication campaigns over digital or virtual environments, aimed mainly at expanding the brand message over emerging media, like the web, mobile telephony or custom contact.

Last year, Petrom and four teams of bloggers have covered 6000 km over three months, resulting in a map with over 800 recommendations for places to visit in Romania. This campaign obtained The Internetics prize in the categories "Best Use of Social Media" and "Interactive Campaigns - Corporate category" European Excellence Awards nomination in the category "Energy", RoNewMedia award for Best Campaign in Social Media "and" User Generated Content".

Based on its own available national coverage, Petrom has decided to remain true to their values and to solve a problem ignored for long time: internal tourism in Romania. Petrom has proposed to provide a long-term tourism resource and prove that Romanian tourism is not just the Black Sea, Prahova Valley and that we have to rediscover the beautiful places in the country. Petrom decided in 2010 to make the first move and put Romania on the map of tourist destinations. All Internet users aged between 18 and 45 years, open-minded, who appreciate the sights, history, Romanian traditions and values were considered to be the target of this campaign. Petrom map was created, on which registered users could set sites, accompanied by a brief description and photo. Throughout the entire campaign a context was created through which the brand has been associated with values such as caring for the state of Romanian tourism, for the people and beautiful places in Romania. Influential bloggers from Romanian online were involved in the campaign, and they took part in four trips to the major geographical areas of the country: Moldova, Transylvania, Banat, Oltenia and Dobrogea. Social networks were used to communicate the route, goals and stories of each trip. Bobby Voicu was involved in carrying out the campaign as opinion leader and online influencer. Bobby Voicu has focused the efforts of this campaign on his blog and actively participated in the ongoing of the campaign.

Petrom's Twitter account was used, "La Drum In Romania" account in order to stimulate the discussions about the mentioned trips and an iPhone app was created, downloaded so far by 9765 Romanians, which contains the objectives map. The excursions in which the bloggers were involved have generated articles on blogs. Together with the communication inside the social networks have created buzz and interest in the subject of the campaign – internal/domestic tourism. A site dedicated to the campaign was created, a map which has stimulated the interactivity with the Internet users, and also special skins for websites, blogs and social networks. Also, a banner was especially created with Twitter feed having the hashtag #prin-Romania. (http://digital.iqads.ro/campania-petrom-redescopera-romania-cea-mai-vizibila-campanie-social-media-din-2010_12559.html).

The hashtag #prinRomania became the most used hashtag in Romania over three months, with more than 6,000 mentions, and the coverage of direct communication (through social media) has largely exceeded 200,000 persons. More than 50,000 unique visitors to the site of the campaign were registered. Rediscover Romania was the most visible social media campaign in 2010, developed exclusively online, which involved tourism in Romania.

Another successful campaign from 2010 involved Microsoft Romania and the agency McCann PR. Together they launched the online book "How I first entered the net", a book written on Twitter by 127 authors. The online book is the first example of Romanian "Twit-

terature" (Twitter + Literature) and includes the stories created online through their personal Twitter account by the users.

Eight of the most followed romanians on Twitter have started this project and were actively involved in creating the stories: Arhi (<http://www.arhiblog.ro/>), Bobby Voicu (<http://www.bobbyvoicu.ro/>), Florin Grozea (www.floringrozea.com), Manafu (manafu.blogspot.com/), Piticu (piticu.ro), Pyuric (pyuric.blogspot.com/), Victor Kapra (www.victorkapra.ro/), Vis Urat (www.visurat.ro/), together with the Twitter account of Microsoft Romania (twitter.com/romicrosoft).

For two weeks, anyone using Twitter could have responded to this initiative and write in eight tweets their personal experience of the first use of the Internet. The coordinator of this project was Iulian Comanescu, who, along with McCann PR team, structured the stories and wrote the preface and a short text on the history of Internet Explorer, and the illustrations were made by Matei Branea.

Tudor Galos, Windows Business Group Lead, Microsoft Romania: "The project started from the conviction that to change the perceptions, the users have to remember their first experience on the Internet and the first used browser. This is why this initiative was born, by which any Twitter user could help writing the book. (http://digital.iqads.ro/microsoft-romania-si-mccann-pr-lanseaza-cum-am-intrat-prima-oara-pe-net_12390.html).

"How I first entered the net" is one of the successful Romanian projects on Twitter. Standing proofs are the results obtained so far and the buzz created around the idea. #tweetIE8, the hashtag added for every tweet, was three times number one, according to www.agregator.ro. Besides the 8 famous Romanians on Twitter, which have started the campaign, other renowned names in the online environment were involved (journalists, VIPs, famous bloggers, media people, IT professionals etc.). Finally, 1105 tweets were recorded on this subject and 217 authors that have responded to the initiative. Out of these, 127 authors were included in the final document.

Microsoft was the brand that gain a lot visibility with another campaign. To communicate the benefits of the Internet Explorer 8 browser, Microsoft Romania, Romania MRM and McCann PR have launched the campaign "Journey to the Center of the Internet" according to a Microsoft bulletin.

MRM Romania created the www.explore8.ro website, where one can easily find the weekly clues that users need to reach the center of the Internet and win by default, the prize of 10,000 Euros. These clues lead to finding some codes on the sites: jocuri.rol.ro, trilulilu.ro, computergames.ro, emag.ro, softpedia.com, regielive.ro.

McCann PR tactics created the following communication tactics: a virtual card which will contain short stories about the experience of using the Internet for the first time and the Internet Explorer browser, every story written in 8 tweets; a campaign on blogs; a cartoon that presents the IE8 benefits through the character Tudorica, launched last year, together with the release of Windows 7.

Tudor Galos (Windows Business Group Lead, Microsoft Romania) said: "Through this campaign we want to convince the Internet users to use Internet Explorer 8, the safest browser in the world, as proved by a NSS Labs study, in order to safely navigate on the web and benefit from the experience of the latest browser facilities, allowing them to achieve their objectives through fewer clicks. (http://digital.iqads.ro/campania-calatorie-spre-centrul-internetului-pentru-ie8-a-fost-realizata-de-microsoft-mrm-romania-si-mccann-pr_12339.html).

Using, for instance, web slices, such as the one form partner Realitatea.Net, they could find news and updates in the browser without leaving the page in which they work.

The team that has worked for this campaign was formed by: from Microsoft Romania: Bogdan Tataru (Central Marketing Group Manager), Tudor Galos (Windows Business Group Lead); from MRM Romania: Atena Chiper (Account Manager), Cristiana Florea (Copywriter), Daniel Florea (ASP Developer), Mihai Caluseriu (Senior New Media Creative); from McCann PR: Delia Margarit (Account Manager, Tech Practice), Veronica Nicolae (Head of Tech Practice), Alexandra Armeanca (Account Executive).

Based on the campaigns analyzed above, we can discuss several factors for a successful brand communication in Web 2.0.

Strategic planning. A proactive planning is as crucial for communicating in Web 2.0 as it is for all other measures in a multi channel strategy. In order to obtain an optimal penetration of a brand message one must first take into account the strengths of all channels. A blog is usually more powerful through the editorial items than a Facebook fan page, which focuses on short information and can be driven towards a blog content. The basic question that a company definitely needs to ask itself before starting a campaign is: What message, and what topic should be aired on the channel and how much? Finally, it is important to connect the available channels in an optimal way to shape a consistent and persuasive communication.

Social Media Monitoring. The control cannot be given up! The brand integrity can only be protected with an early integrated and consistently pursued monitoring of the social environments. Only those who know both the friend's and enemy's mood has a chance to react appropriately. The communication demands towards monitoring in this case are multiple: On what platforms the customers often go? What issues are moving the blogosphere?

"Launch & Learn". Credibility and authenticity are key qualifications in order to enter a successful dialogue. Community mercilessly decides whether the communication offers catch or fall. "Relevance" and "emotivity" have great influence on the success of communication. Communication must be close to the customer needs and feel the utility of the product that is indeed important for the community. This can be done today for tomorrow - understanding and trust must be developed.

Existing contacts have to be maintained. A web 2.0 brand communication should also take into account the fact that a hardly built and driven community needs information and offers too after the campaign itself.

Resource Planning. Who believes that a brand communication in Web 2.0 is primarily an advantageous alternative to traditional forms of advertising is definitely wrong. The target group own dynamics makes the communication control become expensive, thus having repercussions for using the web as a platform for advertising. The advertiser pays the high claims made on the dynamics and boosted labor flexibility. Who wants to awaken attention by using cheap viral avalanche type spots and effectively maintain the idea of brand, will receive a painful lesson from reality. But: who controls the proper handling of Web 2.0, so brave and open and not disregard the basic rules, can obtain besides pleasure very positive impulses for its work.

Other characteristics of the social media communication can be observed. Contexts and social groups mix online. Any message can be viewed by anyone. A message for the intended audience A can be seen and interpreted differently, or negative, by the audience B. When we communicate, we usually have in mind a specific audience to whom the message is intended. When we are communicating online, we have to make an extra effort to think about other

audiences, unintended, and how the message might look in their eyes. Online communication requires a higher level of effort and self-censorship than offline communication. Unfortunately, online culture is a culture of speed, and it takes more effort to resist the pressure to press the Send / Post button before we even had thought for a second. So the first question should be: How will a future chief/mother in law perceive this message? How will I feel if this message would appear on the news tonight?

The online environment provides an opportunity to strategically build a self. We have much more control over the way we present ourselves, than in offline communication. We can make careful selections and we can build a positive and complex identity. Related to the above mentioned is the fact that we have absolutely no control over the online information about us. Information can be found and survive long after we (think that we) have destroyed it. As they say, "Google never forgets." It is also possible for friends and acquaintances to share potentially negative information about us, even in the form of comments on Facebook or Twitter, which currently seem funny at the time. On the other side, it is important to take care how you communicate. The organizations must be (even) more compassionate, (and) more human in addressing, language and claims. Common sense also helps. The ability to generate real conversation, to initiate topics of discussion in online is an important challenge. A challenge would be to understand the online's specific technical means, to select the most suitable for the goals to achieve and to use them properly. Because, yes, not every brand should create a Facebook account.

We can conclude that informal networks develop in diverse spaces. We develop connections in informal situations, but also at work, within communities, and within a variety of formal structures. Formal structures usually involve a chain of authority and communication in an organizational setting (Marshall, 1998). They are traditionally characterized as static, prescriptive, hierarchical, bound by rules, process, and order, and based on formalized roles and responsibilities. In contrast, informal systems are seen as characterized by dynamism, responsiveness, spontaneity, flexibility, fluidity, complexity, trust, and reciprocity.

Traditional organizational forms are also changing, as social media technologies enable movement from static, hierarchical, and process-driven institutions to informal forms of collaboration on a range of issues (Shirky, 2005). Further, formal organizations are recognizing the limits of silos and hierarchical approaches to addressing complex challenges, and are moving toward more horizontal and collaborative mechanisms. These trends blur boundaries between and within formal and informal entities.

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Collaborative animation: possible solutions for Animation production

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Introduction

The Animation is a cinematographic art of infinite possibilities, which allows the filmmaker to give life to any creation of his imagination. Unlike live action movies, whose essence is already based on the use of direct shot taken by the camera, Animation Movies don't need to have any link with the material world, since each of its frame is made following the ingenuity of the authors.

However, the main "advantage" of Animation in comparison to movies with actors is also its biggest obstacle to the accomplishment of medium and long term works. The need of creating movement frame by frame, rather than using automatic sequential shots, as in movies, turns the animator's work longstanding and specialized, which demands large teams of qualified professionals and long production periods, turning the movies accomplishments into something even more expensive, becoming a burden in an increasingly competitive market. Besides, accelerating this production (with more and better professionals, for example) turns production more onerous.

Considering that the competition with developed countries (with an audio-visual long-established industry) and the difficulty of getting into the exhibition market disadvantages the high-quality animation's large-scale productions in developing countries, it is unrealistic to expect that the latter are able to reverse this situation applying the same production methods always used by long-established studios. It is necessary to seek alternatives truly viable and intelligent, which do not compromise the technical quality of the work, the creativity of the involved in the production and subsequent profitability of the projects.

In Brazil, we can affirm, through an evaluation of movies and animation series ongoing in the country, that a solid industrial philosophy of animation production and an applied professionalism, already current in other international markets, is missing. The lack of professional training in the market is also an obstacle for all kinds of production processes, with major impact on bigger scale productions.

This work aims to study the model of *Collaborative Animation*, production process where a mass of individuals gather strength in detriment of solving a problem or achieving a common goal. Therefore, we performed two different studies of successful cases in which this production model was applied: the movies *Big Buck Bunny* (2008) and *Live Music* (2009). Such cases illustrate the concept of cooperative economics applied to the animation industry. The movies show us that you can dare in market with low budgets without, however, compromising the quality and profitability of the production, making possible its realization in a equal or

even smaller deadline than the productions coming from conventional models.

A brief definition of a collaborative production process can be understood as the classic opening line of production. That is, the production is not restricted only to the team that has planned it, but it will transcend the walls of the studio and have a global reach, allowing any number of professionals to have access to the project and be able to, in some way, collaborate with it, either contributing with ideas or through the work process. The expected result of this method is the realization of low-budget films more elaborated and a faster production. This is the basic premise of any process of collaborative production. The results, in some cases, are of technical, aesthetics and script quality comparable to works of established studios like Disney Animation and PDI / Dreamworks.

The idea of a collaborative production came from the concept of *collaborative economy*, the result of the so-called *information society*. This concept became evident with the deepening of relationships brought by new forms of communication, in which the Internet has assumed an important role. In 2007, Don Tapscott and Anthony D. Williams structured this model and published the first work about collaborative economy in the information society. This work was the inspiration for several experimental initiatives in diverse areas in which it seemed possible to implement the system proposed by Tapscott and Williams. This new philosophy also came to Movies and Animation, beginning in 2006, when we began to see the first collaborative projects getting out of the paper and facing the challenge of collaborative production.

The appliance of this production model in developing countries industries, as Brazil's, would enable: a reorganization of the elements that compose it; the solution of lack of local professional training problem (after all, the motion now is to be global) and the national industry equivalence to international established studios. It is an initiative that could move Brazil's economy, generating new professionals to the emerging collaborative market, the end of the cinema dependence of public funds in the country, the technical exchange between artists and professionals and the quick inclusion of amateur artists inside the industry.

McLuhan's ideas and the modern

The village is a kind of pre-urban grouping in which nobody is a stranger and all acts and facts are instantly known by everyone (McLuhan, 1969:14).

Despite Marshall McLuhan had not seen the birth of the Internet for ordinary people, he had already predicted that the world was heading towards the communication immediacy and volume integration of information without precedent.

When the author discusses about man being conditioning by technology, he already envisioned the beginning of a great dependence on technical systems (electronic and digital) and that these systems would be the modern man extensions. In his opinion, the technology would reinvent society, changing paradigms and perceptions of everyday life. However, he criticized the man use of new technologies, when he affirms that "We imposed the old ways to the new content. And the illness remains" (*id.*, 114). That is, there is no point on technological developments if there isn't at the same time a paradigmatic change on the thinking of who coordinates it. This idea is later strengthened, at the same text, in which McLuhan writes "Our official culture endeavors to force the new ways to do the old work" (*id.*, 122).

McLuhan defends that the copyright (as we know today) began after the print technology advent. It eliminated the anonymity, encouraged the idea of literary fame and of considering the intellectual efforts as private property. And the mechanical multiplication of these texts created the public. This is a very interesting idea for this article, since the collaborative animation directly involves the collective work copyright problem. And this copyright model currently in effect does not dialogue in sync with the collaborative economy philosophy.

Another quite appropriate idea to this article theme is when McLuhan quotes: "... Now with the TV and folk songs, thinking and acting are closer from each other and the social commitment is greater. Now we live again in a village" (*id.*, 185). This "village" that McLuhan often mentions in his texts is exactly the basis of the collaborative ideas that drives this article. As can be seen below, there are four concepts that guide this new philosophy, and all of them can show us how simple moves, thought and implemented together, can change the world.

Collaborative Animation

In the scheme of cooperation, the real advantage of global supply is not cost savings, but the endless possibilities for growth, innovation and diversity (Tapscott, 2007:80).

Collaborative Economics (also known as open production, wikinomics, crowdsourced economy or mass collaboration) is a concept that defines a method of production in which a mass of individuals join forces in detriment of solving a problem or achieving a common goal. It is an powerful and self-organized amount of efforts that achieves the prowess of solving problems faster, with more creativity, and lower costs than a closed team focused only for that purpose. The power is in the collectivity - free, with a determined motivation and guided by a clear goal.

The new collaboration promise is that with peer production we will explore the capacity, ingenuity and human intelligence more efficiently and effectively than any other thing that we have ever witnessed. It seems a very difficult task, but the knowledge, skills and collective resources together in broad horizontal networks of participants can be mobilized to accomplish much more than a single company acting alone would be capable (Tapscott, 2007:29-30).

The collaborative economy is based on four key ideas: Opening, Peering, Sharing, and global action. To illustrate, we can imagine a company that provides its specifications publicly, through a contest worth a cash prize, expecting to find solutions for certain problems of its products. By providing the specifications of its product publicly, this company opens its intellectual property to the world. That would be the Opening, as the company presents itself to be open and receptive to new solutions of people outside the company. This would be the first step to break their boundaries and limitations, seeking innovation with agility and profitability.

Creating the contest, setting goals and a reward, the company enabled the generation of a self-organized Peering, which is exactly an association of people working together in different parts of the world to solve various problems of the same project. In the words of Tapscott (2007:89):

Peering is a way of producing goods and services that relies entirely on self-organized communities and equal individuals who voluntarily join together to produce a shared outcome. Peering blends elements of hierarchy and self-organization and depends on meritocratic principles of organization, i.e. the most skilled and experienced members to provide leadership and help integrate community contributions. (...) Uses the peer volunteer motivations in a way that helps to allocate the right person for right job more efficiently than traditional firms. The reason is self-selection.

Each participant, with his/her capacity, can offer great help to solve these problems. The Sharing occurs among those associated persons and the company itself, when they exchange information relevant to the solution of the problem. As the communication is open, everyone can talk with everyone, including senior officials of the company, which allows the construction of a horizontal production, in which everyone can be heard equally and freely. Finally, the old precept "think globally and act locally" is meaningless in this new reality, being replaced by thinking globally and acting globally. Global action would be the fourth concept of collaborative economy. Companies that insist on doing business locally, either for convenience or legacy processes, end up limiting all the creation power and effectiveness of its operations. The Internet is proving to be the great revolution of mass collaboration. Social networks becoming more dynamic, focused and collaborative, approaching people with similar interests around the world. The Internet offers powerful tools for both individual and collective work, even allowing several people to work simultaneously on a given problem from anywhere on the planet.

The collaborative economy reached a high notoriety with the advent of Web 2.0. The term was created in 2004 by the journalist Tim O'Reilly to describe the second generation of the *World Wide Web*, a generation in which the web started to be faced as a platform, allowing a deep interaction among its users. Collaboration among users has become a constant, through tools like blogs, wikis, forums, social networks etc.

The concept of mass collaboration has been studied in depth by the researchers Don Tapscott and Anthony D. Williams and published in the book "Wikinomics". Other books permeate the subject, such as "Digital Economy", by Don Tapscott, "The Long Tail", by Chris Anderson, "The Wisdom of Crowds", by James Surowiecki and "Crowdsourcing: why the power of the crowd is driving the future of business", by Jeff Howe. In all these works, however, the benchmark is the knowledge market, information technology, computing and internet. We can also see some cases of collaborative economy application in other sectors, such as the automobilist, the phonograph, the aviation market, technical services etc.. In this paper we check the feasibility of applying this concept in the production of animation works.

Collaborative Economy on Animation Business

And the Oscar for the best animated short film goes to... an Internet community?
(*The New York Times*, 15 jul. 2009).

It is hardly possible to find concepts as collaborative production in the animation industry. Even nowadays, most of animation studios follows the model of production assembly

line originally developed in the studios of animators like John Randolph Bray in the 1910s, inspired by models of industrial management as *Taylorism*, *Fordism* and the specialized division of tasks. Some rare studios that subverted this linear process (but not completely broke with it), as the north-american Pixar, have nowadays the best results in terms of critics and box office.

By creating a bridge between the conventional process and the idea of collaborative production, we can see bright opportunities to optimize the production in this industry. Let's imagine the four central sections of the collaborative economy being applied in an animation project:

1. Opening - The studio opens a public argument, the script or some structure of the original idea for the film. In making this opening, the studio allows anyone to collaborate on the project.
2. Peering - This is the definition of who is going to enter as the project developer. At this stage, a self-organized structure is naturally formed and everybody involved work together in different stages of the project. At this point we enter directly into the production of an animation work, in which is going to be developed the design of characters, objects and scenarios, dubbing, animation planning, layout of the scenes, modeling, texturing, rigging, rendering (if it is a 3D animation), etc. .
3. Sharing - Occurs during the entire process since the formation of peering. The exchange of information and knowledge among collaborators and studio provides great dynamism in the creative process, besides speeding up the production, which proves itself very effective and decentralized, taking advantage compared to conventional production. The Sharing is realized through communication tools, online production platforms or through the popular social networks.
4. Global Action - When expanding the boundaries of its production design by Web 2.0, the studio will no longer be working locally, but employing in favor of its cause all the strength and ability of people interested in the project anywhere on the planet.

In order to verify the four concepts and possible solutions in making a collaborative film animation, we are going to analyze two examples of projects that have yielded great results and achieved international recognition - the shorts *Live Music* and *Big Buck Bunny*. In both cases, the production processes converge with the ideas of the model we are proposing of *crowdsourced animation*.

Case study: Live Music

Peering is emerging as an alternative model of production that can exploit the ability, ingenuity and human intelligence more effectively and efficiently than traditional firms (Tapscott, 2007:88).

Live Music is an animated short film released in 2009 by the startup company Mass Animation, produced by Yair Landau (who also directed the film) and the multinational Intel. It was also supported by companies like Sony Pictures, Autodesk, Dell Computers and others. The 5-minute video took six months to be produced and cost a million dollars. This is a work

done with computer graphics, whose screenplay is inspired by William Shakespeare's "Romeo and Juliet". The setting is a music shop, the characters are musical instruments, which communicate only through their body and musical language, which establishes the universal understanding of the screenplay. But how was the production process of this movie and what makes it so special?

The company organized a Mass Animation community in Facebook, in which was developed an exclusive application (app) for the process of organizing the production of the animation film. The Mass Animation was the author of the script and storyboard, in which employees did not interfere. The innovation in the work of this project began when the company "broke" the film in 107 different plans. Packages have been created with individual files for each of these plans, containing the suggested equipment, instructions from the direction of animation etc.. These packages were made available by the application on Facebook.



Fig. 1 and 2 – Images from the movie Live Music (2009). Disclosure.

Then, the Mass Animation published a statement, calling artists from all over the world to join the project. From the application on Facebook, the animators were able to download the individual plans they wish to animate. The software used for the animations was Autodesk Maya. At Facebook, the animators could submit their questions about what needed to be done in each plan. The Mass Animation monitored this "forum" daily, answering any questions.

After concluding his part in the animation, the animator would *upload* his chosen plan, and it would become available within the application to be viewed, commented and voted by the user community.

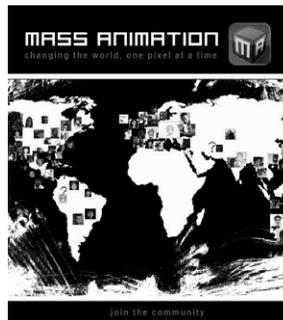


Fig. 3 – The image on the homepage of Mass Animation on Facebook seeks to value the participation of contributors from around the world.

Finally, all plans were reviewed and an specialized jury, composed of experts in the animation world, would chose the best version of each plan to be included in the final cut of the film. All through interactions within the oficial community project in Facebook²⁴¹.

As director, Landau had the final decision in the cuts. All artists who, somehow, had his/her work used in the final version of the film were mentioned in the credits and received a cash reward offered by Dell and Intel. This reward has reached \$ 500 and was paid to 51 animators, from 17 different countries.

All these animators who had their work chosen were able to count on the support of a business project partner - Pipeline, a special effects software developer - in order to improve plans and leave them ready for the film, employing Pipeline's own tools. When asked about the occurrence of problems during the production of Live Music, Mass Animation affirmed that no creation problem had happened. After the conclusion of the project, the animators evaluated the online work platform (the Mass Animation app on Facebook) and concluded that he met with excellence the project goals. Some left suggestions for improvement, for example, creating a discussion board attached to each plan inserted in the application. This suggestion, for example, was considered by Mass Animation and added to the application in use for the second collaborative project of the company's Animation: A trailer for DC Universe, from Warner Brothers.

Specific problems in the animation production were administered by animators in the discussion forums on Facebook. They shared their concerns and difficulties with Mass Animation, which shared the changes made to meet the animators. All of this interaction occurred in an open and public environment so that everyone could see the issues raised, solutions found and opine about.

We also asked how the issue of copyright was handled, since the process was collaborative. In the project Live Music, all rights were reserved to the company Mass Animation. The animators who had their plans chosen and used in the movie received the reward in money and credit as the film's animators.

Thus, it is clear that the Live Music animation project was open and collaborative. But regarding the question of authorship, the project was not as liberal as it sounds. At the same time that the employees were paid for their work, they also lost their right to share the film's authorship, the latter being only reserved to Mass Animation.

Even if this project did not applied 100% the concept of mass collaboration, we can not ignore the audacity of this company to carry out such an initiative. And the resulting work of the project was so successful at festivals and on the market that led Mass Animation to start immediately other projects that use the same method of collaborative production as used in Live Music.

Blender and The Big Buck Bunny

Collectivism involves correction and centralized control, collective action involves freely chosen self-selection and coordination distributed. (Tapscott, 2007:28).

For the presentation of the second case study, it is necessary, first of all, to know the

organization behind the idealization of the work discussed: the Blender Institute. It is a subsidiary of Blender Foundation - a nonprofit organization founded in Holland in 2002 by Ton Roosendaal. The foundation is dedicated to the development of the Blender, a free three-dimensional modeling software. It aims to develop 3D solutions (besides the aforementioned Blender) for independent artists and small groups of digital artists.

To begin operations, the foundation counted on an investment of 100 thousand euros. Currently, the main source of funds of the foundation lies on the marketing of DVDs and textbooks about their tools. It also includes the income from advertisers, trainings, seminars, documentations and others. The diagram below illustrates the business model of the Blender Foundation.

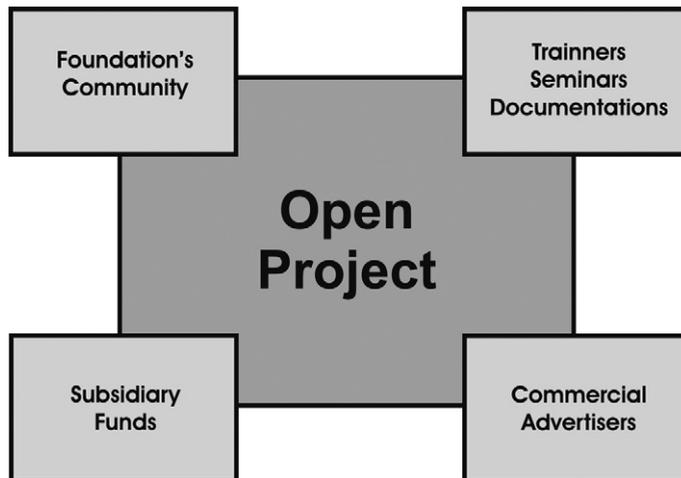


Fig. 4 - Functional diagram of the Blender Foundation.

Coordinating all the projects in progress and its documentation is Blender Foundation's responsibility. And everything is done online.

In 2005, Roosendaal decided to launch a new experiment encouraging the interaction of various artists with the Blender software. For that, he founded the Blender Institute, making this an initiative for the production of short films and open source 3D electronic games, using always Blender and other free software. When we talk about short films and open source games, we mean that the production line of these activities are open, that is, all process steps are recorded and published in the community, making possible the participation of all technicians and digital artists in virtually all the project processes.

The first initiative of Ton Roosendaal inside Blender Institute was the animated short film project *Elephants Dream*, which started on September of 2005 and released on March of 2006. The collaborative production made possible the realization of an animated short film with a complexity level of scenarios and characters that impresses in just six months. *Elephants Dream* was the first free animation world, a landmark in the history of animated cinema.



Fig. 5 - Picture the movie *Elephants Dream* (2006). Disclosure.

Due to the success and impact of its first project, the Blender Institute has launched its second open project, initially called *The Peach Open Movie Project*. The result of this project, initiated on October of 2007, was the animated short *The Big Buck Bunny*, released on April of 2008. The Institute continues today to develop animation film projects and 3D games. In this paper, however, we will focus our analysis on *The Big Buck Bunny*.

Unlike Hollywood, where animations made by Disney, Pixar, Dreamworks and Fox just leave the paper with a million-dollar investment, the Blender Institute has produced *The Big Buck Bunny* with only 150 thousand euros and in only six months of production. The team responsible for the project consisted of seven people who coordinated all stages of the process directly from the Blender Foundation studio in Netherlands. This team provided all the documentation generated by the official Blender community, where members were free to access these files, interact with the production team, propose solutions and provide any other assistance.

The rendering of the film was made by *Sun Grid* service, from Sun Microsystems. In this service you can buy time for your systems, paying a dollar for each rendering hour. In support, the Sun has donated 50,000 hours to the Blender Institute, which was enough to finish the short. Besides, the soundtrack of the film was offered by the community of artists who support the Blender Foundation's initiative and made available for free use, not only in the film, but also in non-commercial projects of others.



Fig. 6 – An image from the movie *Big Buck Bunny* (2008).

After the film's official release in 2008, all the documentation generated by the project was released on the official website of the Blender Foundation, in a final format, aiming to guide other artists who want to develop their 3D animations using Blender software. Yet when it comes to copyright issues, *The Big Buck Bunny* is a movie to be watched freely, displayed and distributed anywhere. On the animation's official website, the viewer can download the movie in different formats, and also have access to support materials and all documentation related to the project. Both work and process documentation are licensed under Creative Commons, which means that everyone has the right to access, distribute and enhance this content. *The Big Buck Bunny*'s design really links collaborative economy differently than Live Music. While the short of the Mass Animation uses more directly the strength of crowdsourced, rewarding the artists in cash with the best results and detaining all copyrighted work, the project created by Ton Roosendaal follows a more liberal path, really using a community of artists who have the motivation to improve the Blender animation software, but leaving them free to contribute with whatever they want without financial rewards. The Blender Foundation community collaborators reward is to see the Blender software each time even better. After all, for being open and free, this software is the working tool of most of them. The Blender Foundation completely releases and stimulates its distribution, exhibition and access to the documentation to aid in other animation projects, while Live Music is the owner, that is, its collaborators do not have any rights over the work.

Brazilian initiatives with crowdfunding

Crowdfunding is a variant of the concept of collaborative economy. In Brazil, have arrived on the market some collaborative initiatives in small businesses, which allow individuals or companies to finance their projects through collective donations.

The premise is quite simple: the idea's author presents his proposal in an online platform and says how much he wants to accumulate. Through this environment, people interested in support the project make donations - each one gives what he/she wants or can. In return, the project owner offers a reward. Ex: If the announced project is a movie, the "investors" can receive a free copy on firsthand.

If the project is able to earn the desired resources, the platform owners pass the money to those responsible for the project, getting a commission - typically 5%. If the fundraising goal is not reached, the idea's owner leaves with nothing and investors receive back the money invested - in some cases, not in cash, but in a credit way to invest in other projects.

This idea already worked in the USA, through Kickstarter (<http://www.kickstarter.com/>), but in Brazil is an initiative that is growing through companies like Catarse (<http://catarse.me/>), Multidão (<http://multidao.art.br/>), Produrama (<http://www.produrama.com.br/>) among others.

It is observed that these initiatives are generic, which means that they are not aimed exclusively for the collaborative animation market. But it is already an important step, after all, McLuhan already used to say that the use of the technology doesn't worth a penny without breaking the paradigm, without the mentality change. We believe that these initiatives can be a good start for this change.

Conclusions

“If you give away cool stuff, what you get in return is always more!” — Ton Roosendaal.

The Brazilian market for animation isn't the ideal yet. Our audiovisual content producers depend crucially on public funds and have often to accumulate functions in order to see their ideas coming out of the paper. We realize that, with rare exceptions, the market miss a solid industrial philosophy of animation production and an applied professionalism, which is already current in other international markets. The lack of professional training in the market is also an obstacle for all kinds of production processes, with major impact on bigger scale productions

We do not mean, however, that the collaborative production model should be constant in the market, but we stand up for its coexistence with the traditional production model. There is room for both models.

In the cases analyzed in this research, we found that there is no standard collaboration model. The crowdfsource production model only defines parameters, but the projects needs are what will actually direct the collective actions.

As an example, The Mass Animation studio has ensured all copyrights on the movie *Live Music*, even though it has counted on the production of 17 000 animators from all over the world. The solution found by the studio was to remunerate with an equal amount each of the animators whose production has taken part on the final version of the film, recognizing the participation of those in the film credits.

And what was the purpose of Mass Animation when developing this model? The company wanted to produce a short film of excellent quality in a short time. Mission accomplished. The film gained notoriety for the audacity of the production, yielded excellent financial and marketing return for the studio and for all of its collaborators - The 17 000 animators participants, or the thousands of surfers who helped elect the best plans for the film - they all felt important for the work success, since they took part on the production decisions. Everyone felt like a significant part of a successful project, and they were all satisfied.

The Blender Foundation's movies, on the other hand, follow the free-content philosophy. Since the beginning of the film production until its release, everyone has access to everything produced in real time. After completion, the film is formatted into Creative Commons' conditions of use, being able to be freely copied and distributed without copyright restrictions. The film turns into a public work. The principle that motivated the Blender Foundation was different from Mass Animation's one. Although they are similar when it comes to the wish of performing a production of excellent technical, narrative and aesthetic quality, in this case the aim was to reach favorable publicity to the Blender software's features, which is also free. At the same time, these productions served as improvement for Blender itself.

But how does the foundation manages to get the resources needed to keep its projects? Although non-profit, the Blender Foundation needs to maintain itself. Their main source of income is the sale of DVDs, trainings and seminars on computer graphics and the use of Blender, also counting with private finatial contributions.

Both Animation Collaborative models prove that you can dare in market with unique business plans, appropriated to the real directors' possibilities, without the adverse budget and deadline conditions affecting the quality and profitability of the production, and being even able to conduct them in an equal or (eventually) smaller time than similar standard productions. For its happening, however, it is necessary to observe two fundamental points:

1. People management

The content producer or entity that wish to use this model of production need to be aware of the importance of an excellent people management. The Human financial support in collaborative productions may be the decisive factor in its huge success or awful failure. Therefore, knowing how to deal with people implies, among other actions, recognizing their efforts, listening to them and considering their ideas, making them feel important in the project and learning how to praise or criticize wisely. These are decisive factors for the success of a collaborative production. This position also ensures an excellent and interactive communication channel between the participants, which also becomes crucial.

2. Mass production platform

If the project has a good mass production platform to share documentation, modeling and animation files, among others. One of the best ways for the creator of the work to ensure that it is being performed with the desired quality and within the deadline, providing security to the collaborators involved and minimizing organizational problems is to have a good mass production platform to share documentation and exchange comments about the production steps in progress. In the short film *Live Music'* case, Mass Animation has developed its own mass production application, in partnership with Facebook (which has facilitated even more the participation of Web 2.0 users). The result was considered successful by the company.

The Blender Foundation, however, has as its main feature (ideological, inclusive) the use of the best free software on the market. Thus, all participants of its projects, most of them adherents of the same ideology, accomplish their tasks by using the same software such as Blender, *Inkscape*, *Gimp* and others, minimizing potential conflicts between versions of files. Unfortunately, we did not have access to information related to the use, by the foundation, of a platform developed specifically for mass production. This lack of information makes us believe that no specific tools have been created for the cases mentioned.

Despite these successes, we can observe that the supply of audiovisual mass production platforms is negligible, which may be an obstacle to Brazilian animators and organizations that idealize a collaborative project.

Brazil is now recognized as a country that produces great talents in system programming, with Brazilians being noticed in recent years by increasing their participation online, either in social networks, blogs, mutual aid forums or in international projects. Why don't we take all this potential to think about solutions for this demand, which has been growing very fast in the world? Why doesn't the Academy or the private sector encourage the collaborative platform production for animation? The opportunity is great. It can move a lot of resources for those interested in the development of tools, make room in the market for Brazilian animators and make the national audiovisual industry - in our case, particularly the animation film industry, full of talent, but still missing some professional formation aspects - grow not only supplying the domestic demands as conquering space in the international market, leading the Brazilian animation to a level that has never been seen before in the history of Brazilian cinema.

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Social networks, semiosis, and production: authoring aspects of sharing content online

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1. Introduction

In this article, we will analyze how blogs and YouTube channels²⁴² maintained by Brazilians deal with the increase in the possibility of publication – within some points, we extend this discussion to social network sites (SNS) and to the communicational flows with e-mail and instant communicational softwares. Apart from analyzing posts, we interviewed bloggers, youtubers, and visitors of blogs and YouTube²⁴³, so as to understand how they relate to the content available on these sites.

At first sight, browsing through blogs and YouTube shows a large amount of material that was not created by whom has published it, but obtained from other sources. Such sources go from other subjects who maintain sites on internet to representatives of media and entertaining corporations.

However, the new publication is always contextualized by comments, new titles, and intervention about the original content, which directs the process of identification of signs, namely, semiosis. Thus, we defend that the appropriation of content originally published by other sources and its new publication by the user is also a kind of creation that is potentized and authenticated by the digital context, although the authoring character marked by these elements is still permeated by controversy. We will return to this discussion in the following pages.

2. Producers, Usage as Appropriation and Creation

The idea of co-participation of the user in the destiny of the work is not innovative from a theoretical point of view. Previously, Eco [1, p.29] analyzed the poetry of open work and emphasized that “the model of an open piece of work does not reproduce a supposed objective structure of the works, but the structure of fruition in the relation”. Yet in this period,

242 The sample was formed by Brazilian representatives of blogs and YouTube channels that were amongst the most visited from November 2009 to July 2010.

243 In the research partially reported in this paper, four bloggers, three youtubers, and six internet users were interviewed. They were selected due to the maintenance and access of some of the blogs and channels with a large visitation in Brazil.

Eco had already warned us about the dialogue of the subjects with their time intermediated by the work. According to the author,

A work is a system of thought, it is born from a complex network of influences, the majority of which develops according to the specific level of the work or system of which it is a part; the internal world of a poet is influenced by and formed from the stylistic tradition of his precursors, as much or maybe more than from the historical occasions to which his ideology refers; and through the stylistic influences he assimilated a way of seeing the world, as a way of taking form. The work he will produce may have very weak connections to his historical moment, it may express a subsequent phase of general development of the context, or it may express profound levels in the phase in which he is living, which are still not very clear to his colleagues. [2, p. 34-35].

The character of incompleteness of the contemporary productions, associated to the aesthetics of participation claimed by the new technical device allow “ruler and compass” to the successive remixes and appropriations and incite the autonomy of the enjoyer, as if they were consecutive and ad infinitum photographs of the capacity of the sign in arousing meaning.

In this way, the currentness of produsage concept, that we will be discussing next, is above all in the online movement of the progress of semiosis. According to Bruns [3], digitization changes the way we relate to other people, products, and content (marked out by him as information, knowledge, and creative work). The author starts from the description of a chain of values from industrial production, which goes from the producer to the distributor in a linear way and, then, to the consumer – without ignoring the possibility of feedback, so as to alter the production, according to the needs of the consumer – to state that the demand for participation in these streams has often grown to the point of partially inverting them. Thus, he who traditionally occupied the role of consumer or user starts to assume instances of production and mediation.

Bruns [4] does not ignore the possibilities of individual and social answers, widely discussed in cultural studies. But he points out that the chain of industrial production is unilateral. That is, in dealing with a car or with a journalistic text, a few authorized producers define the alternatives that will be available for the major part of the chain, composed of the consumers or users.

With the dissemination of digital technologies, the enlargement of possibilities of answers and appropriation motivates a demand for participation. The need to go further than the current receptor’s feedback in the existing influence in relation to the production is motivated and strengthened by the digital streams, which potentize the relations not only in the production instances, but also among the subjects, that upto the present moment, to a certain extent, are restricted to the consuming instances.

The consumer starts to adopt new roles, which include the selection, production, and mediation of content, well above the consumption²⁴⁴/reception followed by the feedback. According to Bruns,

244 Even if Axel Bruns uses the term consumptions in the sense of market, when we refer to the word we do it with another focus, based on the idea of something that is absorbed.

In its digital form, content (whether representing information, knowledge, or creative work) is easily and rapidly shareable, and can be modified, extended, recombined (...): this means that the term 'consumption' in its conventional sense no longer applies, as digital information is a non-rival good which is not consumed (used up). [5, p.14].

Thus, the producer-distributor-consumer chain is substituted by content-producer-content – it is important to underline that the idea of produsage does not exclude traditional relations with the content, even if Bruns [6] defends that on internet the browsing itself generates information that will frequently be used to re-configure the experience of later internet users, namely, the act of browsing, to a certain extent, is confused with the idea of produsage.

An example of this reconfiguration of streams is the videos available in repositories like YouTube. Traditionally, a significantly large public coexists with overriding content produced by large corporations, even though the choice of certain contents within an available list were part of this coexistence, which at the same time that they allowed the option, they limited it to a small number of possibilities. The digitization of this content and its availability in repositories like YouTube alters the logic on allowing the coexistence of produced, republished, and accessed videos under different dynamics and perspectives.

In this kind of repository there is the coexistence of videos created by large groups and made available on official content channels; new publications of these videos in their original form under the aegis of common users²⁴⁵, who put them in their group of content available on their own channels; the recreation of these videos that are adapted by users and made available again in their own content channels, with some of their original parts subtracted (and, many a time, readapted and made available again, in a spiral of appropriation, modification, and publication); the editing of excerpts of these videos added to excerpts of other videos – which can be official publications, recreations, or original creations of other producers.

These videos have as their original source traditional TV, cinema, and musical groups, even when they are distributed, taken over and published again by other users. But videos like these also share a space with others created, edited, and published by common users, who use a wide range of tools, which include from cameras with a near professional quality to webcams and mobile phone cameras.

An example is David After Dentist²⁴⁶, recorded from the front seat of a car, by the father of a boy who had just come out of the dentist and, sitting in his car seat on the back seat feels confused by the effect of the anesthetic. The original video became one of the most seen on YouTube in the months that followed its publication and was distributed, taken over, edited, shortened, published again, had captions included by hundreds of other users.

All these possibilities are part of the logic of produsage, which, apart from describing

245 Even though Bruns formally excludes from his definition of *produsage* the republication of material online recorded from television [7, p. 238], this statement, in the context of the book, seems to be a way of protection against controversy in relation to copyright. If the author considers that browsing sites like Amazon or performing a search on Google generates information that modifies the online experience of other producers and, therefore, is within the logic of produsage [8. p.23], this same notion takes us to the issue of someone who publishes material obtained from another source, even if s/he tries not to interfere in the content, can alter the dynamics of visitor browsing – for example, the members of the channel receive publication notification. So, in our discussion, we will include this kind of activity as part of the logic of produsage.

246 Available at <http://www.youtube.com/watch?v=txqiwrBYGrS&feature=fvst>

a specific behavior, define the enlargement of potential of a relation with the content. As we have said, appropriation, modification, and multiple publications do not appear with digitization. The preparation of printed fanzines by independent groups already covered the issue of multiplicity of voices; the practice of clippings in newspapers and magazines and the inclusion of excerpts of texts in the construction of others points to the exercise of appropriation and reconstruction of content, as well as to the recording of episodes of a TV series by videocassette and the editing of k-7 tapes with a personalized musical selection. What the digitization of information and communication streams brings to this multiple behavior is the dissemination of its practice and the visibility and publicity of the movement of meaning registered in the repeated interventions of the producers.

In the context of interaction between readers and texts, Iser [9] points out that “reading links the processing of the text to the effect it has on the reader”. The effect is currently bared by the dynamics of circulation and appropriation of information in digital environments. To this effect,

What is missing in the apparently trivial scenes and the voids in the articulation of dialogue motivate the reader to fill them in projectively. They project the readers into events and cause them to take as a thought that which has not been said. [10, p. 90]

On internet, this spreading has its foundations influenced by another kind of product related to digital environments: software.

The expression free software as well as open source software refers to computer programs, the source code of which is available to interested users. In software industry, this is not the rule. The denomination is opposed to proprietary software, in that one can only access the code which is already compiled, called executable, that is read by the computers, but not by people.

Even if the free software presents (and it does) an alternative to the proprietary model intended by the majority of the industry, upto the end of the 80s, the way of producing free software was not very different to that used in the preparation of proprietary software [11]. It is the preparation of the core of an open source operational system, Linux, that points to new possibilities of structuring the work of software preparation.

Linux was idealized by Linus Torvalds who, more than write the program, coordinated the work of voluntary programmers from all over the world. Already tried by Stallman, the possibility of fragmenting the parts of an operational system and developing them separately was the central element of the process of development for Linux.

Raymond [12] counteracts Linus Torvalds’ style of coordination of software development with the model followed upto this moment, comparing the first to a bazaar, the voices of which, horizontally structured, intermingle in a medley; and the second to a cathedral, organized, silent, and of a vertical structure. In the bazaar style, the users also collaborate in the process of software development in pointing out failures of each version that has been made public, and all those who are interested and capable can search for solutions. The universe involved in the development of software is thus enlarged, being able to include from beginners in programming to users who do not know how to program.

Apart from the enlargement of the circles of influence and the participation coming from the Linux production model, another central characteristic of free software is the appropriation and modification of the source code prepared by other programmers. For Stallman,

“copying all or parts of a program is as natural to a programmer as breathing, and as productive” [13, p.30]. The statement is related to one of the attitudes that Raymond defines as typical of a hacker culture²⁴⁷: that no problem should be solved twice [14].

Summing up, free software, like produsage, allows the increase in the scope of authorized producers, well above the previous circles, and contemplates a repeated practice of appropriating something produced by another, altering and making (or returning to the circle of use) the product of this appropriation public.

If we consider that the increase of the behavior that we describe as typical of produsage, of appropriating, modifying, and publishing again, is directly related to the digitization of content and to the streams that are made possible by the web and internet, one must presume an influence of the free software community on the current practices of the producers. Along these lines, O’Reilly [15] defends that all internet users are also free software users, as a large part of the known online servers and of the programs, including Google, use this kind of program.

We are not defending a deterministic perspective in which, if the web and internet have many of their programs and servers executed based on free software, the result will be similar to that coming from a free software culture. However, one must presume a certain amount of influence, even because the communities of free software continue to create, to appropriate, to publish, and to discuss on internet²⁴⁸.

This form of organization in the production of free software, the characteristic that Raymond describes as bazaar, is found in other kinds of content. The video *David After Dentist* is an example. But there are hundreds of others – and we are going to focus on blogs and channels maintained by Brazilian internet users.

The election campaign²⁴⁹ developed in Brazil in the second half of 2010 gathered together some of them. The most wide-spread originated in an advertisement of the presidential candidate José Serra. Appropriated from its showing on TV, cut by a producer and published on Mccarlomagno’s channel²⁵⁰ on YouTube, its great attraction was not the proposals, but the playful character of an ambiguity, underlined by the titles given as much on the channel on which it was first published, as on the blogs that republished it.

In the video shown in his election program, José Serra, on praising a citizen, referred to “Brazilians like him, like his mother whom I also met, like Vânia, who is his wife, like Damião, like Andréia, like dona Maria”. Cut and recontextualized by titles that indicated a meaning directed to a sexual aspect, the video reached millions of exhibitions and originated musical versions²⁵¹ that only remix the original video and others, which make mashups with

247 The attitude of hacking is defined by Stallman [16] as one of playing with something notably difficult – and is not necessarily related to computers. The denomination *hacker*, in the context of computers, refers to skillful and creative programmers. There is a confusion between the terms *hacker* and *cracker* – the latter explore breaches in security for their own avail, resulting frequently in damage to others.

248 One of the most basic examples of this influence is the possibility of showing the source code of the accessed pages, which exists in the main browsing software for internet.

249 In the Brazilian election system, each voter votes directly for one candidate and the sum of the total votes is what elects the candidate. Voting is mandatory for every citizen between the age of 18 and 70. Elections occur together: president, governor, deputies and senators are chosen in the same election process.

250 <http://www.youtube.com/user/mccarlomagno>

251 <http://www.youtube.com/watch?v=gi1n1UT5FMk>

characters like the Simpsons²⁵² and Lady Gaga²⁵³.

The video published on Mccarломagno's channel was appropriated and republished by dozens of other channels. And also on several blogs. In these, as well as the title directing to a playful character, ironic sentences were included like "and the Pac-man trophy goes to"²⁵⁴, an allusion to the game in which the main character gobbles up all the shining pixels it can find.

Apart from the issue of the video, the inclusion of these textual elements, like the title on YouTube and the sentences that compose the post on the blogs, are fundamental to direct the semiosis to the sense of fun, instead of that which was originally intended. To understand this issue better, we will focus on some of the basic principles of semiotics by Charles S. Peirce.

3. Semiotics: Key Concepts for the Discussion Presented

The idea of representation is the foundation of semiotics as seen by Charles S. Peirce. Originated in phenomenology, a large portion of his work focuses on the notion of the sign, defined many a time in the course of his work. We will approach the sign as "something that represents something for someone in some aspect or capacity" [17]. According to this concept, the process of representation is also divided into three elements²⁵⁵: apart from the sign (that which represents, in some aspect or capacity), Peirce refers to the ideas of object (or something represented) and the interpretant (the idea the sign creates in the mind of a virtual subject²⁵⁶) as components in the process of semiosis.

Thus, the sign is responsible for bringing to mind, in the form of an interpretant, that which is outside, the object – it is important to underline that this object does not need to have a real existence, serving the horse as well as the unicorn, for instance. The existence of the sign depends exclusively on the establishment/reference of a representation relation. Or, as Peirce makes clear, the sign is all that is understood as a sign [18].

One of the possibilities of a classification for the signs is that which divides them in icons, indices, and symbols. These divisions of the signs are characterized, respectively, by the similarity with its object, by pointing out an unknown object to itself, and by a rule that joins it to the object.

An icon characteristically has qualities in common with the object that it denotes (i.e., similarity). An index is in a real relation to its object (smoke as a sign of fire). A symbol is "determined by its object in that the thought which is determined by the symbol represents the symbol to be determined by its object" (Ms.. 612, 1908:47)²⁵⁷. This may not be phrased elegantly,

252 <http://www.youtube.com/watch?v=MHFtTRJbXQY>

253 <http://www.youtube.com/watch?v=iInN5GkoIj0>

254 <http://www.caixapretta.com.br/2010/08/esqueca-jose-mayer-o-comedor-do-momento-e-o-jose-serra/>

255 The triadic process of semiosis is one of the big differentiators between the thoughts of Peirce and other seminal semioticists like Ferdinand de Saussure.

256 The idea of an interpreting subject is a simplification that facilitates the understanding of the Peirce concept. The interpreter or the interpreting mind does not really need to exist in the process of semiosis –there are people who study zoo semiotics or the semiotics in plants.

257 The notes by Peirce follow a specific logic. MS refers to the manuscripts of the author, followed by the number of the paragraph and the date of its preparation.

but it is a precise way of standing the conventional characters of symbols because their reference to objects is mediated by an “abstract thought”, i.e., a convention [19].

Two ideas specially interest us in relation to signs. Firstly, that of semiosis as a process in the formation of meaning. Secondly, the notion of index as an element that points to a context of fruition, which is unknown to itself.

According to Bergman [20, p. 155], the indices “(...) indicate in what domain the objects referred to are to be found; or, to express the point differently, what kind of experience is required for the proper grasping of the objects”. According to this reasoning, the role of these indices in the process of semiosis is to point to the object, increasing the possibilities of it being accomplished within a universe of specific reference.

The indices have a fundamental role in our discussion about the authoring of contents on internet. In the video about José Serra, it is the title, with a textual index, which points to the intended meaning by the youtuber who took possession of the material, edited and republished it. The video as it was originally shown on TV did not attract so much attention as the producer’s version.

In the blogs, this indication of the context of intended semiosis is reaffirmed by the sentences that make up the post, together with the inset of the video. On referring, for instance, to the universe of games, they create a new play with meaning that accumulates at each new appropriation and republication.

If we take the version of the video that was captured on TV, edited and published on YouTube together with a title, and then re-appropriated by bloggers, published again together with sentences that indicate the intended meaning, we have very different possibilities of semiosis from those relating to the initial video. In this case, it would be interesting to question the creation process of this content.

On adding elements that motivate possibilities of the production of meaning different from the original, the producer creates new content. This would certainly not exist without the original material, which was appropriated and modified, but that is as correct as stating that, as from its appropriation, modification, and republication we are not talking about the same content. So, it is necessary to look at production on a wider range.

4. Production, Appropriation, Modification, Republication

The fragility of the initiative of content production is a point highlighted by several authors, who refer to the low percentage of creation, in opposition to the high reproduction of contents created by others. This is the point of view that grounds the 90-9-1 principle [21]. Based on a research project in which posts of content in communities were analyzed, Jacob Nielsen outlined the foundations of logic that describes as 90-9-1: 1% of the participants contributes regularly to the content; 9% of this in an intermittent way, and 90% do not contribute at all, they only observe the contributions of others.

Nielsen’s research joins a previous belief, already questioned by Nonnecke & Preece [22]. The researchers qualifies the idea that the lurkers²⁵⁸, those who only accompany, without con-

258 The term *lurker* comes from the verb to lurk. Kollock & Smith [25] show, in 1994, that the attitude

tribution, represent 90% of the followers of discussion lists.

The studies by Nonnecke & Preece [23, 24] qualify not only the percentage of 90%, but also the activity of the lurkers itself. The researchers demonstrate that the absence of contributions vary according to the theme of the list or discussion forum and with the conceptualization of what the practice of the lurker is, especially in relation to the frequency of content sent.

However, researchers deal with low percentages of production in their work. Nevertheless, it is necessary to highlight that Nonnecke & Preece's research – and even Nielsen's – was introduced in a different context than the current one. The growth of the networks and social media open space to increase participation. A study performed by Ibope/NetRatings in 2010 shows that in Brazil 33% of the internet users publish, maintain, or create some kind of content.

The difference in the results points to the action of internet users as producers. The study done by Ibope includes, in the same classification of creation of contents, their publication and maintenance. There is certainly a broader view. Nielsen [26] himself explains that to contribute, modifying content previously made available is much easier and common than to build something new – the author refers to Second Life, in which the majority of those enrolled modify model avatars instead of creating their own.

One of the most important characteristics of the way we see produsage, the possibility to appropriate content, its modification and republication finds a considerable space in blogs and YouTube channels maintained by Brazilians. Production and republication cannot be taken as airtight instances, but need to be seen as poles separated by a broad gradation and difficult to identify as belonging to one or the other end.

As we have stated, on appropriating content, whichever may be its origin, and publish it again, the producer involves this content in indices that contextualize its interpretation. Thus, even if they do not significantly alter the original content, they point to new possibilities of semiosis – and, on new possibilities of delivery of semiosis, it is possible to say also that there has been a process of content creation.

Mensagem subliminar
20 AGO 2010 | por DUQUIAN em IMAGENS de 3:34



Fig. 1: Subliminal Message²⁵⁹

of lurking, according to them, is somewhat prejudicial to the activities on discussion lists and other possibilities started in the very beginning of internet.

259 Source: <http://www.sedentario.org/imagens/mensagem-subliminar-30424>

An example can be seen in a post on the blog *Sedentário & Hiperativo*, one of the most accessed blogs within the collection of Brazilian blogs. The post is formed only by a photograph of two children who seem to be twin sisters and whose dresses refer to C3PO and R2D2, characters of the series of Star Wars films (FIG. 1). Above the photograph, the title is “Subliminal Message”. There are no other elements in the post. But the insertion of the title is motivation to look at the photograph closely, in search of what message is implied in the image.

In the first publication of the photograph on the Official Star Wars Blog, on Flickr²⁶⁰, the image was part of a collection of photographs of people typified as characters of the Star Wars film series, registered during the Celebration V²⁶¹ event. Within this context of publication, the reference to the characters is more easily identifiable – because other costumes of C3PO and R2D2 show a link between the elements of the girls’ dresses and those of the robots in question.

On taking the photograph out of this context, the identification becomes more complex and demands a larger familiarity with the Star Wars film series. Without the title, it would be more possible for the photograph to be lost amongst the daily posts on the blog. Presented in this way, the post becomes a kind of challenge to those who visit the site. The comments ascertain this character: a large part is composed by the name of the robots. The identification of the reference to the characters is put forward as an act in many of the comments.

On removing the photograph from its original context and attaching a title to it that provokes a search for meaning, a new content is created. But, if we consider that this kind of posting is the result of a recreation in a mediation instance, that is, on a blog or YouTube channel that appropriates the original content, alters and republishes it, it is possible to understand this typification of content shared by e-mail, social network sites, or software that allows the exchange of instant messages, like MSN and Gtalk.

Going back to the research done by Ibope/NetRatings [27], the sharing of content is done by 83% of Brazilian internet users. That is, if we also consider it as a possibility of creation, we will have significantly enlarged the percentage of producers who do not keep exclusively to repeating content, but who contribute to its recreation.

This statement comes from the idea that, in a produsage environment, to mediate content is also to appropriate it. As in the examples cited, indices of fruition contexts are attached to this shared content: the address of a clip of a friend’s favorite band goes by e-mail together with the comments about the last scandal in which the vocalist was involved, as well as the news about the accountancy frauds of a large company possibly being present are enclosed in the memory that at some time you intended to buy shares of that firm. In both cases, the comments influenced in the intensity and kind of relation established with that content, which makes a distinction from that one that would be obtained by a possible contact with the same material stemming from a simple browsing on internet. The diverse character of these relations influences the delivery of semiosis.

5. Double Enunciation and Content Trustee

On considering that a republication and the sharing of content are also a kind of produc-

260 <http://www.flickr.com/photos/starwarsblog/sets/72157624365192239/with/4884944646/>

261 Event that unites admirers of the Star Wars film series.

tion, we get nearer to the idea of a double enunciation. The concept of a double enunciation is quite used in the semiologic discussion in theater. Issacharoff [28] explains that one same text would be enunciated by its author and by the actor who interprets it. Yet Ubersfeld [29] conceptualizes a double enunciation in a similar way, but referring to the author and the character. Gentès [30] applies the concept to the universe of a work of art. In this prospect, the work of art would be the result of the enunciation of the artist, in the context of realization and of the curator in that of its circulation.

It is possible to compare the idea of double enunciation, especially to Gentès' [31] conceptualization, to some processes widely found on blogs and in YouTube channels. When discussing the process of gallery and museum trustees for internet, Gentès [32] defends that the address of the site in which the work of art is inserted should be part of its process of semiosis, as well as the labels used in galleries and the information on works of art added to catalogues – all these also liable of being included in the online pages on which the works of art will be shown. Apart from the address, he states that “the spatial and term location of the objects is fundamental for the way in which this object will be perceived and interpreted²⁶².” [33, p. 98].

In relation to produsage, the idea of a double enunciation seems to be quite adequate. Firstly, it helps to see content trustees implied in the republication and in the sharing, be it an original production of who publishes, be it an appropriate content and republished or shared, with the addition of large modifications or only contextualizing indices.

If we return to the issue in which the existing indices in each set of contents, being a blog page, a YouTube channel, or a message sent to a person or a group, points to a context of fruition and in which the semiosis of the central elements of this group is delivered also based on these indices, strengthening the idea that republication and sharing, on enclosing new elements frequently composed of the objective of being interpreted in a certain way, cannot only be seen as the repetition of something.

In this way, there will scarcely be (if it is possible to exist) a full reproduction in our universe of analysis, without needing new elements acquired in the process of transposition of content from one site to another becoming a part of the content itself – that is why we refer to the appropriated material as republished, avoiding the term reproduction. On the other hand, republication and sharing are results of a selection, trustees that take into consideration the potential and limitations of the platform/tool on which it will be published or the way in which the content will be shared, the idea that exists of the public to which it is aimed, the history of the previous publications/sharing, amongst other elements.

This process of trustees influences and is influenced by the relationship with the visitors to the blogs or YouTube channels or with those to whom content is intended. When producers republish or share content, they deal with a larger group in construction, which can be a blog or a channel as a whole or a dialogical process of digital communication. These groups are partly a result of this process of trustees of something that a) was prepared by others, appropriated, modified on a larger or lesser scale and published; b) was prepared by the subject who practices the process of trustees.

This idea of a double enunciation helps to understand the relation that exists between those who republish and what is republished. As much as those interviewed were aware that

262 “La mise en espace et en temps des objets est en effet fondamentale dans la façon dont l’objet va être perçu et compris.”

the content was originally produced by another, the majority of them who maintain blogs and YouTube channels considered this content a little theirs as well – be it for the trustee work, typical in mediation, and for the adaptation of the content, be it for the reputation that stems from the republication of this content twice enunciated.

Amongst the bloggers and youtubers interviewed, this is a perception that content that has been appropriated by them and republished can even be appropriated by other producers, as long as the credits of the original producer are maintained, as well as the credits of those who appropriated the content and published it again. Thus, for example, amongst those interviewed who capture musical videos from DVDs and republish them on sites like YouTube, they all maintain the credits of the original producer – normally large communication and entertainment corporations. And they consider, as an ethical issue, that all those who appropriate videos from their channel maintain the reference of the original producer, as well as the reference of the producer who first appropriated the content.

Therefore, there is a reiteration of the idea of a double enunciation, which in several of the interviews is also recognized by those who access these videos. In this sense, internet users state that if someone had the work of capturing and republishing videos, it is this producer that should have the privilege of visits to their channel, and not those who appropriate what is already published on YouTube by another producer. The sharing by e-mail, instant communication software, or social network sites does not generate these problems, as normally it refers people to the site on which the shared content was published.

6. Conclusion

The alterations in the mediation, production, and access streams influence the relation of the producers with the processes of creation of content. In this context, possibilities of interfering in existent content gain leeway. This intervention, even when small, can decisively influence the processes of semiosis. Interpreted in different ways as from its appropriation, alteration, and republication, the content is not the same any more. Hence, it is necessary to reconsider the notion of the creation of content.

We suggest that this concept be taken in a broad way. The attachment of contextualizing indices to the content and the ideas of double enunciation and the process of trustees of content send us to an important discussion: as much as a controversy has been installed related to the legal implications of appropriation, modification, and republication of content, it is necessary to recognize that these dialogical and meaning generation flows are recurrent practices amongst internet users – at least in the portion analyzed in Brazilian internet.

In this panorama, processes of appropriation, alteration, and republication are seen as forms of dialogue and information practices. These flows can occur in a restricted manner, when e-mail and instant communicators are used, or in a broader way, in the case of blogs, YouTube channels, and SNS. In one way or another, we are dealing with practices that are broadly disseminated, at least amongst Brazilian internet users, and which need to be analyzed as manifestations of the current socio-technical conditions.

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Extension and Sensorial Dimension

The Impact of Virtualisation on Perceptual Hierarchies

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Abstract. In this paper, I speculate on a possible sea change in our perceptual hierarchies. This change, if it happens, is postulated to be a consequence of widespread virtualisation, most especially, of images. Today's information ecology is one of multi-tasking, fragmented and hierarchically organized data structures. The predominance of the visual function in this context seems to be called into question. The acoustic function has aspects that are both material and virtual, but we assimilate sound as intangible, while image objects have tended to be tangible and vendible. As these tangible visual objects give way to virtual ones, it may be that the perceptual hierarchy described by McLuhan as resulting from the use of phonetic writing will slowly be redressed. While this cannot be proven at this time, some multisensory research exists to support the idea.

Keywords: Sound, Multisensory Perception, Virtualisation, Image, Art, Music, Perceptual Hierarchies

1. Thesis

Marshall McLuhan wrote that phonetic writing, by creating the "sudden breach between the auditory and the visual experience of man" had created "an intensification and extension of the visual function... [that] diminishes the role of the other senses of sound and touch and taste in any literate culture."

It is the thesis of this paper that virtualisation is helping the sound sense to return to a level of similar or even equal significance to image in Western culture.

It is much too early to be able to establish proof of this thesis by any reliable methodology, but it is possible to speculate reasonably, and apply some circumstantial evidence in its favour.

2. Background

McLuhan, in [1], does not support his assertions about the primacy of the visual resulting from phonetic writing with any research. They appear to be his personal reflections, and they are consistent with his notions of hot and cold media. He says that only the phonetic writing system creates a correspondence between letters (visual) with no semantic significance and sounds that

have no semantic significance. This is responsible for the “sudden breach” he writes about, a breach between our auditory experience of speaking, and our visual experience of reading.

The acoustically sensitive individual will empirically confirm the part of McLuhan's reasoning that affirms the existence of what the Italian philosopher Roberto Barbanti calls *retinal bias* in Western culture. McLuhan's remaining assertions seem reasonable, if unproven.

It must not be forgotten, either, that McLuhan saw the development of phonetic writing, coupled with movable type, as being the key to the development of individualism. Before writing, a society's archive was contained in the collective, overlapping memories of many people networked together by a common heritage and oral tradition. The printed word permits the individual to disconnect from this collective network, and operate in isolation, as the archive can now be accessed and augmented without collective action. In other words, at the time of McLuhan's writing, he perceived Western society as one in which acoustic transmission (the oral tradition) cemented connection, networks, a sense of community, while visual transmission (the written or printed word) caused distancing, disconnection and individualism.

Today, that paradigm is being disturbed by the existence of the Internet and the various phenomena surrounding it. Social networks function in a multi-media mode, but the initial information transmitted is almost always textual. Thus, networks are formed and cemented via text.

However, these networks are different from the oral communities McLuhan referred to. The online networks tend to be collections of heterogeneous individuals, rather than unified collectives. The networks formed are often networks of interest, which coalesce around an objective or interest that may well be limited in time.

Their cohesion may be just as great as in a physical community, but they are made up of isolated individuals who find their connections despite being distanced, and who share a common space that is virtual, rather than physical. Moreover, their shared experience is limited to certain defined activities, and in other aspects of life they might have nothing whatever in common.

3. Visual Cognitive Dissonance

In today's world of multiple, real-time communications media (everything from CNN or Al Jazeera to Twitter, Facebook and their analogues), our visual representation systems are out of phase with our informational environment.

In Western culture, our visual representation of the world is almost completely dominated by aesthetic principles developed during the Renaissance, with its unity of representational content, and the learned grammar of perspective, that squeezes the universe into a series of receding lines inside a rectangular frame.

However, our informational ecosystem is much closer to the visual language of the Medieval period, with its hierarchical organisation, fragmentation and even multi-tasking orientation.

This fragmented and virtualised informational regime has resulted in a salient fact: an enormous quantity of information, textual as well as visual, will never be materialised (by printing it, for example). This virtualised information can wander through the network, and because digital copies are identical clones of the original, this information can reproduce, be transformed and mutated, and continue its errant life, once again reproducing and mutating in the exponential fashion that has justly been called “viral.”

This visual cognitive dissonance, coupled with virtualisation of image as well as of sound, are, in my opinion, acting to shift the hierarchy of perception from a retinal bias toward some sort of equilibrium between sound and image.

4. Sound: Virtual? Intangible?

Sound, and especially music, occupies a particularly ambivalent position in our perceptual universe. Sound has an undeniably physical manifestation, in that it is a pressure wave, and requires a physical medium to be transmitted. For most of us, most of the time, that medium is air. Waves of alternating compressions and rarefactions strike our ears, but also the rest of our bodies – sound waves are constantly touching our skin, our hair, etc. and unnoticed though they may be, their physical presence influences the way we understand the world. They can cause other objects to vibrate sympathetically. The transducer that is our auditory system converts these physical pressure waves into electro-chemical-magnetic signals that act directly on our brains, and especially in the case of music, on our emotional centres, without intellectual mediation.

Sound is propagated spherically in space, and so our perception of it is equally dependent on our position in the acoustic space, relative to the sound's source, reflecting or absorbing surfaces, other sound waves that may be encountered by the sound on which we are focused, etc.

On the other hand, this materialisation of sound can be considered, from a psychological point of view, ephemeral. We might say that sound (and music) have always been “virtual” in that sound seems intangible and requires the passage of time to be perceived. There is no way to “have” sound other than in time.

In artistic production, this can be juxtaposed with visual art, which has always concentrated on the production of “objects:” paintings, prints, drawings, sculptures, etc. These visual *objets d'art* do not have a musical equivalent. You cannot buy and sell a “musical object,” though you can buy and sell codifications of music, which has certain consequences, as we shall see.

5. Musical Materialism: Image Thinking Imposed on Sound

In an analogous manner to the individualisation of knowledge generated by printing and the book, musical notation (and the printing of musical scores) generated a separation between music as a spatial-temporal event, and its codification.

Codification: Scores and Disks as Musical Objects

Once musical scores became a commodity, the primacy of visual thinking induced us to objectify music itself, and think of owning a musical score as being the same as possessing music itself.

This tendency exploded geometrically after the invention of electric recording and the rise of the disk industry. Evan Eisenberg, in [2], writes of record collectors, who could boast,

for example, of having purchased all the music of the Beatles. These collectors, often, had never taken the shrink wrap off the albums, let alone listened to the music. The interest of the collector was not, in fact, the music of the Beatles, but the physical objects that the different editions of different albums represented.

McLuhan's notions concerning phonetic writing and emphasis on the visual sense help to explain this phenomenon of materialisation. Because we have a retinal bias, we have tended to force an ephemeral, temporal phenomenon, music, into a visual, materialized mold that, in fact, fits it very poorly.

This also explains why the disk industry has so badly missed the boat of the digital revolution. The disk industry is focused entirely on the manufacture and sale of material objects, i.e., the codification of a musical performance that is a CD or DVD. It is locked into a Taylorist, industrial mode of operation that leaves its executives incapable of understanding the new virtual model where music remains in an intangible form, and in which everything is ephemeral – the world of the Internet. Thus, attempts to “product-ize” MP3 files with Digital Rights Management (DRM), a vain and counterproductive effort to treat the intangible, and infinitely duplicatable digital file as a physical, vendible object.

Perspective Invades the Concert Hall: Perceptual Conditioning

There are other ways in which visual paradigms have been imposed on music. For example, since sound is propagated spherically in space, one of the most interesting things to do, for someone attuned to a practice of active, engaged listening, is to walk around a space and note acoustic changes in different locations due to the sound interacting with objects, surfaces, etc., resonances in the space itself, and so on. During its travel through the time-space continuum, a sound wave is muted, enriched, modulated and rendered infinitely varied.

On the other hand, concerts are generally performed in auditoriums where we are nailed to our assigned seats, unable to move around, and where the musicians are inside a picture-frame known as the proscenium, squeezed into the series of receding lines that we know as the grammar of perspective: one “viewpoint” and therefore one “listening point.”

In the theatre, it used to be true that at least, from our fixed listening point, we could discern the movement of the actors around the stage. But in recent years, actors' voices are amplified using microphones built into their costumes. The sounds of all the voices are then mixed and fed to the audience from one or two single, immovable points, rendering it difficult or impossible to know where the actor is located on the stage, as the voice does not move with the body. The perpetrators of these disembodied voices actually have the temerity to call themselves “sound designers!”

To sum up, in Western culture, there is a marked tendency to align acoustic representation with criteria established for visual representation. The effect of this is that the spatial-temporal nature of sound is effaced in favour of a single observation point, oriented towards the vanishing point in a pictorial perspective.

6. Contemporary Media Art Practice: Unframed Image, Unchained Sound

Artistic practice, throughout the twentieth century and to the present day, has often sought to break with tendencies to capture, materialise and petrify the artistic experience. Movements such as Dada or Fluxus, for example, developed ephemeral events where the only trace left was documentation, without any material art object.

Happenings and installations have liberated the public from its fixed vantage (“viewing”) point. There is no more scenario (picture frame), and the public is invited to mix with actors, artists and other participants, and to become actors themselves in a creative experience in space and time.

Sound artists such as Alvin Curran, Cécile Le Prado, Elizabeth Philips or Max Neuhaus, among others, have created installations that are purely acoustic, with few or no visual elements, and where the movement of visitors in the space is not only possible, but fruitful.

Today, there is a growing body of work in virtual spaces online. These are sound and image “installations” that only exist virtually. They use tools of visual and acoustic spatialisation, to create imaginary spaces, available at any moment, where a visitor can wander freely.

As far back as the 1950’s, the physicist Werner Heisenberg [3] stated that quantum physics implied that it was no longer possible to regard the world as a collection of objects, but rather as a “series of connections.”

The Australian artist, Bruce Mowson, sees his work as occupying a specific place on the matter-energy continuum, from the point of view of duration. According to Mowson, the movement of sound in space is slow enough to be perceived, while the movement of light is perceived as being instantaneous:

...yet [sound] is fast enough that it exists temporarily, unlike physical objects which persist until their substance is broken down. Physiologically, and at the infinitely subtle level of bodily awareness, sound events can be perceived to have a unity in space and time, creating in the listener a sense of being fused into physical spatio-temporal reality via sensations. These sensations are of formal significance in spatial sound practices, being specific and sometimes significant to its aesthetics. [4]

In this extract, Mowson connects and unifies the ideas expressed here, that sound is at one and the same time, a physical phenomenon and a virtual phenomenon in the sense of Paul Virilio [5]. For Virilio, the salient traits of virtualisation are that the subject is removed from its physical existence (dematerialised) and also from its location in space (deterritorialised). By extension, according to the principles of physics, this also means that it is dematerialised.

Mowson moves seamlessly between installations created for physical spaces and for virtual spaces. The online installations are virtual codifications of a space-time continuum. Their reproduction produces sound waves, delivered to the ears – a materialisation of the “virtual” sound, and an image on the screen or other reproduction device (e.g. personal stereoscopic viewers, projections, etc.), which remains virtual, no matter how enhanced in three or more dimensions it may be.

Another Australian artist, Adam Nash, creates 3D Multi-user Virtual Environments (MUVes). He uses the Second Life platform to create works in which the visual component

is a non-representational avatar, an abstraction, not a body – not even a virtual body. Nash calls his pieces “post convergent,” referring to the convergence of all the different “media-elements,” new and existing. His thinking is led by sound composition practice:

...perhaps sound has the most precedent in negotiating the kind of issues raised by post-convergent space... Beginning with [Pierre] Schaeffer's musique concrète in the 1950s, picked up on by the multi-track studio experimenters of the 1960s pop/rock movements, expanded by the synthesiser artists of the 1970s, in turn developed by the sampling turntablists of hip hop and techno artists of the 1980s and finally into the full blown all-digital process of mainstream commercial music production in the 1990s, an arc traces the metamorphosis of music from a recorded representation of real world practice to an abstract space, absorbing and acknowledging past conventions whilst conforming to an internal logic of its own devising.

Further, the concept of music itself is really an arrangement of abstract sounds, usually according to a technologically-determined formalism. The listener is expected to engage with the composer and/or performers in order to consciously enter a non-empirical space in which all constituent elements are without context other than their relationship with each other within the constructed space [6].

Here is Nash's own description of one of his Second Life environments, *A Rose Heard at Dusk*:

Using many of the possibilities unique to the Second Life medium, A Rose Heard At Dusk is a participatory artwork that turns visitors into performers.

It was designed specifically for the cavern space under the Opera House on Big Pond Island. The work is designed to be “played” by visitors' avatars.

Walking, flying and jumping through the space, avatars create a unique audiovisual composition, different every time. Colours and sounds combine to create a spatially immersive musical and visual experience.

The work can be played by single avatars, but it really comes alive when friends play it together. It blends the different meanings of “play”. By playing in the space, visitors are actually playing the space like an audiovisual instrument, creating endless variations of sound and vision.

It looks different at different times of day, the light reacting differently with all of the translucent colours. It sounds different from different positions - all sounds are attached to shapes in the space, some sounds stay still while others move, some sounds are triggered by avatar proximity, while some are constantly sounding. Combined with the movements of visitors avatars, this creates an endlessly changing immersive audiovisual experience. [7]

Although film and video are also intangible manifestations of both sound and image, this type of work represents the first time that such a complete, and even-handed spatialisation of both has been available (with the possible exception of such spectacular – and therefore singular – events as IMAX films, the excessive cost of which has limited them to mass-entertainment domains).

Artists have often been the socialisers of new technologies or processes. Perhaps this new artistic process is also the harbinger of a (probably long and slow) process of readjustment of perceptual hierarchies in which perception of the visual and perception of acoustic phenomena carry equal weight and influence each other mutually.

7. Multiperception Research

There is new research being done by the Visual and Multisensory Perception Lab at the University of California at Los Angeles (UCLA) that seem to be indicating a different picture than that assumed by a predominance of the visual. They offer, as evidence, a visual illusion that is created by the presence of sound [8] and go on to explain the phenomenon using laboratory research results:

Vision has been traditionally viewed as the dominant modality; one that operates independently of the other modalities. This general view has been changing in the light of accumulating evidence documenting the modulation of visual percepts by signals from other sensory modalities... ..the neural activity associated with the presentation of a visual stimulus is modulated by sound with a very short latency and in areas of the brain thought to process only vision. Our functional Magnetic Resonance Imaging (fMRI) studies confirmed that activity in primary visual cortex (V1) is selectively enhanced in trials in which sound alters the visual perception (i.e., when the illusion occurs) and not otherwise. This is an astonishingly early level of sensory processing, and thus, these results taken together show that even visual processing (which has been thought to be quite self-contained) can be modulated by sound and at the earliest stage of processing in the cortex. [9]

8. Conclusion

This paper has presented anecdotal and empirical arguments to support the notion that deterritorialisation, dematerialisation, and the consequent detemporalisation of the image object, in the “post convergent” sense of Adam Nash, brings the perception process of visual stimuli closer to the mode in which we Westerners have always perceived music and other acoustic stimuli.

This phenomenon could possibly cause, over time, a change in our internal cognitive processes that affects the perceptual hierarchies we have learned over so many generations.

Furthermore, research into multisensory perception is now suggesting that such a hierarchy may not, after all, ever have been present.

Virtualisation is much too new a phenomenon for us to have any hope of proving (or disproving) this hypothesis scientifically at this time, but assuming it’s true can lead us to interesting questions and new explorations.

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Augmented Spaces. Maps and Convergent Devices for the Experiential Representation of Human Territories.

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1. Introduction

Maps are complex cultural artefacts. Born long before writing, maps evolve by developing their own codes, languages, conventions, structures and aesthetics for the description of the territory, anticipating many of the current discussions in the field of augmented reality.

As for all artefacts have a similar history, objects that fall within the broad category of 'maps' are among the most diverse and it would be difficult to find a formal category, a traditional definition to describe them all. In an imaginary map catalogue, it would be possible to find artefacts as diverse as: driving directions sketched on a sheet of paper (visually not unlike the tales of primitive hunting tribes); topographical and geographical maps that commonly are the main representative of maps in common imagination; specialized representations that describe lands (geological, tectonic maps), environments (ecological, meteorological maps), human territories (social, demographical maps); maps that show things that are not yet present (projects, forecasts, simulations), things that are not present anymore (historical maps), and things that will never exist (fantastic, literary maps).

Cartographic codes can be defined as codes that establish a correspondence between spaces. They match the geographical space of the subject with the virtual space of the representation, be it paper, the physical three dimensional space of physical models, or (more recently) digital screens and multimedia devices (MacEachren 1995). Through this link, maps augment physical spaces by creating synthetic visual texts that merge heterogeneous elements in the description of a human territory.

This cartographic narrative goes beyond the mere geographical depiction of physical space. It describes the human and anthropological place, the space of meaning described by anthropology as a concrete and symbolic construction of space, source of meaning for those who live it, filled with meaning and relationships (cfr. Augé 1992). The represented territory is enriched by human components and geographic measures are sidelined when compared to the space of humans, societies, politics, traditions. Maps describe not only space, but also the relationship space has with those who live it, its identities, its expressions, its memory.

2. Cartography and the Augmentation of the Territory

In these context, maps acquire the expressive diversity of text by assuming diverse forms and styles in order to express different discourses on a spatial and synchronous support. By harnessing the geographical substrate that provides the discourse substrate, maps have the possibility to connect different contents by marking them on this virtual space. In this way maps blends the physical characteristics of space together with the communicative aims of its author (Harley, 2002).

If we were to borrow from the lexicon reserved for text genres, among a hypothetical phenomenology of cartographic representations we would find *personal maps* that augment reality by adding externalized memories and intimate accounts of personal experiences, *news maps* that augment the territory through references with other texts and data in order to help to place the chronology of events in space, *promotional maps* donated by distributors and fast-food chains that provide a reference to their presence in the area, *project maps* that create new configurations of space that overlap with the present state of things, *propaganda maps* that distort the physical space according to a given ideology.

The operation of sorting and selecting data, defining their classification and such elements on an artificial space is the institutionalization of a new territory, that mixes the real with the virtual, in order to allow for previously impossible uses (Wood 1993). The space created by such operations becomes a *narrative territory*, enriched by human social, political and traditional components. Physical spaces get annotated with altitudes, high-pressure fronts, names, administrative boundaries, statistical values of economic growth, temperature, wind, weather productivity forecasts, geological and tourist information.

Besides the obvious geometrical space, the augmentation of reality provided by maps creates a number of cultural (but nonetheless real) territories: media, geological, historical territories merge in the narrative of reality.

2.1 Virtual Spaces for Territorial Communication

In this context maps emerge as tools that augment physiological and perceptual human abilities by creating additional realities: they extend territories through the use of cultural and natural elements that are merged in the description of auxiliary spaces. Just like scientific instruments (telescopes, microscopes, RADARSs, MRIs...), maps give perceptibility to intangible dimensions, thus providing the possibility to act on the world in ways otherwise impossible. As microscopes magnify objects too small to be seen, thus allowing humans to act on tissues and cells, likewise the map extends the domain of what is perceptible, allowing humans to perceive the cultural dimensions of space and to act upon them both directly (e.g. respecting a state border) or indirectly, by subsequently using this knowledge in order to make informed choices (e.g. planning a trip).

Unlike a lens that simply bends light in order to shrink or enlarge the image of an object, maps are cultural artefacts that act upon the object of the representation (space) in order to return not so much a mathematical transformation of the image, as an intellectual abstraction of space that fulfils a specific purpose. It subtracts from the physical space elements that are considered disruptive while creating new augmented spaces designed for the operational needs of the user. It provides socio-spatial spaces for social acts, geological spaces to study

of the feasibility of a dam, economic-logistical spaces to support for the opening of a new hypermarket (Harley, 2001).

Like all tools, image-tools are designed for a specific use or a class of functions: either highly specialized (such as x-ray imaging) or more general (such as diagrams). They can be more or less difficult to use, they can be intended for a specific community with well-defined codes or vice versa for a general audience.

As *descriptive artefacts*, maps provide a surrogate of the territory, an image that replaces and augments the physical space in order to facilitate certain operations. It creates a handy equivalent of the territory (but only as far as a specific aspect is concerned), that allows to take control and to act upon it.

As *communication artefacts*, maps allow to share collectively augmented spaces that have been annotated with discoveries, paths, points of view that allow the public to 'see' otherwise inaccessible information.

As *planning tools*, maps harness the fictional qualities that distinguish maps from other types of scientific images (such as radar and tomography). Harnessing the fact that maps are able to show falsities, phenomena that are not present in the represented space, plans distinguish themselves from diagnostic and analytical procedures of descriptive maps in order to act as a design tool. The invisible features that augment the space of plans are not invisible because they are too small or abstract in nature, but because they are not present, but either future or hypothetical. By virtue of their design, maps can give life and (virtual) reality to imaginary realities by creating a sign without a referent, a fiction that enables to see alternative realities.

Not being defined by the current configuration of the phenomena, maps create fake territories, temporary simulacra on which to make tests and projects, to test hypotheses, to make measurements without the cost and difficulties associated with the intervention on the real territory (cfr. Baudrillard, 1981). By drawing a plan, the designer-cartographer tries to build, change, and act upon the virtual space by building dams, roads or social interventions to see how the social, the physical, the political space changes.

Visual design replaces the physical intervention on the territory. Maps, that in Roman times were used mainly as survey of the existing elements of the territory, in the modern era prefigure the physical space and defines it. The remark reported by De Rubertis on the anticipative nature of architectural plans can be considered valid for plans in general: "It can be said that in ancient times, when the models were well-known archetypes and when constructive techniques did not present sudden innovations, the abstract idea of the building to be built was the only true plan, and its representation corresponded to its construction. Today, when architecture is continuous invention and when the technological evolution obstructs the establishment of the building customs, the representation coincides with the project and both predate the construction" (De Rubertis 1994, p.167).

As communication tools, maps have their own mechanisms, media and materials, which allows users to act on the space allows navigation, exploration, change of scale, the comparison. They anticipate issues and mechanisms of digital interfaces.

As interfaces for space, they provide access to the hidden layers of human space linked to the physical territory. Using representations, following references, interpreting cartographic codes, maps provide a way to navigate spaces *in absentia* – without the presence of the semi-otic referent (Nöth 1997, p. 446).

2.2 The Design of Augmented Spaces

By nature the map works on a paradox or, at least, on an inherent contradiction between his two natures. On the one hand, in order to be useful, the map has to match the territory, to establish a link to space and to act like space. The user must be able to use the map as if it was the territory itself. To point the finger on a representation of a geographical feature and refer to it as if it was the represented object. On the other hand, in order to tell a story and to act as a tool, this relation has to be distorted and the map space must be augmented by adding information that is not present in the real world, and likewise removing unnecessary details (Monmonier, 1996).

The design of maps as territorial communication media, combine these two aspects of mapping in the design of a virtual space. The map designer addresses the task of developing a parallel world, a new space the corresponds to the physical geography, and yet it augments it through the use of signs.

As the design of an instrument cannot be developed independently from its context of use, each map must be designed as a strategic artefact by assessing user needs, contexts, and goals. Its success is so much in the quality of construction as the compatibility between the communicative goal of the author that creates the representation and the aims of the user who uses it. The designer is asked to imagine a class of user objectives and create a new space that allows the achievement of such goal, while simultaneously keeping a reference to the actual space. Once again the relationship is symmetrical: on one hand user needs require the designer-author to devise some kind of virtual reality (to travel by sea, the virtual space of maps need to augment the perceptible territory with physical information about currents and sand banks, social information about laws and territorial borders, etc...), on the other hand, this artificial space affects the user's freedom of by limiting the space of possible actions.

In this delicate relationship, design responsibility is expressed in the development of a cultural tool: the operations of abstraction, augmentation, and choice of language contribute to the creation of a new reality that is the basis of user intervention. The designer takes the responsibility to decide what exists and what is relevant: by drawing the new territory he distinguishes the relevant from the secondary, the permanent from the transitory, the visible from the invisible.

3. The Rise of Digital Space

In the past decades, in the context of digital communication, scenarios related to interfaces for the territory have been the focus of a series of significant changes and developments. Since internet joined the media system, it has had an ambiguous and hostile relationship with space.

Starting with the first hypertexts of the 1990s, the rhetoric of new media seem to herald the start of a new era and, above all, the start of a new space: *cyberspace*. Cyberspace is presented as a negated space, a topology without horizons made exclusively of nodes and connections, an anti-space that surpasses the intrinsic limitations of geographical space: a space free of hurdles, without borders and devoid of distances to cover. In 1995, Nicholas Negroponte published "Being Digital", incorporating an eloquently titled chapter "Place Without Space" in which he foresees more or less the same things for the future of the net: "In the same ways

that hypertext removes the limitations of the printed page, the post-information age will remove the limitations of geography. Digital living will include less and less dependence upon being in a specific place at a specific time" (Negroponte 1995, p. 165).

Despite the visionary style of the passage, it still not possible to deny the accuracy of this forecast. While the concept of virtual reality predates by a few decades the birth of the web, it seems to find its unexpected realization with the Internet: a new reality described by a strangely spatial terminology (cyberspace, web sites, information highways) that doesn't provide an extension of the world, but some kind of alternative, a space with laws opposite to those of the geographic territory.

Ten years after the inception of the web, however, without revolutionary fanfare, the web landscape is undergoing a major shift and, with it, also its relationship with space. A further space emerges beside the geographic space and the space of representation: a new data-space created by geo-positioned contents defines a digital match to the physical space. Atomic contents, described by their correspondence to the geographical space are online, often freely available. Static or real-time information of social, relational and authorial nature is available to be rearranged and remixed, mapped over a territory which becomes a social and personal space, defined by a reference to the geographic grid. Data coming from National Geographic reportages, databases of governmental agencies, research institutions or private enthusiasts, information retrieved from online forums, automated traffic observers or police database, all become data layers of a digital space made of texts, data, and media.

Tim O'Reilly, with analytic acumen and a marketing spirit, popularized this new net "Web 2.0" (O'Reilly 2005), suggesting the transition of new dynamics in the creation and management of internet content. While the "first web", although structurally decentralized, still mirrors communicative models similar to broadcasting in which a few large producers supply monolithic content to a vast market, on the other hand, the "second web" – the web of blogs, social networks and wikis – is modular, distributed, made up of small atomic contents, independent of the support, created and diffused by a multitude of small subjects.

The decentralized infrastructure model is somehow matched by a similarly decentralized communication model, where the user is both spectator and creator of content, and most importantly he is allowed to reuse and remix by his own rules contents produced by other users. Beside the classic monolithic website, defined by a hierarchical structure of fixed content, a myriad of micro modules are appearing: blog posts, wiki edits, shared photos, YouTube videos, and hundreds of other 'components' provide atomic materials to be used independently. In this context, the contents take different forms depending on their use. Posts by a community of bloggers may be presented in classic chronological order, or they can be arranged in a network structure, or put in folders according to the subject selected by an editorial team, or still, they can be mapped on the territory. The space in this context is no longer the abstract space of the networks, but a social space with a correspondence on the geographical territory.

Geography, which was also disowned by the boom of the 1990s, reacquires the lost value: the space that internet refers to is no longer the cyberspace of the infrastructure, but the social space of the users (Abrams, Hall, 2006). A personal space that is no longer 'de-territorialized', and that chimes with the geographical territory. If the online maps of the 1990s represent exclusively a digitised version of the regular road maps, with the possibility of automating searches and working out routes, the new mapping systems provide a new support for the communication, information and narration, which functions as a connection between the virtual and the real, placing the digital information in the physical world. Just like the blog

structure provides the temporal support for the contents, the new map-based interfaces are the experimentation of a new support for information, documentation and narration, that expose different kind of contests and online or offline formats. In 2005, Google launches Google Maps, giving anyone the possibility to interface with the mapping platform and visualise any kind of content with geographic coordinates.

Institutional websites, such as National Geographic and Discovery Channel provide a geolocalised version of many of their contents, which, therefore, are made accessible not only through the traditional website, but also on Google Earth, streaming a kind of geo-reportage made up of images, descriptions and videos placed on a digital map.

Similarly, government agencies, research institutions and private enthusiasts have shared their databases thus allowing the creation of interactive thematic maps. Listings forums like craigslist.com have become collaborative maps of real-estate property that allow to look for apartments in a virtual space designed for that purpose, traffic data observers create real-time street maps augmented by information on traffic congestion and gasoline prices, police databases draw maps of crimes and offenses augmenting the urban space with statistics and risk annotations.

The more compelling operations, however, are those in which the mapping calls for user participation in creating the map. Starting with the photos shared on websites such as flickr.com it is possible to create an alternative tourist guide with photos and comments; on wiki-mapia.com, the territorial description is collaborative, operating with the users who are asked to identify elements on the earth's surface seen via satellite.

Not all maps are collaborative: some interesting experiments personally reinterpret literary genres through Google Maps by adding on the territory a layer of memories and free associations. Nonlinear narrative experiments add links between physical places based on narrative structures, autobiographies augment the physical space with past experiences and life memories, documentaries provide paths through the city and augment buildings and streets with informative contents, personal guides highlight less common places through different types of contents: photos, text, video, sounds, music.

Although the current limitations of mapping systems allows only for a limited intervention on the visual aspects of cartography, it is clear that digital maps are part of the repertoire of media communication designers. Fifteen years after the 'birth' of cyberspace, the idea of virtual reality is anything but extinct, on the contrary, it is enjoying a new surge of enthusiasm thanks to the speedy diffusion of alternative 'virtual' territories, which augment the territories found in real life through the connection of digital resources. While the nature of the dialogue between digital worlds and the geographical space has yet to be defined, nevertheless a new web is emerging that seems to have resumed a dialogue with the territory. The digital mapping of geographical space is both a way to return to the territory, to reclaim the reality of internet content, and a symptom of the broadening of the gap between a map that becomes increasingly important and a territory that becomes increasingly distant.

4. Augmented Reality Scenarios for the Territory

While the combination of the tools of digital cartography with the atomic contents of the recent web, lead to a renewed interest in the territorial communication and in the construction of alternative realities, simultaneously, technological developments in the field of

mobile media and devices have created tangible opportunities for new representation of the territory.

Augmented Reality technologies, now more than 20 years old, seems to be getting a renewed attention in communication design research. While many different approaches to augmented reality have been tried, the technology itself is well understood and it can be described in three steps:

1. The device detects the object of the user's object of interest and/or the user's surrounding space. This can be done in many different ways: through the use of particular headsets, cameras, location sensors, proximity sensors, body or head-tracking technologies, etc.
2. The device identifies the objects of interest and the objects present in the user's surrounding space and retrieves any information or contents that are available on such elements. The identification of relevant elements can be done through computer vision techniques (either with the help of specific markers or with scene recognition technologies), or through the identification of the geographic extension of the relevant space (with the help of GPS sensors, or location technologies). The relevant information and contents can be then retrieved through publicly accessible services, or specific contents can be developed exclusively for the application.
3. The device augments the user's perceived space through the superimposition of digital data, information or contents. When the experience of the space is enjoyed through a digital medium, such as a screen or some kind of HUD display, the information is usually composed in the screen through which the user is experiencing the space. In case of display-less augmented reality, the information is usually projected on the space itself through the use of portable or fixed projectors.

Whereas most of these techniques are wide known and have been extensively experimented, recent improvements of such techniques have been incrementally improving the refinement of the spatial registration, the responsiveness to movement from the user and the accuracy of the integration between reality and virtual elements, making it possible to develop real-life applications for the technology.

Augmented reality, in some of its more traditional forms, as been applied to *advertising* (usually by providing additional content on top of specially marked leaflets); *industry* (by marking connections and positions of elements to be assembled in complex industrial processes); *surgery and medical procedures* (where augmented reality displays are used to show the positioning of hidden bodies); *navigation* (where physical reality is augmented with directions, wayfinding support, traffic information, etc.); *engineering and product design* (where augmented reality is used to compare digital and physical mock-ups); *architecture* (to allow the superimposition of the designed building on top of the physical territory).

While the application of different forms of augmented reality in technical contexts has been explored in the past, the exponential diffusion of digital supports, and in particular the diffusion of personal and mobile communication devices, together with the diffusion of always-on internet connectivity, have recently started to move the focus of research toward the analysis of the role of augmented reality as a communication media.

This technological and mediatic shift, is particularly visible in the field of mobile communication and mobile devices: the convergence between media is fostering the merging of

very different technologies such as digital video imaging (usually found in video recorders), geo-location (usually found in navigation systems), color screen output (usually found in PCs), in portable devices with relatively high computational power; GPS, digital compass and accelerometers allow not only to locate a device in space, but also to detect its orientation with respect to the magnetic north and to gravity: Access to internet and the presence of on-board memory provide the possibility to store and compute the position of virtual objects or entities in order to overlay them in top of the physical space; The camera and the screen give the imaging capabilities requested, that allow to superimpose the virtual entities created by the application, on top of real-time images acquired from the video stream.

3.1 Augmented reality and annotated reality

In this context, the mechanisms of digital augmented reality and their application to consumer devices such as Smartphones provide the field of Territorial Communication with a new tool that, while still working on the creation of virtual spaces like in traditional cartography, it subverts the usual modalities used to create a link between the real and the virtual. While in traditional cartography the process of augmentation is carried out in the representation by adding signs without referent in the semantically significant space of the map, in augmented reality devices this augmentation takes place on the physical space itself, or (at least) during the perception of the physical space, reducing the distance between the representation and the represented object.

The invisible properties of space that in maps were appearing exclusively as signs on the virtual space of the representation, are now assuming the consistence of 'concrete illusions' and are finding their place in the domain of the perceived space. The correspondence between territory and information happens *in praesentia* – in the presence of the object that is being represented, and the construction of a virtual world is moved to the realm of the perceptible: it is mixed in with the real, not just semiotically, but rather perceptually.

While the similarities between the augmentation provided by cartography and the extension provided by augmented reality should be clear by now, the differences between the two media contain the direction of research that has yet to be explored.

The unmediated nature of augmented reality allows for a direct experience of the represented world, that is not only 'read' as a text, but conversely it is 'felt' and experienced. In this sense, while the possibilities of this new kind of technologies would allow for a new wave of applications in the realm of communication design, the current state of the art in applications for the territory are proposing mainly some version of 'annotated reality' in which the augmentations are limited to the overlaying of textual and photographic annotations, similar in nature to the popups that appear on digital mapping systems. Examples in the field of communication design for the territory include plenty of 'augmented reality guides' that include labels or texts related to the objects/places visited, links to related Wikipedia pages, automated annotations of the real world with information coming from geo-tagged online databases and inclusion of photos coming from online services through the use of floating popups.

In other words, the creative operations involved in the construction of an augmented space, more often than not are restricted to the superimposition of 'virtual signs' and virtual communicative artefacts as captions, icons and comments to real world objects and features.

Space itself, and more in general, the perceptual and experiential elements involved in the exploration (and creation) of a space, are often left out.

3.2 Toward an Experiential Approach to Augmented Reality

In the framework of McLuhan's research, the concept of augmented reality can be read as a clear example of 'medium as extension' (McLuhan 1964, p. 7). Media, defined as "extension of ourselves" allow the user to perform actions that would otherwise be impossible, or more difficult. The classic examples cite plows that extend our arms and hands, wheels extending our feet and our ability to move, but also language that extends our ability to share thought, writing that allows us to externalize it. Technologies and media, from this point of view, are not only mere additions to human existence, but influence deeply the actions of the user and the way he thinks, feels, acts, perceives. Technologies, regardless of the content of their message, affect the way in which users perceive the world and influence their actions and expression (McLuhan 1964, 9).

Both maps and augmented reality are media that can extend our grasp on the territory and provide information that is not visible on the physical space itself, but while maps are design to act *in absentia*, in absence of the represented object, augmented reality is a communication tool that by definition acts *in praesentia*, as an extension to a perceived reality. The consequence of this difference in the structure of the two media is reflected on their role as extensions: while maps require an action of imagination and abstraction from the user in order to match the represented reality with the physical world, augmented reality technologies provide a 'hotter' version of the medium, that doesn't require as much user involvement while providing a perceptively richer experience.

Nonetheless, despite the properties that distinguish it from cartography, augmented reality is still mainly used as a cold medium, a three dimensional, contextualized version of the semantic mechanics of maps that serves as a cognitive extension of our brain: it gives us the possibility to know things that are not visible, it adds annotations on top of 'mute' objects, it contextualises artefacts making visible the unperceivable data layer that describes the object in terms of relations, distance, metadata. On the other hand, the perceptual extensions of augmented reality have not been developed quite as much: the mildly mediated nature of augmented reality tools makes it possible to extend not only cognition but also perception, creating illusive spaces that can work on the immersive dimension of the experience. In this context, the self-imposed limitation to three dimensional graphics overlay on top of recorded imagery is artificially restricting the field of action of augmented reality.

Auditory augmentation that provides voiceovers for the exploration of the territory, *narrative augmentation* that injects the experience of the city with narrative clues that lead the explorer through scripted paths, *historical augmentation* that adds contextual elements to the territory to provide an historical context for the architectural landscape, could all provide an exploratory and sensory augmentation to the exploration of a space designed in order to extend the experience.

While some steps in this direction are being taken, especially in the field of augmented reality gaming, the application of such results to the field of urban and territorial communication is usually limited to the technical re-creation of once-present territorial features (such as ruins, buildings, or landscapes) as they previously existed, with limited attention to the

expressive capabilities of such reconstructions.

In this context, we propose a research line focused more on the experiential aspects of augmented reality, that without relying exclusively on the superimposition of synthetic images, can provide an improvement of the immersive experience of space. Augmented reality, in other words, has yet to exploit the features that make it different from a map.

5. Conclusions

As a discipline, Communication Design can contribute both with a theoretical approach and with a series of low-tech experiments on the augmentation of experience.

From a theoretical standpoint, *design* in general, and more specifically *communication design* advocates a prosthetic theory of artefacts (Anceschi 1993): artefacts, in other words, are designed as prostheses of the user's body. They augment and extend physiological human capabilities in order to allow the user to accomplish otherwise unattainable aims or to extend its reach. In communication design, researchers like Anceschi have been proposing a prosthetic theory of communication artefacts that extends on McLuhan's prosthetic theory of media and technology (McLuhan 1964). In this disciplinary framework, augmented reality (in general), can be read as an artefact that augments or extends human perception in to the digital world, and not only a 'cognitive prosthesis' as it is currently intended in many augmented reality applications.

From an experimental standpoint, communication design has long been working with pre-digital tools for the augmentation of reality. Communication design formats that add information to physical space of the territory such as city guides, narrative maps, audio tours, environmental signage, on-territory communication have been, since decades low technology expressions of augmented reality, and much research has gone not only into the informational components of the artefacts, but also on the expressive dimensions that contribute to the user's experience.

While the cartographical approach developed through thousands of years managed to merge physical and cultural realities in the space of the representation, the present task is that to explore the experiential possibilities of communication of the territory. Differently from maps, augmented reality also provides access to a more expressive medium, a 'higher resolution' technology that has to be exploited on the perceptual and experiential dimension in order to help expose the hidden layers of the human territory.

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McLuhan and New Communication Technologies: From Posthumanism to Neuromedia

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1. Introduction

The rapid transition from prototypes to commercial products together with the significant progress in experimental researches in robotics and neuroengineering are two determinant factors for the increasing presence of new communication technologies in our society.

In this context, it is necessary to find a theoretical framework for current and future media research. Among the numerous proposals, it is especially notable the contribution of Raymond Kurzweil, who postulates that the speed of technological change increases exponentially. As a consequence of this situation, this intellectual sustains that in the very near future (2045), we will be able to transcend the limitations of our biological bodies and brains. In that way, there will be no distinction between human and machine.

This futurist prediction must be taken into account since currently there is a growing interest in developing a neuromedia system based on new researches in neuroscience and robotic devices, which results are becoming more and more present in our daylife.

At the beginning of XXI century scientists and artists share a common objective: the search of a new paradigm to bring us some answers about this new situation and, at the same time, to generate new questions. Are still nowadays Marshall McLuhan's postulates a source of inspiration? Is it possible to assume his mediological method as a solid framework for postmedia condition? Is it still true that McLuhan has been a pioneer for the Information Age when it is closer the possibility of connecting our brains to supercomputers thanks to new researches in neuroscience and Artificial Intelligence (AI)? In such an antisystemic horizon, is it possible to establish a connection between McLuhan's theories, Posthumanistic perspective and BCI Technology (Brain Computer Interfacing)?

2. The state of the question

In the early 1960s Marshall McLuhan revealed how communication technology affects cognitive organization. In the prologue to 1962's *The Gutenberg Galaxy*, he announced that media are 'extensions' of our human senses, bodies and minds. A key concept that nowadays must be reviewed. In fact, with neuromedia McLuhan's theories become extraordinarily visionary.

As Caspar Stracke recalls in his essay about the age of cerebral simulation, the US Congress declared the 1990s to be the 'Decade of the Brain' and approved a research program costing billions of dollars. This measure was the result of an old dream: the desire to render human thought visible in order to open up a new reliable and simultaneous communication system.

For the last years many theoreticians and researchers have been working on bio-digital communication challenges. Most of these studies are not only linked to systems of *Virtual Reality* (VR), *Augmented Reality* and 3D Vision, they are also based on new researches about 'artificial senses' (Tokyo University's Yokose-Tanikawa Laboratory, 2010) and, particularly, to post-human condition in media sphere.

This is an ideal context to develop and improve new interfaces through BCI Technology (*Brain Computer Interface*) where McLuhan's philosophical and technological perspective will turn out to be essential to redefine multidisciplinary researches about the brain and communication processes from a post-organic view.

In the field of brain research, at C.I.T.'s Biological Imaging Center, Steve Potter is working on the first bi-directional, multi-channel interface based on a biochip that measures all possible stimulus reactions.

Another interesting example is the project 'The MIT Intelligence Initiative' in the Center for Biological and Computational Learning at the Massachusetts Institute of Technology (MIT) in Boston (USA), co-directed by Tomaso Poggio and focused on the interrelation between neurosciences and AI.

In Italy, there is an innovative initiative called 'Trip to the moon' led by Roberto Cigolani at the Istituto Italiano di Tecnologia di Genova. This project consists on the creation of the most perfect humanoid robot with arms and legs, eyes and skin with tactile sensitivity, a target that should be reached by 2023. These researches refresh McLuhan's studies or Futurist Kurzweil's postulates about 'Technological Singularity'.

Instead of focusing on the development of computer sciences, current studies about neurosciences shows an increasing interest in the interrelation of the human brain and new media, following the anthropological philosophy of Marshall McLuhan.

3. From Global Village to Virtual Reality

First of all it must be considered the present value of the concept of cyberspace. This term was coined by the science fiction author William Gibson and popularized by his 1984 novel *Neuromancer*. In the late eighties, Jaron Lanier made it technically possible. He created a three-dimensional space in which it was possible to enter, interact and move around as if it was a real space, but was virtual indeed. Today, this achievement is the basis for every possible evolution of communicative devices and the source of psycho-technological consequences that motivates ethical as well as political and philosophical debate.

The conception of a virtual space for communicative interaction is mostly inspired by McLuhan's theories, as indicated by Woolley (1992). It is specially a reflection related with his proposal about a shrinking space since electricity has reduced the entire world into something not larger than a small village. The Canadian theorist established that:

After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. (McLuhan 1964, p. 19).

From this statement, it is clear that the concept of 'Global Village' is more related to an extension of some human faculties in a technological network than to postindustrial society. As indicated by Woolley, McLuhan made the idea of an integrated planetary nervous system a part of our popular culture. In the sixties, he started to talk about a simultaneous happening where time and space has vanished. The electronic media enable to transmit any kind of information, involving everyone simultaneously through digital computer systems and also telepresence technologies.

In the eighties such innovative systems have already been tested by NASA Department of Human Factors Research Division to find out which types of relations can be established between a computer and its operator. At the present time, these systems are used for several applications, sometimes really close to science fiction imaginary. Some of the latest examples are the experiences in three-dimensional telepresence or holographic transmission in 3D, only anticipated by cinema and literature.

Recently, it has been published an interesting article in *Nature* about holographic three-dimensional telepresence in which some researchers explain that:

Holography is a technique that is used to display objects or scenes in three dimensions. Such (3D) images, or holograms, can be seen with the unassisted eye and are very similar to how humans see the actual environment surrounding them. The concept of 3D telepresence, a real-time dynamic hologram depicting a scene occurring in a different location, has attracted considerable public interest since it was depicted in the original *Star Wars* film in 1977. However, the lack of sufficient computational power to produce realistic computer-generated holograms and the absence of large-area and dynamically updatable holographic recording media have prevented realization of the concept [...] 3D telepresence is demonstrated by taking multiple images from one location and transmitting the information via Ethernet to another location where the hologram is printed with the quasi-real-time dynamic 3D display. Further improvements could bring applications in telemedicine, prototyping, advertising, updatable 3D maps and entertainment. (Blanche et al. 2010, p. 80).

Those projects are not unique references. For more than five decades the Advanced Research Projects Agency (ARPA) has been conducting several studies to prove that it is possible to 'enlarge' human intellect through a more interactive relation with computers. Human-machine interaction already passed by and has been supplied by human-computer cooperation. In this new era, experts have established that VR must be understood as a technology capable of merging the user with his own virtual alter ego, or *doppelgänger*, in order to create a real symbiosis between man and machine. It means that former interfaces may be soon completely replaced by new immersive platforms to develop experimental communicative processes.

Therefore, digital media must be understood as 'intermediate environment' or 'second mind', as stated by Derrick De Kerckhove:

Computers mediate between the internal nervous system of individual users and external processing systems: they act as interfaces between the psychological and the technical, just as video games provides interfaces between the neurological and the electronic responses. This interaction is an example of a close biotechnical exchange. Electricity, which is produced both organically and technologically, is the common ground [...] The local biotechnical exchanges between body, mind and machine are now linked to the global environment by data processing and worldwide relays. (1997: 209).

It means that 'The electronic media are becoming intermediate environments, accessing the intimate reality of our private psyches and providing a bridge to the outside world' (De Kerckhove 1997: 209).

The result of such hybridization process and media extension was theorized by McLuhan and defined as *remediation* by Bolter and Grusin (2009). The information is becoming more and more similar to biological growth, a Darwinian process, a theory that, as suggested by De Kerckhove, is part of McLuhan's postulates:

In this electric age we see ourselves being translated more and more into the form of information, moving toward the technological extension of consciousness. That is what it meant when we say that we daily know more and more of ourselves into other forms of expression that exceed ourselves. Man is a form of expression who is traditionally expected to repeat himself and to echo the praise of his Creator [...] By putting our physical bodies inside our extended nervous systems, by means of electric media, we set up a dynamic by which all previous technologies that are mere extensions of hands and feet and teeth and bodily heat-controls- all such extensions of our bodies, including cities- will be translated into information systems. (McLuhan 1964: 71).

Thirty years before the advent of VR, McLuhan anticipated our current new media landscape. Nowadays, his disciple, De Kerckhove, understands VR as a multisensorial extension of ourselves, which allows an interaction between each others creating a sort of 'collective intelligence' analogue to electronic networks.

This theoretician sustains that VR can be extended to telecommunication, developing new collaborative communication channels between users. On that way, it is established a cooperative thinking where traditional interfaces are fading away. He indicates that new devices such as optical interfaces or brain signal receivers allow an effective and immediate interaction between human thoughts and computer-machines.

Another pertinent issue, introduced also by McLuhan, is the level of interaction in each medium. According to the Canadian theoretician, the incoming new technologies exert a gravitational effect on cognition which affects our perceptual habits and our social interactions. New media revolution revisits the difference between the languages of seeing and languages of hearing: new interfaces for mobile reading and telecommunication or new vision machines (as 3D Holographic Transmission and Tridimensional Telepresence) constitute a milestone in the theoretical revolution about media hybridization and the co-existence between senses and technology, set up by McLuhan:

Our extended faculties and senses now constitute a single field of experience which demands that they become collectively conscious. Our technologies, like our private senses,

now demand an interplay and ratio that makes *rational* co-existence possible. As long as our technologies were as slow as the wheel or the alphabet or the money, the fact that they were separate, closed systems was socially and physically supportable. This is not true now when sight and sound and movement are simultaneous and global in extent. A ratio of interplay among these extensions of our human functions is now as necessary collectively as it has always been for our private and personal rationality in terms of our private senses or 'wits', as they were once called (McLuhan 1962, p. 5).

As well as 3D visualization, obtained through VR glasses, it is closer a new type of virtuality based on sensitivity. The sense of touch now replaces pure cognitive visualization. In the near past, VR applied to touch was exclusive for medical-diagnostic purposes but currently it is also applied for entertainment and infotainment.

It demonstrates McLuhan postulates. The Latin word *tangere*, which means 'to touch from the inside' makes more sense, being applicable to 3D as we know it nowadays. In fact, VR becomes not only 'a projection of our own nervous system, but the electronic enlargement of touch' as De Kerckhove indicates, based on McLuhan's theory:

Our very word 'grasp' or 'apprehension' points to the process of getting at one thing through another, of handling and sensing many facets at a time through more than one sense at a time. It begins to be evident that 'touch' is not skin but the interplay of the senses, and the 'keep in touch' and 'getting in touch' is a matter of fruitful meeting of senses, of sight translated into sound and sound into movement, and taste and smell. The 'common sense' was for many centuries held to be the peculiar human power of translating one kind of experience of one sense into all the senses, and presenting the result continuously as a unified image to the mind. In fact, this image of a unified ratio among the senses was long held to be the mark of rationality, and may in the computer age easily become so again. For it is now possible to program ratios among the senses that approach the condition of consciousness. Yet such a condition would necessarily be an extension of our own consciousness as much as wheel is an extension of feet in rotation. Having extended or translated our central nervous system into the electromagnetic technology, it is but a further stage to transfer our consciousness to the computer world as well (McLuhan 1964, p. 67).

Another crucial point of McLuhan reflections is the *feed back* debate among the relation established in media process between sender and receiver. It is the basis for scientific and technological researches about Brain Computer Interfaces (BCI) applied to telecommunications.

On this regard, there have been conducted several studies about aesthetic applications of neuroscience and Artificial Intelligence. One of the most interesting proposals has been suggested by Peter Weibel, who maintains an innovative form of 'genetic art': the neurocinema (*Future Cinema*, MIT/ZKM, 2003).

Weibel supports the possibility of generating a new net composed by interconnected brains able to receive images and sounds through quantum or ultrasounds. It means that whereas in the nineteenth century machinery was related to experimental physiology, the new machines of vision will be related to neuroscience and cognitive science. With the future cinema, the cinematographic apparatus will device the brain, not the eye ('trompe le cerveau, not trompe l'oeil'). Weibel explains that thanks to pulse-based temporal codes that directly

stimulate the brain with the help of neurochips or brain-chips, there would be perception without the senses, seeing without the eyes. The result is that simulation would be replaced by stimulation, it means that the brain would become the screen.

Two more intellectuals related to this futurist scenario are Hans Moravec and Greg Iles. We should also remind the work of the videoartist Pavel Smetana, who performs interactive installations based on bio-signals as *lilith (brain-in-the-machine)* (2006). As Weibel, Smetana is also interested in the application of neurotechnology and the theorization of new media paradigms. Related to these projects, McLuhan also indicated that: 'the artist is the man in any field, scientific or humanistic, who grasps the implications of his actions and of new knowledge in his own time. He is the man of integral awareness' (McLuhan 1964, p. 71).

Here it is a description of Smetana's piece entitled *lilith (brain-in-the-machine)*:

This interactive installation experiments with virtual and mixed realities, game technologies and bio-signals [...] The image and sound of the amorphous landscape environment reacts to the data coming from the viewer's brain and heart activity sensors. As in the preceding installation, 'The Room of Desires', the visitors experience a journey through only the virtual landscapes into which their own physical and psychical (psychological) mental condition leads them. The virtual landscapes, originating from the 3D engine used in computer games, are projected stereoscopically directly in front of the visitors, who can experience a situation resembling daydreaming in a private 3-D movie house [...] Meeting with artificial beings (avatars) controlled by the artificial intelligence modules also forms a part of this investigative journey.

The installation uses the principles of biological feedback, with real time analysis and interpretation of biophysical signals on the basis of emotional response from the participants. After entering the project room, the visitor receives stereoscopic glasses and headphones. The sensors scan three kinds of bio-signals: on the head, the sensors monitor electro-encefalographic signals (EEG), from the forearm, information about the heart pulse frequency (EKG) is received and on the finger, galvanic skin resistance. These parameters provide the image of actual physical and psychical conditions and are transferred to MIDI signal. That means that with the speeding up of the pulse, the rhythm of the image and sound also speeds up. The projecting room is also equipped with the motion capture system monitoring the detailed position and movement of the participants. Therefore, it is not a 3-D space entirely defined beforehand, but a space for investigatory mental activity (Smetana 2006).

Visionary McLuhan's postulates can also be related to those new humanoid robots capable not only to see but also capable of touching through a tactile sensitivity. These prototypes have been designed by the already mentioned MIT Center of Biological and Computational Learning and the Istituto Italiano di Tecnologia di Genova for the project 'Trip to the moon'.

After a synthetic review of some of the most significant projects developed in scientific, technological and artistic sectors we can state that we are witness on a key epistemological transition. Some already mentioned devices, as neuronal interfaces, neuromedia and robotics, together with VR systems, augmented reality and three-dimensional telepresence are strongly influencing our current socio-cultural condition.

Kurtzweil supports also this idea:

Understanding the methods of the human brain will help us to design similar biologically inspired machines. Another important application will be to actually interface our brains with computers, which I believe will become an increasingly intimate merger in the decades ahead (2005 p.194).

Related to the concepts of *mind uploading* or *mind transfer* introduced by the writer Hans Moravec in his novel *Mind Children* (1988), Kurzweil sustains that 'uploading human brain to become a figment of your computer's imagination' could come true. And what is more:

By the time we have the tools to capture and re-create a human brain with all of its subtleties; we will have plenty of options for twenty-first-century bodies for both nonbiological humans and biological humans who avail themselves of extensions to our intelligence. The human body version 2.0 will include virtual bodies in completely realistic virtual environments, nanotechnology-based physical bodies, and more (Kurzweil 2005, p. 199).

Under these predictions, neuroengineering leading laboratories, as the directed by Ed Boyden at MIT, are developing new interfaces to improve new possible connections between human brain and computer. Some recent experiments have been put into practice for medical and rehabilitation strategies, but also for communication and entertainment devices. One interesting example, among others, is an interface which allows to control through our thoughts our avatar with a special helmet. This prototype has been exhibited by Guger Technologies at CeBIT 2010 (Hannover).

As mentioned previously, we are entering in a new era, where hybrid systems will be more and more present in our daylives. With the advent of *biocomputing*, the limits between computer science and biotechnology will be soon avoided. This new science consists on the construction and the use of computers which act like living organisms or contain biological components, so-called *biocomputers*.

There will be soon a complete integration between organic and unorganic, natural and artificial, as stated by several intellectuals who have coined new concepts as *Posthumanism* and *Singularity*. The mechanical man introduced by the technological imagination of Filippo Tommaso Marinetti and his Futurist colleagues is closer than ever.

Neuro-prosthesis will approximate man and machine as announced by ancient avant-gardes at the beginning of XX century. With the neuromedia, old interfaces will be supplied as De Kerckhove stated (1991). In that way, interfaces won't be any more tools for communicative purposes (*medium*) but new devices for a future tecnosphere.

Raymond Kurzweil (2005) and Vernor Vinge (1993) define the concept of *Singularity* in terms of the technological creation of human superintelligence which would represent a breakdown in the ability of humans to model the future thereafter.

Vinge was the first to use this term in a 1983 article, and a later 1993 article entitled 'The Coming Technological Singularity: How to Survive in the Post-Human Era'. In this text, he explained that within thirty years, we would have the technological means to create superhuman intelligence. An apocalyptic statement that would imply the human era.

The dilemma felt by science-fiction writers will be perceived in other creative endeavors [...] We will see automation replacing higher- and higher-level jobs. We have tools right now (symbolic math programs, cad/cam) that release us from most low-level drudgery.

Put another way: the work that is truly productive is the domain of a steadily smaller and more elite fraction of humanity. In the coming of the Singularity, we will see the predictions of *true* technological unemployment finally come true [...] And what of the arrival of the Singularity itself? [...] We will be in the Posthuman era. And for all my technological optimism, I think I'd be more comfortable if I were regarding these transcendental events from one thousand years' remove. .. instead of twenty (Vinge 1993).

Vinge concludes that: 'the post-Singularity world will involve extremely high-bandwidth networking. A central feature of strongly superhuman entities will likely be their ability to communicate at variable bandwidths, including ones far higher than speech or written messages' (Vinge 1993).

Kurzweil puts the date of the Singularity at 2045. He estimates that, given the vast increases in computing power and the vast reductions in the cost of same, in that year, the quantity of artificial intelligence created will be about a billion times the sum of all the human intelligence that exists today.

A recent article published in *Time* deal with Kurzweil's paradigm:

In Kurzweil's future, biotechnology and nanotechnology give us the power to manipulate our bodies and the world around us at will, at the molecular level. Progress hyperaccelerates, and every hour brings a century's worth of scientific breakthroughs. We ditch Darwin and take charge of our own evolution. The human genome becomes just so much code to be bug-tested and optimized and, if necessary, rewritten. Indefinite life extension becomes a reality; people die only if they choose to. Death loses its sting once and for all. Kurzweil hopes to bring his dead father back to life.

We can scan our consciousnesses into computers and enter a virtual existence or swap our bodies for immortal robots and light out for the edges of space as intergalactic godlings.

Within a matter of centuries, human intelligence will have re-engineered and saturated all the matter in the universe. This is, Kurzweil believes, our destiny as a species. (Grossman 2011).

Many of these predictions are putting at the center of the debate also the problems of limits and implications of these processes from a bioethical and socio-political perspective. According to some authors (Marchesini 2002), these risks can be achieved only if man will remain linked rigidly to his humanist integrity.

4. Conclusion

In the XXI century, McLuhan's postulates have become an indispensable framework for current and future media research. With the establishment of the new intermedia paradigm, there is a growing interest in developing a neurocommunication and neuromedia system based on old researches in neuroscience, *Artificial Intelligence* (AI) and robotic devices.

The theory of cultural processes is becoming more and more related to biotechnological experiences. Direct interaction between new media and the brain would establish a new principle for interactive communication. The medium would be our own brain, a bio-digital revolution to ensure an information exchange without filtering or transmission error.

The *Posthumanism* and *Singularity* paradigms revitalize McLuhan's theories, opening new cognitive fields to explore based on the idea that computer and digital technologies are no longer designed and used as machines but integrated as cognitive partners. That is, not only as extensions of the nervous system but especially as amplifications of the intelligence of man.

After the assault implemented by McLuhan to Humanism with his determinist theories about tecnosciences and new media technologies, nowadays we have several new questions to reflect about. We must ask ourselves about the problem of the 'message' or 'content' (Gamaleri 1976) in neuroscience and neuroengineering as a new system of balance between the various communicative processes and all the actors involved. In this process, we are sure that the contribution of Marshall McLuhan will be an essential reference.

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Coming back to the body. The sensible experience and the bio-inspired technology

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1. Introduction

The work presented in this paper embraces a multidisciplinary approach. It invokes the scientific disciplines dealing with the consciousness, the bio-inspiration as a technological concept and the art as a solving or expression method. The main goal will be to understand certain phenomena associated with consciousness, specifically those related to extended perceptions. Therefore, the proposed approach follows two research paths: the analysis of the basic mechanisms underlying attention and perception and the use of bio-inspired techniques in order to facilitate the acquisition of extended perceptions. The final result will be a physical realisation by means of artistic installations.

The main objectives of the work presented refer back to ancient cultures and civilizations, for which extended perceptions were essentially an integral part of an individual. In our approach the technology will be used as a basic facilitator whose use will help to develop and enhance these capabilities. The solution examples will be demonstrated by means of two artistic installations, POEtic-cubes and Weightless spine. Both installations provide the capability of enhancing the user attention as a previous step towards the acquisition of extended perceptions. These installations have permitted an experimental evaluation of the proposed approach. The results obtained demonstrate its usefulness for tackling the problem posed.

2. Problem statement

Nowadays technology is changing the approach taken when dealing with extended perceptions. The "extension" capabilities are no more attributed to the consciousness or the body, but to the artefact that permits us to see, hear and perceive beyond what is visible, audible or perceivable by a human being. This fact is unquestionable, and actually it opens new opportunities for research and social evolution. However, the work presented in this paper is based on the assumption that most of the capabilities that give rise to what is considered "extended perception" exist in the human being itself.

The first step in addressing our target is the definition of extended perceptions. Another important aspect is to define the interest in working on this field, as well as to provide the

methodology and tools that should permit to achieve the proposed goals. In a first attempt extended perceptions can be defined as perception and understanding experiences different from the usual ones, being the differences either in clarity or in depth. Time, space and self have been historically concepts that were related to extended perceptions. Perception is something totally subjective and therefore different for every human being. Numerous practices dealing with the “stabilization” of body and mind provide in the end some of these extended perceptions, and brought to the limit enter the “sacred” field. It is especially in this last field, which can also be called mystic experience, where extended perceptions not corresponding to a pathological condition have been usually reported. The main goal of the work presented in this paper has consisted in the study and experimentation of these aspects in order to clarify certain mechanisms of consciousness.

At first sight it may seem that the approach is based on two apparently mutually exclusive concepts: the extensions offered by technology by means of communication artefacts or networks and the extensions provided by the work with the body-mind. Nevertheless, the proposed approach will try that both aspects influence each other.

New discoveries about the evolution and behaviour of living beings are opening new avenues for finding alternative solutions for everyday problems. This influence is especially recognisable in the case of electronics, since this enhanced knowledge about the behaviour, structures and principles underlying the functional organisation of living beings is driving the development of new architectures and devices.

Bio-inspired electronics tries to emulate some functional principles present in living beings so as to offer new devices able to provide more efficient solutions to a given problem. The main motivation behind this approach lies in the fact that living beings are based on mechanisms that, once translated into artificial systems, allow for solving complex engineering problems encompassing autonomous navigation in robots or information routing in communication networks. From the flying machine prototypes of Leonardo da Vinci in the end of the XV century down to the recent NASA projects to create planes that imitate the flight of birds, a huge amount of scientists and engineers have targeted the analysis and artificial replication of some of the basic properties that can be appreciated in biological entities.

The behaviour that can be observed even in the simplest forms of life is the result of the cooperation of a large number of complex systems. This cooperation leads to features, like development, replication, self-healing or learning, that permit living beings to efficiently interact with their direct environment.

From a global perspective it can be considered that these basic principles are structured around three main axes: phylogenesis, ontogenesis and epigenesis.

Phylogenesis encompasses all the processes that result in what is usually called natural evolution, i.e., the development of living species and populations driven by the pressure exerted by the environment. These processes have produced the huge variety of living beings that can be observed on earth. Ontogenesis refers to the development of an individual from the genetic code resulting from the natural evolution. The self-repair (healing) and self-test capabilities that can be usually observed in living beings can be considered as an ontogenetic mechanism. Finally, the epigenetic mechanisms, also known as learning abilities, permit a given individual to optimally adapt the capabilities determined by its genetic code to the specific features of the environment. Examples of this mechanism can be observed in the vertebrates in the central nervous system (constituted by a number of synapses much larger than the number of nucleotides composing the DNA) or in the immune system.

Even if the main starting point of this work deals with behaviours that are in the domain of consciousness, it is not possible to describe the list of consciousness behaviours that refer to the extended perceptions, but it is possible to take into account some of them.

From a scientific point of view, the main problem preventing the explanation of these behaviours is the measurement of the "qualia": "But given that only a being with an individual body and brain can experience qualia, this kind of description is not possible. Qualia are high-order discriminations that constitute consciousness" [1]. Some authors even deny the existence of the qualia and proceed to study them using scientific methods [2].

Some examples of extended perceptions are the inspiration, or the perception of time, space and self in a different way than usual. The inspired consciousness is a special case of extended perception by means of which the individual acquires clarity and certainty about a specific searched phenomenon. Inspiration places the human being in a state of extended perception, different from the normal one, where both mind and body states are different. Plato describes states of inspired consciousness in his works "Fedro, or about beauty" and "Ion, or about poetry", but he does not explain the mechanisms used to reach them [3], [4].

The states of inspired consciousness cannot be analysed for now from a biological point of view in order to imitate later the underlying mechanisms, as it can be done for instance with a swarm of bees. There are only physical or psychological records about these states or behaviours. There are no guidelines or recipes about how to reach them, and actually the scientific literature does not provide any cues.

Falling in love or mystic rapture or ecstasy constitute additional clear examples of extended perception or extended consciousness. The only thing that can be found in the literature are descriptions of those states or practices (usually meditation) that take the practitioner to those states.

The only confident aspect about these states lies in the fact that there is a modification in the space, the time and the self. Some authors [5], [6], [7] refer to this modification as a temporary self-suspension or self-removal. This phenomenon induces physical and mind perceptions radically different from those attainable in a normal vigil state. This state has been described in different ways by ancient cultures when referring to mystic practices, and it is usually obtained through a trance.

The modification of space, time and self is a feature that some authors ascribe to the use of network communication technologies [8], [9], [10], [11].

Jung describes feelings related to the features stated above in some studies about his patients. In this way, due to a swoon it could be possible to reach states described as: "The feeling of levitation, the change in the viewing angle and the extinction of the auditory sense and the kinaesthetic perceptions that accompany those states suggest a displacement in the location of consciousness, a kind of separation from the body or the cortex or brain, which is the supposed basis for the conscious phenomena" ... "Every feeling of weight vanishes" ... "the terms use to describe the feeling are: joyful, solemn, beautiful, beatific, happy, optimistic, exciting" [12].

In this work these states will not be considered as pathologic. On the contrary, a gently approach to their feeling will be tried as a mechanism able to extend the consciousness.

Considering the feeling of weightlessness or levitation mentioned above, it is worth noting that Italo Calvino [13] included it among his proposals for the XXI century. Using a wide range of literary sources, he points to the interest in this aspect both by writers and scientists. It also refers back to mythology, witchcraft, shamanism or sorcery, that is, anthropology of the popular imaginary where shamans levitate, witches fly using brooms and geniuses using carpets. Lightness is translated to gravity or weightlessness in science and to levitation in popular magic.

Approaching the field of technology and art, it is possible to find references to this topic in several domains, like the immersive spaces where centenary techniques like the *trompe l'oeil* permit to create a space illusion in the viewer. In the same way, virtual reality techniques permit to locate the user in a different place and time. Using a different approach, augmented reality also allows for adding extra data to external objects. The first two techniques not only create a new mental or cognitive reality, but also involve the body in this new reality, so that it is possible to achieve extended perception experiences.

Out of these practices, which are specific experiences, the technology that surrounds us in everyday life appeals more to a separation between body and mind than to their unity. The mobile phone, which is the element of physical contact of the physical body with the planet, loses that ability if there is no consciousness to use it as an object to be present. The problem created is that it becomes a purely mental apparatus and all our thinking is outsourced. It's very interesting to make a similarity between the image that offers a telephone in a hand and that offered by a rosary. The rosary seeks a connection between a person and the divine through prayer. The mobile phone is intended to connect a person with the rest of the world.

No doubt these considerations should move towards the importance of daily communication objects as objects of "present attention".

Our work has considered the attention (attention to the present moment) as an antecedent to the study of the extended perceptions. It is not an innovative field, but in fact it constitutes the ground for any sound work that tries to approach the states of extended perception. This has been confirmed during millennia by several cultures, and it was the goal of the practices that related the human existence with a sacred search for vital understandings, with an actual extension of the perception in a human being.

In short, Zambrano [14] says that the attention "is in fact the receptivity brought to the extreme, that is, addressed towards a specific field of perception or of thinking, that is, addressed to the external world or reflexively to the own world". As for its goal, she defines it as "a field of clarity, of enlightenment".

In a similar way, Bergson says [15]: "When the attention is forced the soul volunteers completely, but it simplifies or complicates itself depending on the level chosen to carry out its evolutions" ... "As a general rule, it is the current perception that determines the orientation of our soul".

3. Goals

The main difference between the work proposed in this paper and the alternatives that advocate that the network communications provide a different feeling of space, time and self lies in the fact that we are referring to a deliberate change in perception. A change in perception that permits an individual to clearly differentiate between a previous and a posterior state in the own body. A change whose sensitive record can be recalled and used at will. Bearing in mind these premises, the main goals to be fulfilled by the work presented in this paper should be:

- To explore how increasing attention can improve the apperception of the body and the environment and therefore glimpse or feel phenomena that would normally remain hidden from the common perception.

- To explore how these phenomena may be the basis for a possible change in the perception of human beings, or a possible evolution of consciousness.

4. Contribution

Based on the concepts explained previously, two art installations have been created: POEtic-cubes and Weightless spine.

The installations are experiments that try to make the person interacting to watch over her own body, learn from it, its relationship with space, possible extensions and enlargement of sensory and physical sensation that they can bring. The technologies with evolving and adaptive capabilities have enabled this experiment to be carried out, making it necessary to investigate new ways non-existent to date to create real environments that allow it. During the last two decades, the use of evolutionary environments has been performed virtually. The purpose of this research has been to take a step further and allow it to perform in real space and with three-dimensional objects, exceeding the previous two-dimensional representations of the phenomenon, as was the "game of life" [16].

The practical applications, POEtic-cubes and Weightless spine, show a space where visitors fill out the action for achieving the objective. Their interaction will create the work, the foreseen organisms. At the same time their interaction allows them to obtain information about themselves, for themselves, to perceive otherwise, to begin to realize their movement at present, their body, boundaries or limits of this and maybe it will lead them to take a stand, to feel (themselves) with other perceptual possibilities.

Both installations have two phases, first the one that forces to pay attention and a second phase is to perceive what you feel when you pay attention.

Below are some examples of the extended perception that was intended to get from both installations.

5. Description of the installations

5.1 POEtic-Cubes

It is a physical installation, a sculpture composed of nine autonomous robots with the shape of a cube, which organizes and takes shape in relation to stimuli coming from the environment.

POEtic-Cubes is located within the projects intended to cause a user's immersion in the set, offering on the one hand a mirror of the actions of participants, their tracking, and at the same time causing feedback: like sculptural morphology and behaviour are defined by the actions of the users, they are fed at the level of awareness of what happens in space. Although there are many projects in AL (Artificial Life), from the last two decades, that work the concept of immersion and response to acts of the participants, the innovative proposal of POEtic-Cubes is defined by a completely autonomous, distributed and local set with development, evolutionary, adaptation to the environment and emergent features.

5.1.1 Perception-feeling in POETic-cubes

The feelings that a priori were planned for the installation POETic-cubes are the following, although its use has also attracted a host of other interests:

1. Dividing attention between my body and my surroundings, my attention span increases so my vision and understanding can be extended.
2. The limits of my body do not end in the skin. Expanding the “kinesphere”.
3. Feel my body as a centre of gravity.
4. Increased sensitivity of internal states and external perception.

5.1.2 Functional operation of the installation

The cubes are in a dark room, so that when the room is empty they are grouped together as a 3 x 3 array, constituting a cell. Fig. 1 shows the initial grouping of the cubes in the installation. When a person or a group of people enter the room the cubes start to move and place themselves around the people (holding the same distance between them). Therefore, the cell divides itself and differentiates to create an organism. If the person or the group of people moves in the room (or even if one person moves the arms) the cubes move and the colours that are depicted in the displays change. Therefore, in this installation the people can observe how their actions determine the physical aspect of the organism (constituted by the set of 9 cubes), i.e., the phenotype, being thus a clear illustration of the genotype to phenotype mapping process. Learning (epigenetic) mechanisms can also be demonstrated since the reaction of the cubes (i.e., their movement) can be modulated depending on the actions done by people. The cubes also determine autonomously the state of the battery, and upon detecting a low battery threshold they go to a specific place in the room where the battery may be charged.

Every robot has some of the properties of a cell: they divide, take the same DNA as the mother cell, and the cooperation between these elements, an *emergent* process, permits to self-organize and create an *organism* that can change and evolve depending of its interaction with the environment (in this case the people who interact with them).

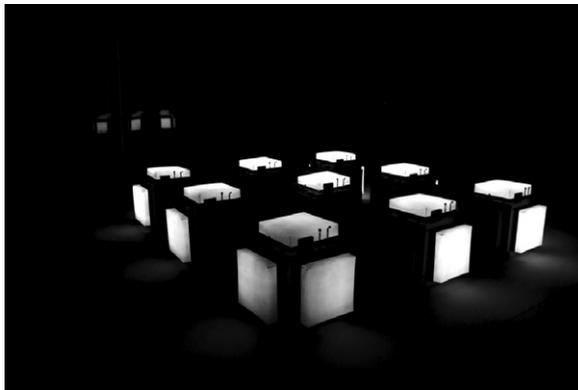


Fig. 1. Initial grouping of the cubes in the installation.

The colour shown in the displays is not random. Each light panel can reproduce the full range of RGB colour and the colour depends on the proximity between the cubes and the

proximity to the user.

The resulting shape obtained in the installation will depend on the distance between the centre of gravity (user or user group) and the location of the two nearest robots. Thus all robots, calculating each time a new position, which will define a new figure or organism and a new colour scheme, will sense any action outside the centre of gravity of any user or user group. Fig. 2 displays how people interact with the robots in the installation.

The overall view of the scene, both for their constant readiness of the constituent elements and the lighting, mirrors the emerging characteristics of the process [17].

The technical explanation of the process can be found in other publications [18].



Fig. 2. Interaction between participants and the robots.

5.2 Weightless spine

It is a physical installation, a sculpture consisting of ten autonomous robots that are organized according to a leader and forming a long line or tail that will follow the user on his journey in the room.

5.2.1 Perception-feeling in Weightless spine

For this project, attention was focused on a single objective of perception: attention to the spine and sense of levity, lightness and weightlessness.

5.2.2 Functional operation of the installation

The set of robots at the beginning remains without any order in the exhibition space. By detecting a heat source or person nearby the robots start an ordering and following behaviour of a robot after another. Once organized the entire structure can stand still, always at a distance of approximately 30 cm of the user or initiate a follow-up of his movements. At follow-up the column extends up sometimes reaching lengths greater than 10 m. The user can rotate around the room without breaking the chain structure of the robots. Fig. 3 depicts the structure once it has been formed.



Fig. 3. Structural organisation of the Weightless spine.

6. Experimental results

During the last decades several “immersive” or “reactive” art works have been developed that supposedly evoke an aesthetic, sensory or artistic experience. However, there are few studies that qualitatively or quantitatively assess the experience. Among them, one of the most significant could be the work “Osmose” and “Ephemère” of Char Davis, in 1995 and 1998 respectively, showing a immersive space, held in virtual reality with 3D interactive graphics and real time sound. The interaction is based on breathing and balance, and “the aim was to explore the interactive relationship between a perception and the world, for example, a place to facilitate self-awareness and awareness in space” [19].

The analysis of the experience on the proposed works has been done in two ways:

1. By convoking small groups of people specifically to assess the experience through a questionnaire.
2. Through observing the use of one of the two installations (POEtic-cubes) over the course of 3 months in its exhibition at the art centre: ARTS Santa Mónica, in Barcelona. In this case there were two ways to do this:
 - People who visit the site and whose behaviours are observed.
 - Through experiential workshops in which previously the installation, objectives and the way to interact were explained.

In the first case, we drafted a questionnaire whose questions referenced to broad concepts to make way for the user himself to elaborate on his personal experience on the use of both installations.

General guidelines for the questions about the installation POEtic-cubes, divided into different questions, refer to:

1. First impressions in the interaction.
2. Feelings during the interaction.
3. Attention to one's own body, emotions, movement, space, the installation system during the interaction.
4. Ability to influence or "shape" the environment.
5. Presence capability.
6. There is a before and after using the installation.
7. Interest in returning to interact with the piece again.
8. There is also a common question to both facilities: We offer a basic statement to understand the work and seek agreement with it.

All these objectives were translated into 22 questions (for both installations). Many were reiterations of others, but with minor differences to insist that the participant should express more broadly about his experience.

6.1 Assessment of results in POETic-cubes

The installation was developed to acquire a range of possible sensations. However, it is very rewarding to observe the experience of others and how in some cases these goals are extremely extended. Though in other cases the experience that one seeks to obtain not always happen.

In both cases, the main objective to achieve was to realize that the focus on our body sensation, in our deployment of movements when interacting with all the robots, can lead to more comprehensive, more nuanced feelings. For POETic-cubes, this fact should be given by the physical sensation in an area in constant change and movement favoured by an emerging and evolving structure, which could lead to an extension of the bodily sensation. As mentioned above, the main objective of this study was:

"To explore how increasing attention can improve the apperception of the body and the environment and therefore glimpse or feel phenomena that would normally remain hidden from the common perception."

Thus, we find that the premise is fulfilled.

Some of the answers given by participants are summarized in:

"easier to be present", "awareness of movement different than usual", "more subtle movement", "lighter".

In many cases there has been an emphasis on to note that there is a change of spatial sense, which is summarized in words as:

"the space has been transformed, has been filled with energy, illusion, joy", "space was more hypnotic and emotions were rising, as well as space awareness".

Another interesting aspect that has been observed in the responses refers to a relationship of one with another, most often the user with the robot, almost humanizing it, and in other cases the user with the rest of the set:

“I visualize the relationship between two and among all, as a network”.

Fig. 4 shows the results provided by the participants regarding the questions about the feelings raised during the interaction. The vertical axis indicates the category used to group the answers, while the horizontal axis represents the number of answers per category.

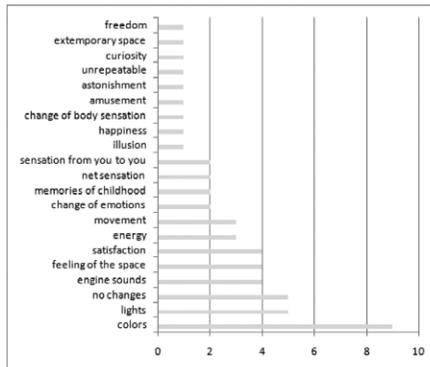


Fig. 4. Summary of results indicating the feelings arising when interacting with the POEtic-cubes installation.

We could say that, including body language when interacting with the machine will give the project qualities as “expressing emotion, and attention”, in reference to what some authors mention:

“The natural interaction between man and machine is becoming critical and need to communicate with speech or body language (gesture, posture, gaze and movement), to express emotion, mood, attitude and attention” [20].

Similarly, the concept of interface as a mirror, defined by Diana Gromala and David Bolter [21], can also be found mainly in the installation POEtic-cubes, where the user finds an answer to his movements in space, as if he had a mirror that is showing his movements, following them. Though when we look at the conventional mirror, we can observe specific characteristics of ourselves and our bodies, when our actions are reflected in relation to movement behaviour, we also acquire different perceptions of us, our movements. Autonomous objects are mirrors of our movement, mirrors of our body temperature.

Finally, the theories of Sparacino are also reflected in the installation, when he explains that a system of interaction must have “the depth of content of a script system, the flexibility of a response system and the decentralized autonomous architecture of a behaviour system” [22].

6.2 Assessment of results in Weightless spine

General guidelines for the questions about the installation Weightless spine, divided into different questions, refer to:

1. First impressions.
2. Interaction and perception of back.
3. There is a before and after using the installation.
4. Interest in returning to interact with the piece again.

The intended target on the sensations you get with the Weightless spine installation is:

"To allow the user to obtain a greater perception of the phenomenon that the force of gravity exerts on our bodies and get it through feeling or perceiving the back. Focusing attention on that body part".

When testing with participants, even before they completed the questionnaire, we could observe the expressions of surprise and excitement that greeted the piece. Although this can only predispose the receptor in a positive way, since the purpose of the piece was again the same as in the previous case: focusing attention on bodily sensation rather than an appreciation of visible aesthetics. The phenomenon is well understood. It is a time when the eyes light up, the jaws are relaxed by the fascination, and that could be observed. There was a practical goal to achieve: the formation of a tail that was going to follow the back and outside of there was anything else to do, just walk, look and feel. This facilitates the understanding of action and does not need to unfold the user's body in the interaction. Therefore it is received with greater acceptance by the user (except for expert users in body movement).

At first the participant fails to walk with the tail behind his back, generally prefers to watch the whole phenomenon of formation of the tail, even if he has to walk backwards, responding as follows:

"I preferred to look the piece in the interaction, to see the whole movement".

When the participant stands in front of the room and only interacts, he is actually the protagonist, as he is the driver, everyone else is looking, so it could be sensed that this was part of the fear of walking without looking at the work, because then you're no more observant, you become observed. But after looking at it and see how the robots perform the monitoring, sometimes decides to turn to drag behind, but of course, the importance of vision is there, hard to avoid and just imagine the interaction. The answers are:

"at first it causes discomfort, you want to look but then awakens your awareness".

The feeling a piece of art in the back is surprising and novel. But when the participant decides to use it so as it was designed, the objectives of possible receptions are completed and responds as follows:

*"I felt very relaxing, volatile, like a comet traveling through space",
"a pleasant sensation, indeed weightless. It's like being the director of an ephemeral thing",*

*"I feel relaxation and weightlessness",
"I feel lightness, brightness".*

"Weightlessness", "lightness", "volatile" are key words that in the mouths of users respond to the goal we wanted to convey.

The sense of presence is also true, what would be the phenomenon of attention to this, responding:

"my body has increased a little its sensory perceptions, its proprioception and its presence".

Beyond these perceptions, we find the sensation of the extended body; the body that aided by an artificial prosthesis has been able to see other possibilities.

The use of the piece has generated the need to re-remember it and is reflected in responses such as:

"after interacting, I feel the lack of that column of light behind me. I'm fascinated!!!!!!".

That is, the art project fulfils its function. Outside the installation itself, the record is in the memory of the feeling, so that just evoking it, it could re-record the phenomenon. The participant answers:

"I feel a wave behind me. Be like a queen. A very nice feeling".

Fig. 5 shows the results provided by the participants regarding the questions about the feelings raised during the interaction. The vertical axis indicates the category used to group the answers, while the horizontal axis represents the number of answers per category.

In this case, the piece has attracted less interest in technology, technology arguably been overshadowed by the effect of the sensation. Only in some cases there was some interest in these aspects.

One might conclude by saying that both the visual aspect, as the drag behaviour are reminiscent of the feeling of weightlessness, of lightness. The first by its volatile, fragile, light appearance and the second by the mental image it evokes, through which the body is expanded.

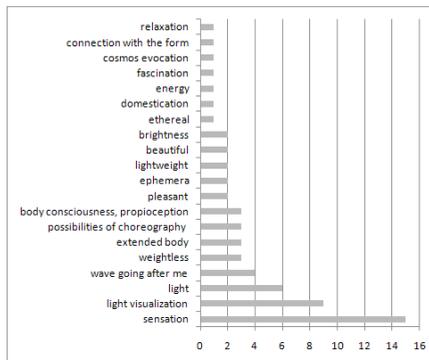


Fig. 5. Summary of results indicating the feelings arising when interacting with the Weightless spine installation.

7. Conclusions and future work

Following the final results of the implementation of the two practices or installations and their use by users, it can be said that both projects have met the requirements originally proposed and have also attracted interest beyond the initial expectations.

If the initial objective was summed up in using technology as a means to help “expand” our mind and body, and take the bio-inspiration to evolve the technology, we can conclude that the results of the exercises have yielded an “observer” more attentive.

Attending to the initial objectives of the project, the following conclusions could be reached:

1. The concept of “attention” is fulfilled in the use of both installations. Attention on POEtic cubes is acquired in various ways, from attending the subtle movement while experimenting with the installation, to see how the whole set takes shape and how the whole structure can be maintained “alive”.
2. On Weightless spine attention is achieved by focusing our attention especially on the back, because this is what acts as an interface to move the whole installation.
3. Moreover, this concept of attention helps us to realize the crucial role it has to activate mechanisms of “sensory experience”. That is, we are put in front of experimenter attitude; in front of an attitude of intention, rather than wait for a random stimulus.
4. The “bio-inspiration” principles, with behaviours applied at both installations, is the only possible way to solve technically the proposals. Without overall coordination of autonomous entities that operate as an organism with its own evolutionary criteria, we could not get the desired experience, not at least working with hardware, which is very different to work with software.
5. Of all the above we can conclude that a “more attentive” observer produces no collective or evolutive change. A crowd of observers “more vigilant” all over the world can change the perception of our bodies and expand the possibilities of our minds: “when space flights become universal they will generate some mutations that suppress the expectations we have of bodies” [23].

To evolve the concepts considered in this work, we propose future research lines in the following directions:

1. The emergence and self-organization may be richer, more complex as more individuals take part of the system.
2. To move from individual consciousness provided by adaptive technology to the collective consciousness they need to form part of the daily life of all people in all corners of the planet. This implies that new proposals can focus not only on the closed and almost individual space that offers a museum, where these technologies could now only be exhibited, they have to become part of our daily environment.

The technological solution used in the work presented in the paper still has its doors open to develop other behaviours, as would be the epigenetic aspects or learning principles. Given the nature of the installations, learning is acquired over time and therefore rarely could contribute something to a visitor who is interacting during minutes. Therefore, thinking about

everyday technology, this principle could be applied and extend further the cognitive, sensory and perception capabilities.

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McLuhan and Continental Philosophy: how Merleau-Ponty's Phenomenology of Perception helps support and continue McLuhan's directions

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1. Introduction

Marshall McLuhan's impact on the world of thought in the incredible decade of 1960 is well known. One can imagine the shock experienced by the European intellectual milieu, which was just coming from a brilliant generation of structuralists, with the impact of the works from Levi-Strauss, Lacan, Foucault, Barthes (all of them still alive and producing at the time), to get into an also brilliant generation of post-structuralists, in which one can count names like Jacques Derrida or Gilles Deleuze, when McLuhan emerged on the scene with his very unusual style and a whole package of quite new concepts about books, television and technologies of mediation. Today, with the advent of Digital Culture, the main McLuhan's ideas seem so clear that one hardly understands why he may have been so controversial at first. Nonetheless, in the sixties, McLuhan's seemingly lack of respect for Continental philosophical tradition – although he had a PhD in English Literature, and an amazing knowledge of English poetry – was very unexpected. It struck Jean Baudrillard (Kellner 1990, p. 5), for example, that McLuhan did not show much respect for a giant like Karl Marx, who was, for the Canadian, just a by-product of the book and the mechanicist environment of the XIX century.

Although certainly a brilliant and inspiring media theorist, McLuhan was not a philosopher in European terms – he didn't have exhaustive domain over French and German Philosophy, although his *Galaxy of Gutenberg* thesis did put all those authors under a new, unexpected light. In the following paragraphs, I expect to suggest some relations among Continental Philosophy and McLuhan's ideas, in order to open directions which deserve further exploration and seem to offer tools for new McLuhan styled probes into contemporary technological culture.

2. Opening Remarks: European Philosophers and McLuhan's Work

There are many ways by which one can establish relations and bridges among McLuhan's theoretical propositions and European Philosophy. Micheal Heim (1993:54-71), for example, has suggested that McLuhan's legacy should be compared to Martin Heidegger's philosophy

of technology, and that such comparison would bring more similarities than one would expect – those two thinkers agree not only that technology cannot and should not be regarded as “neutral”, but also locate the origins of Western technology in the changes in thinking which took place in Classical Greek Antiquity. Among French philosophers, one quite often reads about the connections between Jean Baudrillard’s thinking and McLuhan’s media theory (for example, Howes, 2003:237n4; Kellner, 1990), and also Paul Virilio’s ideas on the power of technology and dromocracy – the idea that the domain over velocity and time through communication means implies most of all in political power – bring a strong kinship with the Canadian media theorist’s ideas (Virilio, 1999). Interestingly, while Virilio’s readers consider his work to be in the opposite site as to McLuhan’s media-theory, it should be noted that not only both share a technocentric view of Modernity, but also both were committed to Christianity (see, for example, Armitage 2000). One can even find authors who point to McLuhanic aspects in Gilles Deleuze’s work, and the passages in *A thousand Plateaus* addressing cultural, body and behavioural changes which take place as result of new technologies and technological devices are, for sure, not anti-McLuhan. In an amazing article about the “new artificial sensibility”, written in 2000, the Portuguese author Maria Thereza Cruz (2000: 8) states that “as Deleuze suggests, it is our body, first of all, which loses the certainty and the need of its functions. And in this point, at least, Deleuze is a McLuhanian”. Of course, with some intellectual effort any relation is possible, especially when we’re definitely living in a time when it became almost impossible to over-estimate the role of technology in our lives. Thus, the way by which connections and modes of dialogue are proposed is probably more productive than straight connections.

From his side, Marshall McLuhan himself has made some effort to place his own work in relation to both European thinking and positive Science, especially in his last work, *Laws of Media*, in which he intended to give scientific status to his theory. In a letter to Marshall Fischwick, in 1974 (McLuhan 1987, p. 506), he writes that “*The reason that I’m admired in Paris and in some Latin Countries is that my approach is rightly regarded as ‘structuralist’*”. One can notice his interest and respect for the reception of his writings in Europe, and his amusement for this comparison, even much after the peak of Structuralism. Of course, the comparison it is not senseless: the privilege McLuhan’s work has given to support over content, to looking at *ground* as what gives meaning to and allows the bringing forth of *figures*, is certainly something which is in line, or can be understood as an emphasis in structure, thus placing his ideas – although in a very unexpected way – in line with the developments in French Philosophy through the 1950s and early 1960s, when McLuhan’s thinking matured. Certainly, the fact that *Gutenberg Galaxy*, it can be said, told European intellectuals that *it was not that them had written all those fantastic books, but rather it was the books that had written them*, was not an easy idea to digest. Still today one can notice that intellectuals whose thinking is still deeply rooted in the mind structure of the book, such as Umberto Eco, hesitate (to say the least) in recognizing the meaning of “the medium is the message”.

While trying to provide an original understanding of Modern European thinking through the lens of his own *Gutenberg Galaxy*, *Understanding Media* and *Laws of Media* approach – to quote some of his most important works – McLuhan also felt pressed to come to terms with Continental heritage, as if he was concerned that his work could stand on its own feet before the tradition. In spite of feeling himself closer to Vico and pre-scientific thinking, in *Laws of Media* he explicitly addresses Kant, Heidegger and the most influential modern authors in Continental Tradition. One notices that, as frequently suggested by his critics, McLuhan’s

understanding of European philosophers is a bit confuse: in the same letter quoted above, he says that “*Nobody except myself in the media field has ventured to use the structuralist or ‘existential’ approach*”, betraying a misunderstanding of the precise meaning of both definitions – which he seemed to think of as one and the same. As Jack Lemmon once said, “nobody’s perfect”.

However, we’d like to call attention to the connections between McLuhan’s work and ideas presented by three authors he doesn’t seem to have been interested in – or even aware of. The first is the German essayist Walter Benjamin, with his writings on photography and cinema; the second is the Czech-Brazilian philosopher Vilém Flusser, with his ideas about technology and the metaphor of the *black-box*; and the third one, maybe the least expected, the French Phenomenologist Maurice Merleau-Ponty.

3. Walter Benjamin: Visionary Pioneer

Starting with Benjamin, one notices striking similarities between insights offered in his much quoted essay *The work of art in the age of mechanical reproduction* – written in the midst of the Nazi catastrophe in the 1930s – and McLuhan’s ideas. If Benjamin certainly was not the only one intrigued with photographic and cinematic pictures in the first half of XX century, he was first to call attention to the effects of such technological novelties in European culture as related to the kind of experience such apparatuses impose. According to Benjamin’s account, understanding the impact of photography and film on cultural experience demands recognizing the “destruction” of previous modes of urban experience:

[B]y making many reproductions it substitutes a plurality of copies for a unique existence. And in permitting the reproduction to meet the beholder or listener in his own particular situation, it reactivates the object reproduced. These two processes lead to a tremendous shattering of tradition which is the obverse of the contemporary crisis and renewal of mankind. Both processes are intimately connected with the contemporary mass movements. Their most powerful agent is the film. Its social significance, particularly in its most positive form, is inconceivable without its destructive, cathartic aspect, that is, the liquidation of the traditional value of the cultural heritage. (Benjamin 2010, p. 14)

By noticing, in the lines that follow the quote above, that a Shakespeare play, when seen in a movie theatre is an entirely new kind of *experience*, which cannot be understood as a mere translation of the original play to the new medium of cinema, Benjamin is, in other words, stating that *the medium is the message*, that is, it produces a kind of experience of its own.

Benjamin goes on, to notice that such a destruction of “traditional value” implies the off-spring of a new social order in which values that were supportive of previous power relations in European society tend to be superseded, while nobody notices:

[E]arlier much futile thought had been devoted to the question of whether photography is an art. The primary question — whether the very invention of photography had not transformed the entire nature of art — was not raised (Benjamin 2010, p. 25)

So, according to Benjamin, the “primary question” to be asked was not related to *content*, but to the changes *new media* introduces in society, capable of engendering an entire new aesthetic understanding – thus impacting, essentially, in perception. This is far ahead from what other theorists from the Frankfurt School, such as Adorno and Horkheimer, were able to envision at the time. These two, typically, were worried about the destruction of traditional art values they ascribed to “high-culture”, as opposed to mass “low-culture” they highly criticized.

While trying to unveil the elements which allowed the camera to provoke such cultural tornado, Benjamin also talks explicitly about what will later emerge as a key McLuhan’s topic, the changes in perception itself. He notices that, by transforming the possibilities of the eye, with close-ups, enormous screens and changes of film speed (by fast-motion or slow-motion), images that have always remained unconscious suddenly surface to conscious. Also, as a result of the intense presence of photography in press, the uniqueness of an instant which just happens once is turned into a mass reproduced phenomena, which is

(...) [i]s the mark of a perception whose “sense of the universal equality of things” has increased to such a degree that it extracts it even from a unique object by means of reproduction. Thus it is manifested in the field of perception what in the theoretical sphere is noticeable in the increasing importance of statistics. The adjustment of reality to the masses and of the masses to reality is a process of unlimited scope, as much for thinking as for perception. (Benjamin 2010, p. 18)

One must agree that such unusual relations, which link cultural facts, urban experience, technology and perception in a single unexpected articulation could be written by a certain Canadian author, decades later. This is typical McLuhan style of starting from the simplest facts to find meaningful correspondences able to unveil the logic of a whole age.

4. Vilem Flusser: *Bodenloss* Thinker

Another passage in Benjamin’s article allows a triptych connection between himself, McLuhan’s work and another Philosophy outsider, the born-Czech thinker Vilém Flusser, who lived in Brazil for 30 years and has written several of his works in Portuguese, before returning to Europe in the 1970s. While discussing the experience of the photographer, Benjamin writes (idem 35-6) that a cameraman is to a painter what a surgeon is to a magician: that is, the camera incorporates and imposes to its users the relation of a subject to his object. By underlying the fact that the camera has embedded in its mode of operation the epistemology of classical science, Benjamin also anticipates Flusser’s concept of black-box (when one knows what a machine gets as inputs and what it throws as outputs, but nothing about what goes inside), as a materialization of a conceptual framework – classical science –, as presented in his book about photography and technical images (Flusser 1998).

More interesting, for the purposes of this article than to offer a detailed reading of Flusser’s growing influential work, is to illuminate the way by which he can be read as one of the Continental versions of McLuhan. Well versed in classical Philosophy, and a very deep reader of Nietzsche and Heidegger, Flusser was certainly touched by McLuhan insights in the 60s. One

can easily notice the resemblances among the way Flusser describes the impact of writing and printing in European thinking (the notion of a world which lives “historically” – because of reading – as opposed to those who live “magically” – because of orality and the magic power of images) and McLuhan’s account of the Guttenberg Galaxy. The whole Flusserian account of Modernity as shaped by an “inflation of texts” sounds as an elegantly written and concise version of McLuhan’s work. And the power assigned to the apparatus (the camera), which dominates the photographer by imposing its “program” over him – an image Flusser uses as a metaphor to the whole technological age, in which we are not more than servants to machines – is already noticed as a radical version of McLuhan’s ideas in Brazilian author Arlindo Machado’s presentation of the Portuguese edition of Flusser’s small masterpiece (Flusser 1998, p. 9-18).

That Flusser could have possibly known McLuhan’s work should not be a surprise. Not only McLuhan was widely discussed in the 1960s, celebrated as media-guru, and prophet of communications age – whose name would hardly pass unnoticed – but also Flusser was a really heavy reader, of whom it is said that read obsessively; one can suspect, by his works in English, German, French, Portuguese, and by his Jewish Czech origin, that he had domain over around ten different languages! How could he have not at least had a look in McLuhan’s work? Also, Flusser was certainly an intellectual outsider: not being in Europe, he could not be pressed to reject McLuhan’s work; and although writing regularly in influential newspapers in Brazil, he was never entirely accepted by the Philosophy “club” in the country, thus when the military dictatorship has taken power in 1964, he was – though never a supporter of the government – always suspicious of leftist discourses, aware of the results of Communist dictatorships in Czechoslovakia and Western Europe. Thus, if for the main Brazilian intellectual milieu, most engaged in political resistance to the dictatorship, McLuhan was regarded as a *thinker of the system*, who would never address his topics through the lens of a Critical Marxist matrix, as the favoured Frankfurt School authors, Flusser was not leftist enough, and also certainly intellectually curious enough, to check by himself the surprising ideas of the Canadian media-theory pop-star, who was then stealing the intellectual stage. One should not be surprised, then, to find in *Bodenloss* [Soil Loss], Flusser’s unfinished self-biography, at least once the expression “Guttenberg Galaxy” (Flusser 2009, p. 147). Could it come from anyplace else? Thus, if Benjamin anticipated many threads McLuhan would develop later, it also can be said that Flusser offered a brilliant – and with an amazing domain of Continental Philosophic tradition – version of McLuhan’s ideas, in a concise and original style which complements the Canadian thinker’s well known mosaic-like style.

5. Merleau-Ponty: Senses and Sense

However, a question remains: if Flusser is more concerned with the history of ideas themselves and cultural changes carried by technological apparatuses, both Benjamin and McLuhan put enormous emphasis in the shifts imposed on perception by technological mediation. Changes of perceptual bias, as widely known, are at the core of McLuhan’s thinking. It turns out that, by mapping cultural effects related to perceptual and cognitive changes accredited to technological mediation, neither Benjamin nor Flusser, and McLuhan especially, have been able to offer a theoretical support for their ideas in any comprehensive theory of percep-

tion and cognition. Although raised on observation of a well recognized inventory of effects of technological mediation, it can be argued that McLuhan's theory, and the discussion on sensory biases – for example, the famous “an eye for an ear” aphorism, the synesthetic bias of oral cultures, and the hypertrophy of vision in Western culture – reclaim the support of a perceptual theory able to adequately bond perception, sense and knowledge. I suggest that the answer for such gap, interestingly, can be found in one of the authors about whom McLuhan seems to have never written a single line about, and who has written the most important philosophical work on the topic of perception in the XX century, the French phenomenologist Maurice Merleau-Ponty – as I shall suggest, such a contribution opens interesting directions for McLuhan influenced studies of contemporary digital societies.

While never showing much care about technology, as if it was not a question for himself, Merleau-Ponty has written the most comprehensive, up to present day, and still highly influential work about perception, anticipating and being decisive to more recent efforts in the topic by authors such as Francisco Varela, Alva Nöe or Evan Thompson.

Merleau-Ponty's *Phenomenology of perception* (1945) continued directions opened by Husserl, concerning a critique of the “natural attitude” towards the experienced world, and, and by dipping on the findings of German *Gestalt* psychologists (from whom come the concepts of figure and ground as widely explored by McLuhan), Merleau-Ponty gives a radical emphasis to the role of perception in our living experience, disclosing the way by which we are tied to the world by perceptual bonds, and this unique familiarity between body and world on which all possible knowledge is grounded.

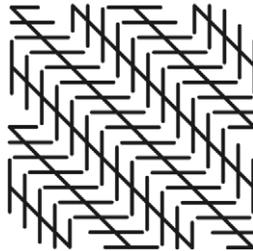


Fig. 1: Zollner's illusion, a classic Gestalt example of how perception has its own syntax, independently of what one rationally knows about the world.

Classical Gestalt examples such as the Zollner Illusion (fig. 1) serve Merleau-Ponty as points of departure to show how perception gives us a world which is previous to “right” or “wrong” and to any rational action and decision, on which any rationality and decision must rely. The key point on Merleau-Ponty's account is that perception is for the first time described as an active process of *creating a world* through the presence of a body in a circumstance – something that would appear much later in Maturana and Varela's work, in the 1970's (Maturana, Varela 1995):

[W]e grasp external space through our bodily situation. A “corporeal or postural schema” gives us at every moment a global, practical, and implicit notion of the relation between our body and things, of our hold on them. A system of possible movements, or “motor

projects", radiates from us to the environment. Our body is not in space like things; it inhabits or haunts space. (Merleau-Ponty 1964, p. 5)

Contingent to this active presence of the body, "the field of perception and action" (pg. 16), emerges the perceived world, a perspective which blossoms from the individual's meeting with a dynamic system of things in which she or he is immersed, and which is always unfinished, and perpetually being made; what we perceive is never a "sum of parts", but a whole from which parts (objects) are eventually detached, but are defined according to their belonging to such set. Any theory of perception which relies on the idea of perceiving an objective world as organizing sensations derived from a circumstance of defined objects misses the very operation by which perception constitutes a world in which we exist:

[W]e observe at once that it is impossible, as has often been said, to decompose a perception, to make it into a collection of sensations because in it the whole is prior to the parts – and this whole is not an ideal whole. (Merleau-Ponty 1964, p. 15)

And, following this,

(...) [W]hat prohibits me from treating my perception as an intellectual act is that an intellectual act would grasp the object either as possible or as necessary. But in perception it is "real"; it is given as the infinite sum of an indefinite series of perspectival views in each of which the object is given but in none is it given exhaustively. It is not accidental for the object to be given to me in a "deformed" way, from the point of view [*place*] which I occupy. That is the price of its being "real". (Merleau-Ponty 1964, p. 16)

Thus, Merleau-Ponty gives us a rigorous account in which perception can be understood as the way by which I dispose a set, a horizon in which my body, prior to the operations of reason, acts as to get the best grasp, a satisfying – and transitory – gestalt of the circumstance, enough for one to perform one's existence successfully. And since we are this situated body, "even our most secret affective movements, those most deeply tied to humoral infrastructure, help to shape our perception" (Merleau-Ponty 1964, p. 5), in a way that there's never such a thing as a neutral set: we always perceive a meaningful world, as a result of the intention with which one addresses the moment. Perception emerges as the baby-cradle of meaning, substituting, for a classical abstraction of passively perceiving a neutral world, an awareness of context which cannot in anyway be severed from sense: the senses give us a world invested with sense.

Of course, as a result of world created by each of us according to individual perspective, Merleau-Ponty's philosophy faces the challenge of the *alter*, of the other's world being divergent of mine – and reality emerges as an intersubjective agreement or distinct perspectives. Since reality, as we experience, is thus, up to a certain level, shared by a community, this raises the problem of culture. Although Merleau-Ponty has, during his short life-time casted the question of perception in culture as something which deserved further work (see, for example, Ferraz 2009), it took some decades for a group of anthropologists, most notably David Howes and Constance Classen, to unveil such culturally determined structures of perception. Since the late 1980's, Classen and Howes have written and/or edited several works, addressing different cultural perceptual models, different collective arrangements of the body *sensorium*,

as leading to distinct ways of making sense and dealing with reality. Although Howes (2003, p. 54) himself affirms that “*No Western theory of the senses (...) can substitute for or comprehend such culturally specific indigenous epistemologies*”, their work is the best demonstration of Merleau-Ponty’s thesis that the experienced world gives me not the precise objects of science, but things which are endless source of meaning (Basbaum, 2006:186) – meaning as born in the perceptual act and normalized between individuals, in collective experience.

6. Final Remarks: Bringing Theories Together

That Merleau-Ponty’s theory couldn’t fulfil every consequence of the directions opened by his pioneer placing of perception as the ground of meaning and knowledge shouldn’t surprise, not only because of his early death, but also because no thinker can give account of everything, no matter whom. More important is to notice that Classen and Howes’ works – which, as I suggested, brought enormous contribution for a broader understanding of perception, reinforcing the core of Merleau-Ponty’s work – *derive almost directly from ideas developed by Marshall McLuhan concerning the opposition of oral and literate societies*. McLuhanists are usually aware of such problems as the synesthesia of oral cultures, and the growing dominance of visuality in Western culture throughout Modernity – something that is brilliantly described by Classen (1993, p. 15-36), through observing the changes in flower contests in London, which favoured smells in the XVI century, and in the XIX century were prizing just the perfect visual form. No account could be more persuasive, given that flower contests inhabit a territory in culture quite distinct from those of books and philosophers. Classen’s example proves the triumph of visual bias during the Gutenberg Galaxy – as does Gestaltists and psychologists’ enormous emphasis in visual research, in prejudice of all the other senses. Based in Toronto, the anthropology of the sense was directly influenced by McLuhan’s and Walter Ong’s insights (Howes 2003, p. xviii-xx).

But, given that many of McLuhan’s findings and insights acquired dramatically renewed meaning with the global consummation of digital culture, there are some consequences of bringing Merleau-Ponty’s work in the menu of tools for understanding contemporary world. In terms of McLuhan’s perceptual bias theory, one of the keys to a comprehension of our times would be to be able to unveil the decisive aspects of the kind of perception determined by the omnipresence of digital apparatuses – the key for the doors of digital perception! To start with, if McLuhan has taught us as how to be aware of in interpret any cultural and behavioural changes as symptom of the impact of technological mediation, it was Merleau-Ponty who has best shown how to interpret data collected by psychologists and extract from this data radical understanding of the meaning of human experience. By bringing a repertoire of metaphors which surpassed the lack of imagination of cognitivists who compare everything to computers and informational flow, thus impoverishing the scope of meaning and human experience, in an epoch in which we need richness of both (which, are, as we’ve seen, tied one to the other) – Merleau-Ponty’s writing teach us how to bring them with us in this world to be.

But more interesting consequences can be derived. Following his typical mcluhanic-continental style, Vilem Flusser comments, in one of his last writings, on the cultural values developed under the influence of the book and the on-going cultural changes:

[T]emporal experience, which is understood along with the categories of History, that is, as irreversible, progressive and dramatic ceases to exist for the crowds, for people, to whom the codes of surfaces prevail, for whom images take the place of alphabetical texts. Such encoded world does not anymore mean “processes” (...) The very fact that it does not mean it anymore is called “crisis of values”. (Flusser 2007, p. 135)

In a way that could be McLuhan's, Flusser assigns to the book all the fundamental values and principles whose profound changes today we testify in contemporary society. One of the most basic of such values which could be assigned is *ethics*. Should we suppose that we could undergo radical ethical changes, given changes in perception determined by digital mediation? This is precisely what, according to Merleau-Ponty we should expect:

[J]ust as the perception of a thing opens me up to being, by realizing an infinity of perceptual aspects, in the same way the perception of the other founds morality by realizing the paradox of an alter ego, of a common situation, by placing my perspectives and my incommunicable solitude in the visual field of another and of all the others. (...) If we admit that sensibility is enclosed within itself, and if we do not seek communication with truth and with the others except on the level of a disembodied reason, then there's not much to hope for. (...)

If, on the contrary, as the primacy of perception requires, we call what we perceive “the world” and what we love “the person”, than there's a type of doubt concerning man, and a type of spite, which becomes impossible (Merleau-Ponty 1964, p. 26-7)

For the French Phenomenologist, it is the perceptual experience, and specially the perception of otherness, the very ground of morality, certainly casted in Flusser's package of “values”. Should we expect strong changes in such basic topics as ‘morality’ due to changes in cultural perceptual bias derived from digital mediation? In fact, in a recent lecture, I've been in a debate with an important entrepreneur in Brazil, who asked me, in a certain slushy tone as to impress an audience of young students, if the answer for all these changes was not just “love”. To this, given that my speech was about technology and cognition, I could not but paraphrase Walter Benjamin: *what matters is not if we're still going to think of love – the very question is whether the very invention of computers is not transforming the entire nature of love*. And we are all still young enough to testify the new forms of love emerging in Digital Culture, as we'll probably testify new forms of ethics – once all laws we know have not been conceived aware of networks and digital environments.

We've run full circle: we've seen how the changes brought by photography and cinema have lead to Benjamin's pioneer insights on the relations among technology, perception and culture; we've also seen how Flusser very Continental styled philosophy embraced the Gutenberg Galaxy thesis and derived radical insights. Then we've seen how Merleau-Ponty's phenomenology provides strong theoretical support to McLuhan's (and Benjamin's) assumptions about perception, culture and meaning, and also how a McLuhan inspired Anthropology of the Senses gives cultural scope to the French Phenomenologist's theory of perception. From this, McLuhan's media theory emerges as a kind of phenomenological anthropology of the technological man.

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Extended Biotechnological Bodies within a Posthumanistic Framework

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1. Introduction

This paper, which comes from a wider research, sets some conceptual positions as watch towers from where to observe the vast territory that tackles because of its immensity. That is why this territory should be managed in a complex and homeostatic way. McLuhan (1964) used the word homeostasis, coined by Cannon (1932), to explain the spontaneous increasing of every function that takes place in the city (language, crafts, exchanges...). Within the biological realm, according to the Canadian author, homeostasis tends to balance external requirements from the inside. Following that logic, man has always extended his physical body through society and the production of artificial devices to overcome his own biological constraints. Man developed this strategy to balance local imbalances between humans and other species and humans and the environment, which usually produced a terrible impact on the global notion of life on earth (Lovelock 2005). This impact has generated a series of consequences that have gone beyond the physical into virtuality and globality.

World transformation for inhabiting purposes requires a deep subjugation of the environment, which not only involves external modifications but our own bodies. Today the notion of the body goes beyond its definition, beyond life and beyond what was traditionally considered as human. McLuhan (1964), in his prophetic view, already envisioned this situation and foresaw a scenario where humans and the extensions of their bodies through media would be so drastically modified that we would have to think of a framework that transcends humans. This is a posthumanistic scenario.

Posthumanism, which frames this paper, may produce certain intellectual rejection due to the acquired meaning that transhumanistic approaches have. However once we get to the watch towers mentioned above, we gain perspective over the territory and we understand there is no need to subscribe to them. We are not setting up a fixed solid construction of our proposal around them, but they mean a useful set of landmarks in this vast and complex territory.

Sloterdijk (2000) arises as one of this watch towers for the better understanding of this panorama. He claims that Humanism is over. According to him Humanism was the era of letters, where written ideas determined the way we were humans. These texts were vehicles for the transmission of knowledge and ethical experiences to build civilizations through culture. They meant a set of rules and protocols that taught us how to behave as a human being is supposed to. They were used to domesticate the "animal" inside man. However after the Second World War, the coexistence in space between men was pushed away from written

language due to the revolution of technology and the media (McLuhan 1964). The radio, TV and many other devices set down to the bottom 2500 years of history and a language-written-based society; and therefore, according to Sloterdijk (1999), Humanism. We can say then that Sloterdijk's view in that sense is a continuation of McLuhan's one. Both agree on the fact that the media change the way we live and what we are. They state that technology arises as the most powerful tool that defines and redefines humanity. But the point being is that now the Biotechnological Revolution (overlapped with the Telecommunication and Information Revolution) is redefining humanity and the world where we live. Mainly this is the shift from McLuhan to Sloterdijk that this paper tackles.

Biopower is a term coined by Foucault (2009) to refer to the practice of modern states and the regulation of their subjects through a number of techniques and strategies to subjugate and format the bodies and control the populations. Now the domain over the genome, the development of intelligent machines, biotechnologies and the manipulation of living forces, draw a new cartography for biopower. Hence we really have to pay attention to them because they will radically modify the way we live, what we are, how do we establish relationships among us, with other species and with the environment. They challenge life forms themselves and set life and the living as the new paradigm for both politics and economics (Foucault 2009). In this scenario Sloterdijk (2001) stands that man is nothing but an a-subjective biotechnological drift in time. He bets for a genomic-technological driven society based on an atropotechnical code where man would be the only one capable of transforming himself since there is no God to do it. To set up this society there is the need to adopt an ecological thought that blurs the distinction between *the natural* and *the artificial*, which belongs to a humanistic understanding of the world (*nature vs. culture*). This new cosmology, grounded on a philosophical ecology, would then be the germ of multiple inhabitable spaces that would set new co-inhabiting politics between different entities that now are separated according to their "purity" or "impurity": plants, animals, humans, machines, environment (Serres 1991). Instead we would have to bet for hybridization and mixture strategies to conform this new cosmology (Zalamea 2004). Therefore rather than a humanistic approach, we would need a posthumanistic one to set up this new cosmology.

Heidegger (1971) claims that man hides himself from his apocalyptic everyday life under a scaffold of digital and genetic codes, which are not meant to be languages for cultural transmission. According to him, technology shifts humankind from a *pre-human* state to a *human* one, but at the same time it blurs the definition of humanity. This is to say media and technology extend human agency, as McLuhan stated (1964), but also blur the notion of humanity and a humanistic understanding of man. Sloterdijk (2001) goes beyond the definition of Heidegger's "House of Being" slightly redesigning its façade with historicist and postmodern changes, but deeply modifying its interior. Inside, genes are mixed together with words in such a way that man is becoming a "polymer rather than a mammal". Here we can find the endogenous redefinition of the body as the current way of extending it.

The topic we tackle here goes beyond Marx's understanding of science avoiding religious scatology from humanistic utopia to inorganic nature. We have recourse to Duque's posthumanistic thesis, which is a postapocalyptic one. Within this perspective of the end of humanisms, we find how Sloterdijk (1999) disarticulates Heidegger's *Letter on Humanism* stating that the "House of the Being" is not related anymore to language. That means our dwelling, our home, our life support systems are no longer based on texts, not on Humanism. That implies there are no differences between *nature* and *culture*, the *natural* and the *artificial*, *science* and

politics, the *living* and the *non-living*, *humans* and *non-humans* (Latour 2004). Instead there are spaces for *co-inhabitation* (Sloterdijk 2006) where different forms of intelligence are hybridized and live together in a symbiotic relationship (Serres 1990). That sort of space claims for a new Constitution, a new redistribution of rights and agency between *humans* and *non-humans* (Latour 2004).

McLuhan (1969) already asked himself fifty years ago about how to make the dichotomy *positivity/negativity* something not exclusive, about how to conceive a way to overcome the confrontation between *damnation* and *blessing*. Zalamea (2004) describes current world as a *complex network of mixtures* and *hybrids* and Capra (2002) defines life patterns as networks within networks: *webs of life*. Then it makes sense to think of overcoming all the dichotomies mentioned in the paragraph above, in such a way that we can generate *co-inhabiting spaces*, *ambients* and *atmospheres* where the *living* and the *non-living* coexist together in a symbiotic relationship (Sloterdijk 2006).

“To say that any technology or extension of man creates a new environment is a much better way of saying the medium is the message.” (McLuhan 1969, p.31).

In *Counterblast*, McLuhan (1969) noticed that electronic media shape not only the information they convey but also our very consciousness. Now not only electronic media but biotechnological media play that role. He also noticed that in order to actually perceive this phenomenon, a *counter environment* is needed. He uses the word *ersatz* to define this sort of environments. *Ersatz* means an invisible ambient, one that is designed but is not visible. That idea perfectly matches with Sloterdijk’s notion of acclimatizing spaces to generate suitable *atmospheres* for life to take place (Sloterdijk 2006). Lewis (1973) also speaks about *Ersatz Worlds* as a plurality of worlds, worlds inside worlds, or webs inside webs according to Capra’s definition of life patterns (Capra 2002). In these worlds we are only a few of all the inhabitants that populate them, and we have to be conscious of that. This description of the world is very similar to Sloterdijk’s Sphere theory, which he develops on his trilogy of books *Spheres*. That theory establishes a spherical model to understand life from the local to the global. In that model every sphere has its own designed atmosphere, but many of these spheres are interconnected to form a connected isolation model. Both *humans* and *non-humans* share these spheres and cohabit them so that the whole stands as a complex foam-like framework. This is current life scenario, a xenolatric space where humans see themselves from the outside, where they are not the center of the world anymore, where they are neighbors of other *living* and *non-living* species and where new biotechnologies, which are not yet developed and activated, are perceived in all their amplitude generating existential debates as the one we set for this forum.

2. State of the Art

Technology restores and enhances our biological constraints to amplify and extend our possibilities for living. Therefore it can be understood as an artificial extension of man, as the media that powers our life and living conditions. McLuhan (1965) stated that technology is the main cause of social changes in society. He adopted this point of view from Harold A. Innis

in 1950-51 and developed it further. According to this statement we design and produce tools through technology to modify our environment and the way we live. We shape these tools to produce different outcomes, but at the same time, these tools also shape ourselves and determine the way our society evolves. This technological determinism declares that technology leads social development and generates patterns of human social behavior through culture. Within that logic, culture is then understood as an apparatus of knowledge and techniques that humans develop to gain independence from the environment (Wagensberg 1994), transform it for inhabiting purposes into an anthropized territory (Raffestin 1980) and extend, if not literally their bodies, their capability for acting in the world. That is to say we build planes to get faster to distant places because we cannot fly, we build houses for sheltering, we construct networks like the internet to upload and download information and to stay tuned and connected, etc. In that scenario *culture* is different from *nature*, and it is developed to protect humans against the environment and help them to overcome their limits.

Lotka (1925, p.356) clearly identified how humans evolve developing technology through culture and the production of artificial devices. He established a difference between what he called *endosomatic organs*, which are biological ones that humans develop naturally: legs, arms, brain, etc. and the *exosomatic ones*, which are the ones that man artificially produces to overcome his own biological constraints: cars, television, computers, etc. According to Lotka the development of *exosomatic organs* happens since the first Proconsul used a stick as an extension of his arm to reach distant fruits, beat his opponents, hunt, etc. That was a crucial shift that turned biological evolution into a more complex phenomenon that, besides biology, involves the production of artificial devices that extend our bodies and agency (meaning capability to act), accelerating the process of evolution.

Exosomatic organs do not only work as extensions of our bodies. They are also crucial to configure the economic system that vertebrates our society. Georgescu-Roegen (1971) already understood economy as an extension of a biological evolutionary process, where labor, capital, resources, social agents, production, exchange, distribution and consumption of goods, depended on the evolution of technology, social organization and ecology. Without a doubt *exosomatic organs* have a crucial impact on the evolution of the human body. However when cyborgization came into play thanks to biotechnologies around the '50s, the fact that artificial machines were hybridized with humans for restorative and/or enhancing purposes (Haraway 1989), really exploited the concept of the body. Furthermore it brought to the table several issues such as what does it mean to be human, where are the boundaries between *living* and *non-living systems*, or in which way life could be amplified or augmented through the implementation of artificial devices in the flesh. As an example, Mathew Nagle, a handicapped ex-football player with an artificial device connected to his brain, is now able to drive a mouse pointer along a computer screen just thinking about it. He is a real cyborg, but also someone that just wears a peacemaker.

The amplification and extension of both human body and human agency, that we have seen so far, happen through the production of artificial technological devices (*exosomatic organs*) or the hybridization between them and biological human bodies (*cyborgization*). In both cases, mostly in the first one, the production of artificial devices damages the environment since they eventually become a sort of waste that cannot be reinserted in any *biological* or *mechanical life cycle* (McDonough & Braungart 2002). However, artificiality is needed to acclimatize inhabitable spaces, set the suitable conditions for human life to take place (Sloterdijk 2006) and enhance it to better fit current living style needs. But is there any other form

of augmenting life and extend human agency that does not produce artificial waste? Is there another way of addressing technological media different from current design and production means based on the consumption of natural capital and the production of artificial one?

There is an alternative model to understand the relationship between technology, society and nature. Sloterdijk (2004) argues that a *co-intelligent* system now encompasses *subject* and *object*, *culture* and *nature*. This *information ecology* (viewing the informational space as an ecosystem) gives man a new fused identity with others, with his world and his tools, so that he is no longer an identity apart. In this scenario, old dichotomies like *subject/object*, *living/non-living*, *nature/culture* or *nature/science* do not make sense anymore. Instead, they are replaced by the constitution of what Latour (2004) calls the *collective*. The *collective* is a community incorporating *humans* and *non-humans*, built on experiences of the sciences as they are actually practiced (Latour 2004). It occurs in an extended operational framework that Serres (1991) defined before as the one where plants, animals, machines, humans and the environment are considered as agents in a truly ecological relationship in/with the world. That is *cohabitation* as Sloterdijk (2006) puts it. Both Serres and Latour even claim for a new Constitution that recognizes the rights of all of these agents and their relationships with each other.

This novel scenario claims for a new technological approach that Sloterdijk (2000) defines as *homeotechnology*. This is a kind of technology that does not consider the supremacy of man over the rest of beings a priori, and does not use them as mere tools for human needs (Descola 2001). It bets for a non-dominant operability where ecology is understood as a global compendium of interactions and relationships between *living* and *non-living* systems as Lovelock (2005) suggests with *Gaia* theory. *Homeotechnology* recognizes the qualities of these beings and their forms of intelligence as if they were written embodied scores to be reinterpreted and manipulated to get more intelligent outcomes through technology. This way of operating constructs what is called the *ecology of the intelligence* (Sloterdijk 2004), which is grounded on information. This is not a new trend. Actually from the '60s on cybernetics (Wiener 1948), molecular biology (Smith 2004), synthetic biology and genetics (Rifkin 2009) reveal that *subjects* and *objects*, *living* and *non-living* entities have something in common and that is information. All of them are susceptible to be manipulated, hybridized and transformed. So what if there is a kind of media dealing with *organic* and *non-organic* information to amplify *human* and *non-human* agency? What if technology is able to reproduce, hybridize and enhance biological matter to extend *human* and *non-human* bodies?

Today it is possible thanks to genetic engineering and synthetic biology. Now the Biotechnological Revolution is the most important event that is radically redefining current forms of life, understood as living forms (morphologies) and forms (ways) of living (Rifkin 2009). Biotechnology breaks traditional reproduction boundaries between different species (Kac 2005), genes are transferred from one species to another to reconfigure living bodies, their features and behavior. Novel species are created every day, even a living synthetic cell from inorganic matter. As a matter of fact Venter recently claimed his team has created a living cell from inorganic chemical components.

Alba, a transgenic rabbit genetically engineered by Eduardo Kac in 2000 is one example of a novel hybrid creature. Its DNA was hybridized with GFP (Green Fluorescent Protein) extracted from a bioluminescent jellyfish, and now, the resulting bunny-jellyfish hybrid glows in the dark. But there are other ways of exploding the notion of the body through biotechnology that have to do with disembodied *semi-living* (Catts & Zurr 2008) entities able to perform certain functions outside the body that once hosted them. That is the case of the *Victim-*

less *Leather Jacket*, a scaled jacket that T&CA printed using mammal cells for that purpose in 2004.

The Biotechnological Revolution is so relevant that even politics reorient its apparatus to catch up with it. *Biopolitics* addresses life and living matters as the main issues to tackle in nowadays society through *biopower*. As Foucault (2009) defines it, *biopower* consists of a set of techniques and regulations that modern states have to achieve the subjugation of bodies and the control of populations. Formatting the bodies to control them has been always done in different ways but it is obvious that genetic modification, drugs, or releasing manufactured living species in the environment would drastically affect the way bodies and society are shaped and the way they evolve; and that is interesting for politicians. Industrial capitalism already developed techniques to model efficiently useful bodies and docile subjectivities (Sibilia 2005). Today, in our current informational and biotechnological digital society, they pretend to achieve many more radical mutations: suppressing distances, illnesses, aging and even death. In this scenario the human body is reduced to a processing data system and to a genetic informational bank. It is getting obsolete and it has to be reformatted again through these new media.

This manipulation of the human body requires a *transhumanistic* approach. Huxley (1957) coined the term *transhumanism* to define human species not as the end of an evolutionary process but as the beginning of it. According to this idea, humankind may be modified by man to be a more pacific, intelligent, powerful and long-lived species. Huxley stated we should control our evolutionary path and drive it in favor of individuals, society and the species. These arguments are very controversial. Garreau (2005) shows us how engineering the next stage of human evolution through genetics, robotics, information, nanotechnologies, etc. could lead us to *heaven* or to *hell*, most likely to both of them.

On the one hand we can find many authors that are techno-optimistic ones like the computer scientist Minsky, who wrote on symbiotic relationships between humans and machines through artificial intelligence and biological manipulations during the '60s. Minsky influenced other authors like Kurzweil (1990), who states that human brains could be connected to a computer to upload and download information, or Moravec, who thinks that the human body is an anachronism that must be enhanced with technology to accelerate its evolutionary process. Moreover Haraway (1989) in her *Cyborg Manifesto* explains how the idea of the *cyborg* (human body restored or enhanced with artificial devices) deconstructs binaries of control and lack of control over the body, *object* and *subject*, *nature* and *culture*; but also, exposes how things consider natural (like human bodies) are not. Instead they are constructed by our ideas about them (sexism, feminism, chauvinism, nationalism, religions...).

On the other hand, there are other authors that are pessimistic about transhumanism and disapprove the manipulation of human species. Among them we can find Ballesteros (2007) who claims for human dignity against an instrumentalized vision of humanity. He even fears human corporality could completely disappear to become pure information. He associates transhumanism to torture and purification, and eugenics to the search of purity and the selection and discrimination of a number of individuals among their species. Sloterdijk (2000) would say though that eugenics has nothing to do with racism or a nazi approach. According to him, eugenics expresses the willing to improve our species, and nazism the willing to erase racial differences. Among the detractors of transhumanism we can also find Fukuyama (2000), who claims in *Our Posthuman Future* that biotechnologies are a threat to liberal democracy and capitalism, and that manipulating DNA will have terrible consequences for our political order, even if undertaken with the best intentions. Instead of finding the answer in

the *res publica* man living together with the things (either living or non-living) like Sloterdijk, Latour or Serres, Fukuyama tries to make clear that this transhumanistic scenario is just a dystopic-utopic one powered by individual interests.

These are the heaven and the hell scenarios that biotechnology as a novel media able to transform the notion of the body unfolds in present times. It could be said it is up to us transform earth into heaven or hell now, but that would imply following a logic based on dichotomies, and the reality is not so simple to face it like that.

3. Contribution

Our contribution to McLuhan's thoughts on the role of the media to extend both human agency and human body in current posthumanistic-ecological scenario is that rather than electronic, today these media are biotechnological. Instead of manufactured artificial *exogenous* devices, the transformation of the body and the amplification of human agency occur now through *endogenous* processes where life is treated as raw matter and the body is the life support system that hosts both organic and inorganic modifications (Fig.1-2). Hence our thesis is that the extended biotechnological body is the media.

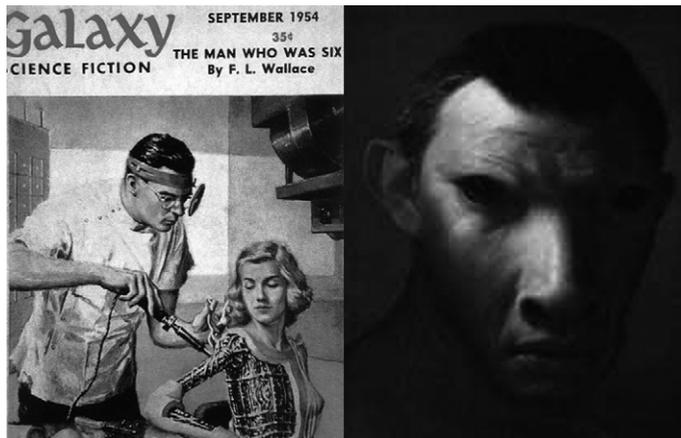


Fig.1. *Galaxy Magazine* n° 354 (1954) Fig.2. *Year Ox* (Daniel Lee 1993)

That does not mean that the Telecommunication Revolution does not affect our life. Indeed it is overlapped with the Biotechnological Revolution, and both are part of the Informational Revolution if we understand bits and genes as pieces of information susceptible to be re-organized in a cybernetic framework (Wiener 1948). What we state, if you will in a prophetic McLuhan's fashion, is that the manipulation of the *living* and *non-living* through biotechnology will radically modify our bodies, our society and the way we inhabit earth. This is not something new per se to be considered as a contribution, but what it is new is the reconceptualization of this condition in the architectural realm. That is to say a novel way of understanding *architecture* and *architectural action* through the redefinition of the *living*,

the *non-living* and *human* and *non-human* agency, to ultimately change the way we design and produce our world for inhabiting purposes. In that sense we must say there are two ways of “attacking” this issue. The first one is the way form is generated through biotechnology applied to architecture, and the second one is the way in which inhabitable spaces should be thought taking into account the modification that human bodies will “suffer” due to biotechnologies. There might even be a third one, which considers not only the modification of the human body through biotechnology, but the possible modification of every other *organic* species and *non-organic* matter through biotechnologies to conform architectural scenarios.

In order to explore these possibilities we now tackle several references brought from synthetic biology, regenerative medicine and bioart to the architectural field. Then we establish a set of relationships between them and a common ground for them, which is also a contribution to the almost non existing field of *biosynthetic architecture*.

Growing architectural shelters by manipulating plant growth is not a new design strategy. It is easy to find many examples in traditional architecture and *tree shaping* or *arborsculpture* (Fig.3-4). However there are more sophisticated ways of programming vegetal matter and control its growth. One alternative is the use of CNC machines and robotic technology to determine the way plants grow and to build architectural shelters. As an example we find the work of both Sherburn (Fig.5) and Joachim (Fig.6). Also Roche speculates with the possibility of programming a swarm of robots to collect vegetal structures and shape inhabitable structures in a close collaboration between machines and plants (Fig.7). Other approaches have to do with taking advantage of living intelligence to grow building materials. This is what Bayer and McIntyre did when they developed a thermal insulating material out of agricultural waste and mushroom roots (Fig.8). Mayoral used this material to design modular structures for public use (Fig. 9) and prototypes of structural organic insulating walls to come out with an organic disposable system of inhabiting to colonize abandoned sites in the city (Fig.10).



Fig.3. *Living-root Bridge* in Sohra (India) Fig.4. *Basket Tree* (Axel Eraldson)



Fig.5. *Habitary Tpoiary* (Noah Sherburn 2006) Fig.6. *Fab-Tree House* (Mitchell Joachim 2006)

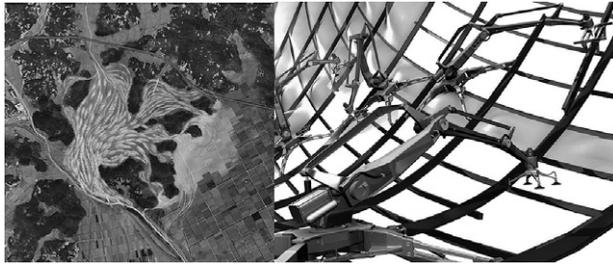


Fig.7. *Swarm Town* (R&Sie 2006)

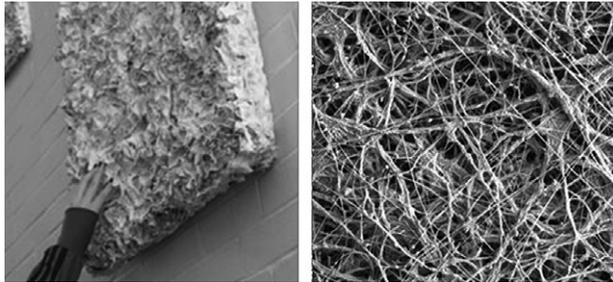


Fig.8. *Greensulate* (Ecovative Design)

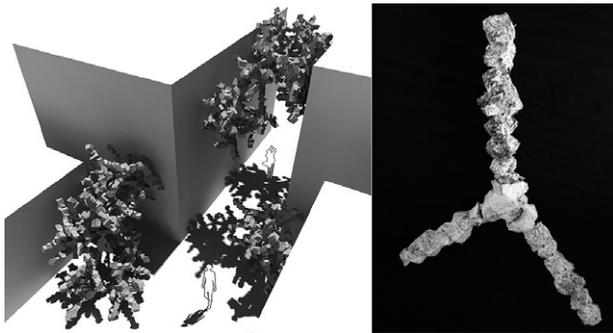


Fig.9. *3D Greensulate usable structure* (Eduardo Mayoral 2010)

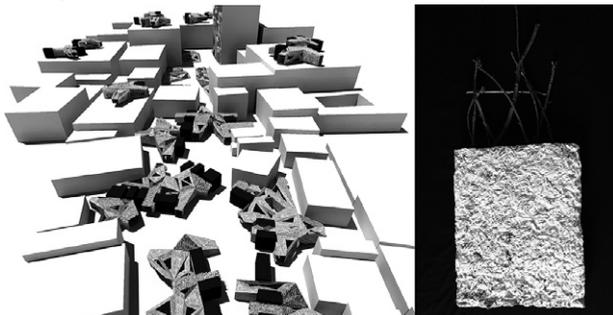


Fig.10. *Grown Cultivated Habitat* (Eduardo Mayoral 2010)

Another way of taking advantage of living intelligence for architectural purposes through biotechnology is the manipulation of micro-organisms. Populations of bioluminescent bacteria can be grown to design lighting devices that do not consume electricity. Takayama and Nicholson explore this possibility (Fig.11) in pieces of furniture that glow in the dark. Mayoral also deals with this kind of experiments to design public glowing pieces of furniture (Fig.12), billboards that display information and lighting systems for natural parks (Fig.13). Bioluminescence is also explored in transgenic processes hybridizing genes from different species to get novel species that glow in the dark. That is the case of the tobacco plant genetically modified with firefly genes by the UCSD team in California (Fig.14). That was the germ of Estévez's idea for the *Barcelona Genetic Project* where genetically modified plants would replace public artificial lighting (Fig.15).

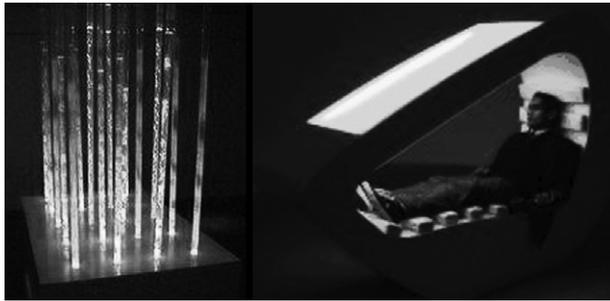


Fig.11. *Deep Green 1* and *Jellyfish Lounge* (Takayama and Nicholson 2004)

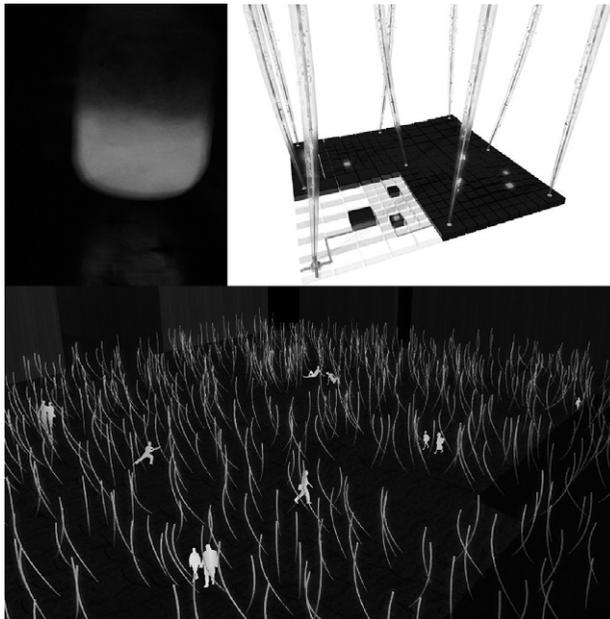


Fig.12. *Bioluminescent Bar-Field Plaza* (Eduardo Mayoral 2010)



Fig.13. *Bioluminescent Natural Park Lighting and Commercial Billboards* (Eduardo Mayoral 2010)



Fig.14. *Glowing tobacco plant* (USCD team 1986) Fig.15. *Barcelona Genetic Project* (Estévez 2005)

Populations of micro-organisms can be also mixed together with mineral substances to achieve architectural outcomes. Dosier recently won the *2010 Metropolis Next Generation Design* award for a project in which she manipulated populations of *Bacillus Pasteurii* combined with urea, water and calcium chloride to transform sand into sandstone and create a sand-brick (Fig.15). Larsson won the *Holcim Awards in Sustainable Construction* in 2008/2009 with his proposal *Arenaceous Anti-Desertification Architecture*, which seeks to create a 6km wall in the middle of the desert to avoid desertification and provide people with inhabitable spaces, using the same kind of bacteria (Fig.16). Kosbau and Wetzler won the *IIDA award* in 2010 with their proposal *sand.stone.road* also using populations of *Bacillus Pasteurii* to create roads and paths made of sand, as an alternative for conventional asphalt roads, using a bulldozer to compact the sand and release the bacteria (Fig.17).

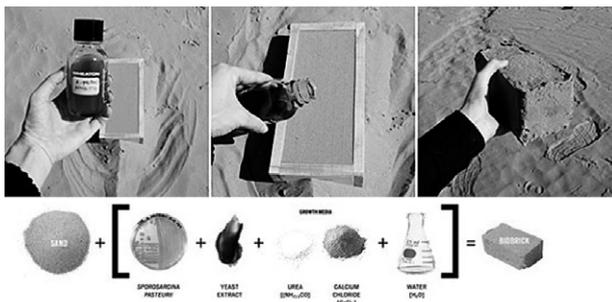


Fig.15. *Sand-brick* (Ginger Dosier 2010)

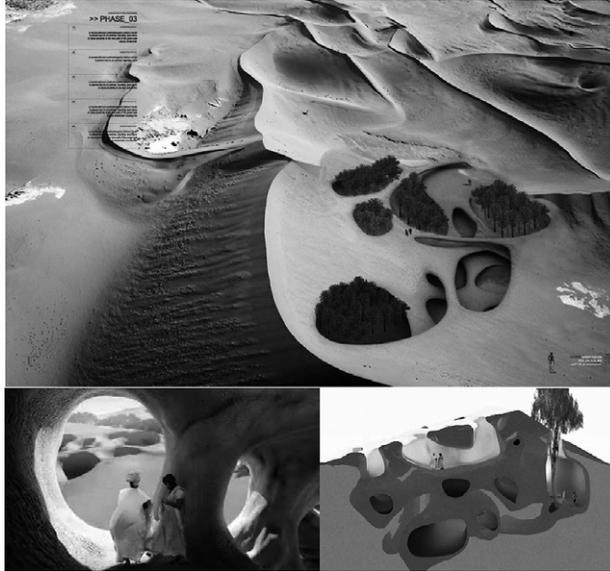


Fig.16. *Arenaceous Desertification Architecture* (Magnus Larsson 2008)

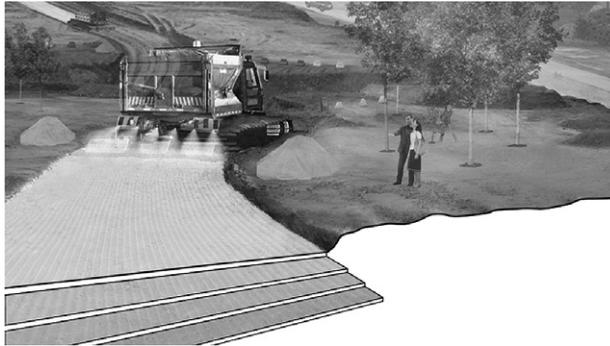


Fig.17. *sand.stone.road.* (Thomas Kosbau and Andrew Wetzler 2010)

There are other ways to face biotechnology through design and conceptualize the notion of the extension of the body and the manipulation of the *living* and the *non-living* that involve human organism directly. These approaches have to do with working with the *semi-living*, a concept coined by Catts and Zurr (2008) as an amalgamation of human extended phenotype and tissue life, a unified body of disembodied living fragments that can only survive through technological support. This class of being works as an ontological device set to draw the attention to the need for re-examining current taxonomies and hierarchical perceptions of life. Tackling these issues the TC&A fabricated the *Victimless Leather Jacket* (2004) (Fig.18) printing mammal cells with a bioprinter, developed by Boland and Mironov (Fig.19), for the *Design and Elastic Mind* exhibition at MOMA.

These *semi-living* entities can grow regardless of their original host species, race, sex, age

and location (Catts & Zurr 2008). They are stripped from a body and introduced into a new extended one, yet to be defined as a specific being. This kind of experiments allows us to think of a new relationship between a house and its inhabitants. It may be even possible in a near future that a house fulfills several organic functions for you, or that you maintain an organic relationship either with your house or some of your appliances. This issue was already proposed by Cronenberg in *Existenz* (Fig.20).

Cruz (2003) devoted his entire PhD to study the relationship between humans and the *architectural flesh*. He proposes a *Synthetic Neoplastic Architecture* identified as partially designed and partially living material in which the line between the *natural* and the *artificial* is progressively blurred. *Hyperdermis* (Fig.21) is one his projects where he explores a new aesthetics of membranes in the realm of architectural space and programme. Joachim speculates about the possibility of building an entire house made of mammal cells cultivated in vitro (Fig.22). Moreover Brecker and Krimizi launch the idea of fabricating inhabitable membranes made of human cells, in such a way that literally one could live surrounded by an extension of his own body out of his body (Fig.23).

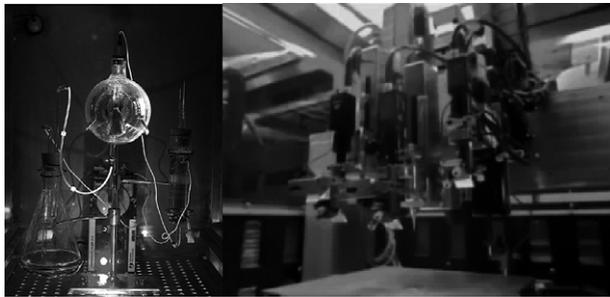


Fig.18. *The Victimless Leather Jacket* (TC&A 2004) Fig. 19. *Bioprinter* (Boland & Mironov)



Fig.20. *Existenz* (David Cronenberg 1999)



Fig.21. *Hyperdermis* (Marcos Cruz)



Fig.22. *In Vitro Meat Habitat* (Terreform1 2008)



Fig.23. *Epidemic Hyperplasia* (John Brecker & Sofia Krimizi 2010)

4. Conclusion

We can conclude the body is a set of gadgets wrapped by certain presence (Breton 1994), not even a subject but a sort of *architecture* made of biological materials, whose number of pieces as a whole mean a sign of overall similarity with other bodies. Twenty years after Breton's thoughts we contribute to this field with the understanding of architecture as the reverse simile. That is to say architecture behaves as a body, a disembodied body that has modified its own reconnaissance due to medical advances since the XVII century. Nowadays architecture is not visible in its continuity and its human sense, but in its rips and hiatus, in its technological sutures expanded into beings, meaning buildings and constructions. These beings have been able to *embody* life in its own processes and outcomes.

All of these conditions have altered McLuhan's thoughts on the media overcoming his preconceived expectations. Furthermore contemporary philosophy has done pretty well organizing these conditions as conceptual groundings for architectural action. That is what McLuhan unfolded in his understanding of world configuration by the Vegetal living structures, bioluminescent micro-organisms, sandstone bacterial structures, printed living tissue or meat houses, open up a deep debate on the redefinition of *human* and *non-human* agency and the *living* and the *non-living*, overcoming the traditional notion of *the human*.

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Sound Media: Hypermediatic Extensions and Social Networking

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1. Framework

1.1 Introduction

Somebody is driving a car and listening to the radio. Through the loudspeaker, the radio host is talking while is interrupted by other members of the team. Everybody in the studio is now chatting at the same time. The sports specialist takes the center of the scene and informs to the audience the result of a tennis match and the triumph of a local player. The fact is that the radio team, working live, was watching live TV too. The program followed as usual, alternating phonographic music, informative flashes, humoristic segments and phone interviews.

Nowadays, we can reach that radiophonic discourse from the 'air' or from 'internet'. But, if we are working on the computer and only listening, the reception is, for us, the same (Fernández 2009). Any way, that simple and common example is showing, first of all, the complexity of the radiophonic phenomena, a complexity that it is related to the present process of *hypermediatization*.

It is true that, from a common point of view, audiovisual mediatizations are more 'natural' than others, like print or sound media. Our 'perception of the world' is audiovisual (plus the tactile, the smell, and taste). But, 'natural perception' is not exclusively 'audiovisual' and, on the other hand, the importance of the print mediatization cannot be overlooked even though writing, reading and understanding printed letters are, evidently, the least natural possible relationships between perception and meaning.

The fact is that the center of our media culture, as well as the center of the political and the academic research on communication, concerns what could be still defined like focused on *letter, images and audiovisual hybridities*. Our usual example: the cell phone became an issue for the social sciences focused on communication when SMS messages started (with the 'risk' it supposes to 'normal writing') and when somebody discovered the possibilities of the 'fourth screen'). At the same time, the number of phone calls rose at least ten times, but the theories about the phone conversation didn't feel pressed to change.

We accept that we are in an era of media convergence, an era that entails discussions on the lives and deaths of old media vs. the emergence and the success of new media. While those elusive subjects are at the heart of the theoretical concerns about media, the radio scene, far from disappearing, increases its audience and keeps its advertising investments. The phone takes the center of our daily life, even more if we add the process of writing, produc-

ing and distributing audiovisual texts using mobile devices; and all of this happens in spite of the crisis of the phonographic, a crisis that could be considered the biggest in the recorded music industry ever.

Without a doubt, Marshall McLuhan was the first theoretical referent that paid attention to the radio's specific importance among electronic media at the same time that television had already won out the battle in the 'real world' of media.

McLuhan stays in a special place in our studies about media: their theories are an inevitable reference for the framing of any work about communication and media, but they are also hard to combine with deep methodologies and general models. Rather than because of their methodologies or theories, McLuhan thesis found fertile ground among researchers because of their suggestiveness and intuitions. The reason for that ambivalence is surely found in the power of McLuhan teachings and in his resistance to adapt them to the grey rules of the academic life.

This is a good moment to go back to McLuhan, and to review and to confirm the importance of the mediatization of sound, beyond the supposedly steady rein of images and letters. On this paper, we will refer specially to his classic book *Understanding Media: The Extensions of Man*, a work full of suggestions and questions that still help us to explore the media world. Here, we'll try to pay our debt to him.

1.2 Objectives

- To review essential terminology about *technical devices, media, languages and discourses* and *social practices (uses)* about or inside the media.
- To understand that the sound media system (radio + phonograph + telephone) was a milestone and a point of departure for the connection of the first social network (phone) with broadcasters (radio) that produces and delivers *Hypermediatic contents* (i.e. live or recorded music and information products).
- To argue that radio broadcasters, through the *air* or through the Internet, have the possibility to maintain broadcasting positions into the interstices of the explosion of the new media.
- To discuss, from the point of view of our results, two central McLuhan's concepts: *media as extensions of man* and *global village*.

1.3 Methodology

This paper is presented as a result of UBCyT Project called "Letter. Image. Sound. Building Cities through Media", 2008-2011 (Code SO 94)", focused on the subject of hypermediatization. We arrived to the results we are presenting today three combined, interdisciplinary approaches:

1. A history of media in relation to the ecology of media as it was developed by authors like McLuhan and Walter Ong.
2. A semiotic of media derived from Latin American researchers like Eliseo Verón.
3. An interdisciplinary analysis in relation to ethnomusicology, with references to the formulations of Rubén López Cano, its most important representative in the Spanish academic world.

2. Results

2.1 Terminology & Theoretical Models in a Changing Age

When we study a *corpus* that includes cases like the example we described above, we differentiate several levels of analysis. We define those levels, schematically, as it follows:

1. *Technical devices inside the media*: technological tools that enable variations in times and spaces, inclusion or not inclusion of parts of the body, related social practices in emission and reception, etc. What is important in our example is the fact that the radio can be listened to while driving.
2. *Media*: group of technical devices and related social practices that allow *communication* to actually happen; discursive relationships among individuals and/or social sectors, beyond true *face-to-face* contact²⁶³. Radio is a *media* but its social recognition is related to its social uses and to the types of messages emitted.
3. *Transposition*: migration of texts (or parts of them) through different media or through different technical devices inside the same media. This point is important because this is the analytical level where we can identify, in our example, that the audience is familiar not only with tennis games, but also with television sport transmissions.
4. *Genres*: Social categories for the classification of texts that make possible its social circulation and its sociological links.
5. *Discursive styles*: social classifications that differentiate rank and evaluate sets of texts.

Our focus will be on the *technological levels* (technical devices and their influence in the life of the media). By focusing on this level, we hope to address some of the more famous McLuhan slogans like *the media is the message*, *the media understood as extensions of man*, *cool and hot media*, *global village*, etc.

Without denying the complexity of McLuhan's contributions, we want to stress the importance of sound media in this environment and to discuss with McLuhan's followers the importance and the limits of his contribution to this particular subject.

In the face of new and ever-changing media scene and under the symbolic umbrella of McLuhan's old metaphors and galaxies, it is helpful to review the terminology for technical devices, media, languages, discourses, and social practices (uses) around or inside the media.

Now, we know that an important change in media life is not only the result of a technical novelty. To be important, a media transformation needs to be supported in three different series of phenomena: 1) changes in the technical devices; 2) changes in the languages, genres and styles supported by the technical devices; and 3) changes in the social practices or uses associated with that particular media (Fernández 2008 35-62).

McLuhan's theories about media were mainly focused on the media as *final results*. That is why he can hold propositions like this one: "The content of a movie is a novel, a comedy or an opera" (McLuhan 1964: 33). From our point of view, we need to distinguish, i.e. the category *fictional film* as one of the possibilities that the media we call *cinema* allows, while

²⁶³ We understand *face to face* contact as *the spatio-temporal coincidence and the possibility of perceptual full contact among individuals and/or linked sectors*.

novels, comedies and operas are *genres* translated to the cinema from other media (like the theater or the book) (Metz 1979).

If McLuhan's most powerful insight is the idea of *extension* as the main effect of media on human life, the most controversial of his contributions is, undoubtedly, the *hot* and *cool* opposition, not only because of the description itself, but also because of the assumptions it presupposes regarding the *effects* of the media on social life in general; for instance, the proposition that states that Nazism was successful thanks to the radio, but that it would have been a failure if television had been its main means of propaganda and communication (McLuhan 1964 p. 261). If we follow closely McLuhan's argumentation, we will find that the *hot* vs. *cool* opposition is more a classification of cultural practices than a mere classification of media:

A hot medium is one that extends one single sense in 'high definition'. High definition is the state of being well filled with data. A photograph is, visually, 'high definition'. A cartoon is 'low definition,' simply because very little visual information is provided. Telephone is a cool medium, or one of low definition, because the ear is given a meager amount of information [...]. On the other hand, hot media do not leave much to be filled in or completed by the audience. Hot media are, therefore, low in participation, and cool media are high in participation or completion by the audience. (McLuhan, 1964, p.36)

As we can see, the opposition between radio and telephone is not based exclusively on the technological aspect but on the *amount of information they provide* and on the *amount of participation they require* or allow from the users²⁶⁴.

There is, still, a technological aspect in this opposition (in order to function, in order to achieve communication, the telephone necessarily demands an input from the user; the radio doesn't) but the whole concept resides on the measure of the *participation* or *completion* done by the audiences. The terms *high* and *low definition*, then, seek to account both for a characteristic of the medium itself (the amount of information it transmits) and for the activities the user is compelled to perform. And here it is where McLuhan's theory seems to lose some ground. As many researches on mass media and communication have showed, it is difficult to account for the amount (and the characteristics) of the audiences' participation without conducting specific research studies on the reception and on the effects of *specific messages* (or contents). In other words: while the medium and its technological characteristics are of extreme importance, it does not determine the reception and interpretation of messages²⁶⁵. In many opportunities McLuhan states that the content of the medium is not only unimportant. Reading with certain disdain the findings of other researchers like Paul Lazarsfeld, McLuhan states: "Although the medium is the *message*, the controls go beyond programming. The restraints are always directed to the 'content', which is always another medium. (McLuhan, 1964, p. 266)

264 Radio, for McLuhan, does more than extending the ear: "Even more than the telephone and the telegraph, radio is the extension of the central nervous system that is matched only but human speech itself (264). From this proposition (radio as an extension of the vernacular tongue) he derives the idea of "global village". Any way, Scolari (2004: 59-61) attributes to McLuhan the origin of 'instrumental metaphor' to understand 'interface' as 'extension'.

265 As Todorov (1964,70) poses it, genres are horizons of expectative for the audiences and models or templates of production for the emission of texts. We'll introduce below the problem of the *languages of radio*.

Based solely in his classification of media as *hot* or *cool*, McLuhan places the radio at the center of the new electronic era, an era supposedly characterized by a return to oral culture and for a massive process of “retribalization”. That is how McLuhan soon takes the opposition between *hot* and *cool* media (an opposition that sought to explain how audiences reacted to different mediums) further into the general realm of cultures in order to explain the *general effects of media on social life*. He goes as far as to hold that

backward countries (...) are much better able to confront and understand electric technology. Not only have backward and nonindustrial cultures no specialist habits to overcome in their encounter with electromagnetism, but they have still much of their traditional oral culture that has the total, unified ‘field’ character of our new electromagnetism..(McLuhan, 1964, p. 40)

At the center of this argument is his analysis of Hitler’s use of the radio as the main mean of propaganda for Nazism. But instead of focusing on the analysis of the radio and his uses in Germany, McLuhan (1964, p.261-3) departs from the ungrounded proposition that, since Germany in the 30s was an unindustrialized country and since the Germans had kept alive their oral networks, the radio had the power to awake a “tribal past” that, in contrast to England and the U.S., had “never ceased to be a reality for the German psyche”. (McLuhan, 1964, p.262). For that procedure, McLuhan places the radio at the center of the *broadcasting system*, a key concept for his idea of global village.

2.2 Media of Sound System: the First Step to the Hypermediatic Extensions

As we have seen, the media of sound have an important place in *Understanding Media*: telephone, radio and phonograph are given important roles, and they receive as much attention as the telegraph, cinema and the television (besides numbers, clothes, comics, cars, weapons, etc. etc.)²⁶⁶.

First of all, and very important for our goal of understanding the relationships among media of sound and the *hypermediatic age*, McLuhan considered each media (telephone, phonograph and radio) as a *single media* and with very different positions in what he calls the *electric age*. Even though he accepted that the radio was very important for the reorientation of the phonographic industry to music (McLuhan 1969 p. 246-7), each media of sound has a particular role in that age, but the relations between different media are seldom considered.

The three media of sound are placed in different positions in the main opposition between hot and cool, but their importance is made more evident by the fact that McLuhan begins his whole argumentation of this theory with musical examples (waltz versus jazz). Moreover, his first specific examples of this fundamental opposition that seeks to explain the different effects of the media upon the users are that of the radio (a hot media, according to his theory) and the telephone (a cool, low definition media).

McLuhan’s consideration of each media as a *single media* excludes the idea of a *media system*. From that point of view, it is impossible to understand the *media effects*. In our opinion, from

266 The chapter about phonograph has a lot of very refined observations about the relationships between phonograph and music. To see our results in this specific fieldwork, see: Fernández et al. 2008.

that perspective (one that overlooks the system), the media effects only can be *dissolved* into the general and highly undefined concept of “culture”. As we have argued before (Fernández 2009), the sound media system (radio + phonograph + telephone) was the first step to connect the first social network (phone) with broadcasters (radio) to produce and deliver *hypermediatic contents* (i.e. the emission of live or recorded music or information products). Thus, the origin of the Internet or the so called *social media* had this important antecedent, which is the same as saying that its origin was in fact *audio* and no *exclusively audiovisual*.

In addition, to understand the importance of our *radio* example, we have proposed (Fernández 1994) the existence of three different *radio languages* based in the relationships that hosts and spaces take through loudspeakers or headphones²⁶⁷. From that point of view, when through the speaker comes a social space, we named this languages as *radio-transmission*; when there isn't space around or behind the host voice or the music, we called it as *radio-support* and, when the space offered through the speaker only is accessible through the media, and the loudspeakers is presented talking with other voices (journalists, specialists, interviewed, humourmakers, etc) and relating musics with news, weather reports with traffic reportes, etc. we called it as *radio-emission*²⁶⁸. *Radio-emission* is considered for us, both qualitative and quantitatively, as the most important, the central, radio programming. This last language is the *radio* wich people think when asked about the media, and never the audience's speech can rebuilt its complexity.

To understand the ways through which a new media system is generated and processed by the culture, and how at the same time it generates new cultural phenomena, we have described two movements that although converging are conceptually opposite²⁶⁹:

- *accumulation*: for a new novel phenomenon within the media to be consolidated and socialized, it must recover, continue, register and feature previous media events, and
- *transformation*: for a phenomenon to be considered as innovative it has to cause a change in the previous discursive habits and customs

These movements can take place on: 1) the technical devices (which tend to be wrongly considered as the only source of innovation in the media real), 2) on the paradigm of genres and styles, and 3) on the realm of social practices and the meta-discourses accompanying the uses and customs of the various media. The objective of this scheme is, basically, to emphasize that media is multidimensional, and that these dimensions are, at least, three and that, in turn, may have relatively independent lives.

The appearance of a discursive phenomenon in media life depends on many elements: the available and effectively used technologies in communication, genres and discursive styles, and the communicative practices in the analyzed society. At the same time, a new discursive phenomenon generates effects on the general style of the epoch. These combinations, which can generate unpredictable and previously non-existent modes of interexchange, determine different transformations of the social life.

When we speak about telephone, phonograph and radio we are thinking in very different

267 An special chapter should be necessary to adapt english terminology for our needs to present our research results.

268 See below more details to understand the importance of the *radio-emission* at social and cultural life.

269 For the whole analytical model, see: Fernández 1994.

mediums, whose only common element is that they control sound-texts. This means that they isolate the sound from its source, convert it into portable signals and transmit it. In the case of phonographic devices, those sounds may also be recorded. From these technological processes those sound-texts, can jump to distant receptors, spatial or temporarily (or both at the same time).

While saying that this may seem something purely technical, in fact, we are talking about one of the features that defined our social life as we know it since when we refer to the system of sound media, in reality we are referring to a phenomenon with little prior tradition.

Sound without image allowed many different uses and practices, from the dance accompanied at the rhythm that emerged from the radio, to the performing of different tasks that don't require visual attention. Since then, all media of sound (and radio especially) compete for capturing the attention of the listener in a context of hearing that can be culturally very complex. The phone is a particular but paradigmatic case because it allowed the inter-individual conversation and an urban network of relationships between individuals that stayed relatively in fixed positions for decades.

The fragment of radio discourse quoted above defies in many senses McLuhan's classification of media. We find relationships not only among media (phone, phonograph and T.V.) but also among different areas of cultural products (cinema, sports, humor, music, etc.). These characteristics prevent us from classifying it as a *low definition* message. Therefore, it challenges McLuhan's characterization of the radio as a *hot media*. What it proves is that the listeners must work very hard in order to understand the messages.

2.3 Music Mediatization Facing the Internet Explosion

Music is without doubts the cultural area where social networking is introducing dramatic transformations²⁷⁰. Firstly, the changes were focused on the *distribution and delivery* of recorded music, but inevitably, the changes (and the crisis) are arriving to the creative and industrial levels. In any case, the demand for *recorded music* without the presence of images, is growing as never before. Then, musical life is one of the main fieldworks where the *new media* are working, where *new extensions* and where *new cultural practices* are being generated.

Music and its transformations through the Internet are changing constantly. Surely, nothing can be defined yet, but on this chapter we would try to advance the understanding of this complex and novel universe from our previous research experiences with all the media of sound. We are trying to understand if the new development of media through the internet is tending to dissolve the place of the *old media* or, more probably, it is just changing their places in the system.

For instance, *Last.fm* presents itself as "a musical service willing to learn from you..." and proposes "connect with other users with whom you share the same musical preferences and recommend songs of its collections or yours". The site avoids to say that it is "us it floods with Elvis and Japanese garage surf ballads..." with the goal of "...always do most democratic musi-

270 "In the century of jazz we are likely to overlook the emergence of the waltz as a hot and explosive human expression that broke through the formal feudal barriers of courtly and choral dance styles" (McLuhan 1964, p. 36). In the first paragraph of "Media Hot and Cold", McLuhan already showed us the importance of music for the understanding of cultural history.

cal culture: each one can hear the music you want, when you want". More over, "without an intermediary to read what you have to like". It is said that there is an utopian proposal in the idea of permanent feedback feed, as that of Enzensberger (1984: 11-14), who, quoting Brecht, thought imperave to turn the gaze to the "means of distribution" in «media».

Of course, that phenomenon is still in the incipient stages but already with a tremendous growth²⁷¹. We think that a case like *Last.Fm* should be studied in connection to pre-existing sound media knowledge and not viceversa. Otherwise, there will be no way to escape the vortex of the Internet and the effect of *permanent innovation* that cancels any comparative study. Let us now review, briefly, the current scenario as we know it. In that context, at one level, now the audiences can tune on radio stations through the Web; some of them are also present or accesible in the AM or FM dial. Anyway, there is an explosion of offers and nobody knows who will survive.

How is *Last.fm* working? On the level of the technical device, *Last.fm* effects a change in musical distribution: it is a *social network* that relates different individuals, allows them to select, and to share musical products with other listeners with similar tastes and criteria. Calvi (2004) has conceptualized this as a phenomenon very different from the previous ones (like portals of peer to peermechanisms). *LastFM* has developed what can be potentially thought of as "the biggest platform musical and social network of the world". The key claims is: "Share your musical tastes, look at what your friends listen to, discover new music" and in addition, "create your own radio".

But what does it means for *LastFM*to 'create your own radio'? First, you register a profile and apply for music; then, the site provides to you a lot of suggestions (lists of *similar* music) and, finally, connects the user to other listeners with similar tastes²⁷². In addition, it adds statistics, visual information about concerts and recordings, videos and interviews.

From *Last.fm*, to create *your own radio* means to register a profile with your musical taste, and to have it filled in (or completed) by the portal with anythingsimilar. If the live broadcasting model is still based on a central server, this partial *p2p* system tends to be organized by the tastes of the users, and by the creation of social networks that "manage" the general content. But, in fact, equivalent mechanisms are being used today by radiobroadcaster stations in search of alternatives that can effectively compete with the online social networks offerings (you can register yourself in the radio online portal, choose your music profile and get ready to receive a stream of *similar music*). Anyway, *LastFm* and its equivalents produce a very different relationship with their audience compared to the *radio-emission* language of the past. But individual relationships to music will be not in the future an exclusive attribute of the social networks. Therefore, *radio-emitters* broadcasters and networks will compite offering *individual* (or very much segmented) musical services. The questions now are: the radio as broadcasting will be dissolved into the social networking? Or, in other words, will the radio broadcasting model (and its relation) to music be irreplaceable?

271 We are taking in account that the *downloading process* is, at least partially, replaced for *streaming process* but as everybody knows, *academic time* is today too slow in regards of the *media changes* and, in an other hand, *LastFm* itself is migrating to a 'pay per listen' model.

272 Discussion of the notion of *taste*, related in fact, with the complex and more general notion of *discursive style* in Fernández 2009. For instance, Clapton and Hendrix, as guitar players, are similar from the point of view of the *genre* (blues) but they don't match from the point of view of the *style*: Hendrix is closer to Jimmy Page or even Pete Townshend than to Clapton.

2.4 Radio as Media: Limits to the Death of Broadcasting

The *mass media crisis* (for as, only a *transformation*) is frequently related to the *extinction of the broadcasters*. But it is very difficult to think about complex societies without *broadcasting activity*. In McLuhans terms, what *media extensions* are necessary to support a cultural / social life more or less *integrated*? Could mass societies survive without any discourses, news or cultural products delivered through centralized media?

Radio and of its *radio-emission* language are hardly at risk of extinction from our cultural life. To support this argument, we'll need to describe here in more details what we understand by *radio-emission*. This *language* is built on live emission, but introducing frequently recorded fragments. So, the emission is always partially unpredictable about its results, and obviously about its effects. The coexistence of live fragments and recorded fragments, is supported by the presence, from the beginning, of telephone conversations that introduce the outside spaces and *real time* information, and by the playing of phonographic recordings, inserting the past time into the *live sequence*. So, radio as a media was already born "*hypermediatic*". Since the TV captured the radio-play and transformed it into the *telenovela* or TV soap opera, radio defines itself as an informative medium in the broad sense: from the time and the weather report of the city or the country of issuance, to the latest music releases or entertainment, going through all the spectrum of political, social or economic reality. Finally, and very important for social life, there is its permanent interaction with the social life: you can receive and understand radio broadcastings while working, driving cars or doing any other compatible human activity.

Summarizing, the *real* and *main* radio, as we understand it, has a largest and dominant presence in our culture but is still unknown to the communication studies. Only this explains how somebody can confuse radiowitt an Internet phenomena as *Last.fm*. This proposition is not *retro* or *nostalgic*. On the contrary, we think –as we suggested above– that the relationships between *broadcasters* and *networks*, are just beginning and both could be reinforced by their synergic interaction. But, once and again, our comprehension of its characteristics needs to be specific.

Main conclusions

Without a doubt Marshall McLuhan was the first theoretical referent to pay attention to the specific importance of radio and we reread his books to present this paper, we found out certain highlights that in our own research history were very useful to suggest, or discuss, our conclusions about the media of sound and their place in the global era.

McLuhan remains in a special place in our studies about media but it is always difficult to incorporate his findings when we think about methodologies and general models of research. The reasons for this ambivalence are many and, as we said at the beginning of this presentation, they are sourced in his resistance to address the question of specific contents as well as his resistance to adapt his intuitions to the academic life.

Regarding the contents, we already mentioned the impossibility of characterizing the content of a medium as "another medium" (McLuhan 266). This confusion makes it impossible to address general habits of reading and producing texts in any society, whereas the concepts of

genre and style provide the correct framework to understand how different texts migrate from an old media to new ones and how new discursive phenomena are thus, in turn, created.

Due to his overlook of the importance of genres and styles as organizers of the activities of the receptor (and of cultural consumption and production in general), McLuhan inevitably jumps into general assertions about cultural and social life, going as far as to characterize entire populations arbitrary as cold or hot. It is this disregard for the content what causes his brilliant idea, the concept of extension, to lose part of its strenght. Aside from the mater of genres and styles as organizers of our discursive life, the concept of extension is undoubtedly a powerful one, since addresses the specificity of technical devices. But, from our perspective, one of McLuhan's weakest points is his notion of media as a singular phenomenon. Or what is the same: the focus of his analysis is always a single media, that is why he insists on the radical differences among radio, telephone, television, etc.

As we have demonstrated, those media are constantly interacting, they modullate each other, and they combine its extensions in what we have called hypermediatic extensions. As many passages of *Understanding Media* clearly show it, McLuhan was aware of this connections between different media. Take his assertion, for example: "One of the many effects of television on radio has been to shift radio from an entertainment medium into a kind of nervous information system" (260), an assertion that undoubtedly holds itself solidly. But these examples are scattered throughout McLuhan's work and they do not conform the center of his theory.

There are probably at least two reasons that explain why McLuhan did not think in terms of hypermediatic extensions. First, there is the matter of the context in which *Understanding Media* was written. During the '60s, the big issue was not the notion of network, but that of what was pertaining to media as a specific field of investigation in communication. Second, it is clear to any reader of *Understanding Media* that as ground-breaking and powerful as it was for the '60s, it was still a work that was not based on empirical research of discourses. Having the advantage of all the previous knowledge and discussions that constructed the field (including McLuhan's), it was only logical for us to see and address the phenomena of hypermediatic extensions from the beginning of our research about radio in Argentina.

The overemphasis on the technological side of media would prevent us from seeing a key element in the survival of radio broadcastings: the receptor not only lets the sound coming from the radio take part of his (or hers) daily activities, but it is also exposed to a wide and complex offer of informative and cultural products. This flood of information keeps the listener in touch with the now and the before of his or her society (both at a micro and a micro level) and that is how that content interacts with his or her life in the more narrower sense of the term.

All these characteristics of McLuhan's theory prevented him from seein the coming of globalization beyond the reduced (and reducing) image of the village. The whole concept of the global village is based on the idea of a few central broadcasters that act as the "bonfire" of the village. It is necessary to say that, among other things, horizontal social networks (obviously also existing in a tribal society) were left outside of McLuhan's design.

The media of sound amplified and articulated by the radio to a mass-audience were the first manifestation of a structure that combines central broadcasting with telephone networks and the circulation of recorded music. It is the general notion of current news what constitutes the firmest frontier for this broadcasting model with its already "old" hypermediatics forces.

The limitations of McLuhan's theories should not keep us from seeing its importance for the study of mass-communication in general, as well as for our particular research on sound media. What we can learn from those limitations in themselves is that any understanding of the macro processes in a given society must be unavoidably based on the discursive study of the micro practices and interexchanges in that same society.

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Digital Skin

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1. Introduction

The industrial revolution introduced the railroad and the telegraph line, paving the way for future changes in communications. The train and railway system caused sudden distortions in traditional perspective and vision. This foreshortening of time and space due to the train's speed caused the display in immediate succession of views and objects that in their original spatiality belonged to separate realms. The accelerated viewer isolated from nature by extra mechanical skin, was able to perceive the discrete as it rolled past the coach window indiscriminately; this was the beginning of the 'synthetic sense' that has since that time become a basic feature of human perception.

It brought about the perceptual changes needed in early 20th-century culture for the rise of the new media that captured communications: photography, cinema, radio and the telephone. The new 'high-speed' technologies were the origins of the modern 'annihilation of space and time' upon which 19th- and 20th-century perceptions of the real world depend. McLuhan described these phenomena of Western world implosion caused by electronic communication at the speed of light:

After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. Rapidly, we approach the final phase of the extensions of man—the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by the various media. (McLuhan 1964, p.19)

To cope with such extreme changes in perception, special qualities are needed, traditionally owned by the artists. In McLuhan's words (1964, P.33): 'The serious artist is the only person able to encounter technology with impunity, just because he is an expert aware of the changes in sense perception'.

J.M.W. Turner was one of the pioneer artists to implement acceleration and disorientation of human body in technology biased reality. In his oil painting *Rain, Steam, and Speed the Great Western Railway* (1844), he confronted a 'slow' ploughman in a field with a high-speed locomotive crossing it diagonally while causing a whirlwind in the pastoral landscape.



Fig. 7. J.M.W. Turner, *Rain, Steam, and Speed the Great Western Railway*, 1844, oil on canvas, 91x121.8 cm. From: Wikimedia Commons

The overall impression is of compression and distortion caused by the speed, as perceived by the traveling artist positioned in accelerating capsule for close experience of speed and nature forces. The overall impression is lack of depth by eliminating 'natural' shadows.

The evolution from being an artist in a slow mechanical world to an accelerated cyber-artist is a daily occurrence for most of us. For example, experiencing a series of pictures along the platform wall in a train station, from a stationary sleeping wagon, has its banal outcome. The train passenger looking out of the window notices a single discrete frame of the series, and analyzes it according to traditional semiotics. While the accelerating train leaves the platform, the series of frames advances, creating a '*durée*' of a filmstrip with a varied meaning. The impact of the Doppler Effect is noticed as in Turner's paintings. While each passenger looks at his cell-phone display, his Palm held computer or other digital gadget his sight and mind quantum jumps to a global superposition, via the singularity of internet hubs.

2. Implosion

In cyberspace, composed of computer networks like the Internet, the information propagates nearly at the speed of light. At that speed less than 0.1 seconds is needed for an electronic signal to join the two most distant locations on Earth. The cyberspace compresses the Earth and its content to a black hole like shape with an event horizon of approximately 2 cm, located at a near-zero distance from the surfers (artist) connected to it, Calder(1979, p. 60).

Hawking (2001) asserts that the entropy (the number of internal states) of a black hole yields information of what fell into the black hole and is likely to be stored, like on a record, enabling it to be replayed when the black hole disappears. From this, one may suppose that information regarding all phenomena in the three-dimensional world can be stored at its two-dimensional boundary like holographic images seen on the event horizon.

The internet consists of connections between terminal points that create junctions. These junctions branch out to bigger junctions, which, in turn, are joined to a central hub that processes information according to the Bose-Einstein condensation law Barabasi (2002, p. 140). In other words, central junctions, like Google, YouTube, Facebook, twitter and Yahoo,

achieve the greatest number of connections to pages in the network. Rosen (2006a, p. 341) claims that cyberspace formation resembles that of black holes into whose singularities all information is hurled to the event horizon. The event horizon is, in this case, various gadgets such as computers, cell phones, TV sets and web cams that convert the real world into digital information. The silicon chip generates teleportation of linear time-space into electronic information that travels at the speed of light in the singularity of cyberspace.

Restak (2001, p. 26) remarks, that embedded neural microcircuit of neuron cells and electronic interface, enabling the direct connection of surfer's body to computer networks. This extends the skin and associative cortex of each human to the expanded capacity of super neo-cortex, of holistic consciousness.

McLuhan and Fiore (1967, p.16) described such phenomena:

Electric circuitry has overthrown the regime of 'time' and 'space' and pours upon us instantly and continuously the concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism. The old civic, state, and national groupings have become unworkable. Nothing can be further from the spirit of the new technology than 'a place for everything and everything in its place.' You can't GO home again.

3. Omnipresent art

Digital art is globally produced and distributed simultaneously at the speed of light, and within fraction of seconds reach any surfer worldwide. Artistic global interactivity equalized the speed of the artist, art object, and the art consumer. The cyber Art Cloud is monitored by search engines, hubs, social networks such as Google, YouTube, Facebook, Twitter and Yahoo, involving about 2 billion (Internetworldstats 2011) of users and hundreds of thousands of servers that store in their memories the contents of around 1 trillion (as in 1,000,000,000,000) unique URLs on the web at once. (Google 2008).

There is a dramatic change in characteristics of contemporary art made in such intensive electronic environment:

Today, when we have extended all parts of our bodies and senses by technology, we are haunted by the need for an outer consensus of technology and experience that would raise our communal lives to the level of a world-wide consensus. (McLuhan 1964, p.105)



Fig. 2. *Explosion of human body, implosion of the Globe.*

Cyberspace has become one united creative digital artistic text (hypertext) that allows any artist to add to it, and any user to download art. The search machine like Google is a new 'co-artist' of global art, making use of the crawler and mining devices that code, map and grade the trillion of pages on the net. As a result, the search engine has become a conscious entity to every artist, art object and art consumer in WWW.

Joining us all to cyberspace has of necessity become part of this global consciousness. Searching for, finding and modifying any art is carried out in fractions of seconds, or in other words, the art content is located at a distance from surfer's body the same as the reaction time of the human nervous system, and is therefore part of our bodies and skin. For example the search engine Google carried out a search for the term 'art', which brought the result of about: 2,760,000,000 results for 'art' in 0.14 seconds (accomplished 3 April 2011), that is to say in a fraction of a seconds more than a two and a half billion relevant results were received, of which the first were the most suitable according to surfer's preferences, surfing history and geographic location. Rosen (2006b) suggests that art created and stored in cyberspace is not detached from the art consumer and the artist, but is inseparable part of them. The unification of artist and art consumers occurs in parallel by additional means, such as the Global Positioning System, (GPS), that supplies a real-time picture, including and synchronizing all locations of its components, and also global networks of cellular telephones. Cellular phone assimilation in Israel has reached a peak of 1,385 per 1,000 people, in 2007 (NationMaster 2011). The individual users of the system are in superposition one to the other, aware of the exact position and time of every element in relation to others. Google like GPS is aware of the total art elements in space and time (hyper-art) in cyberspace. In this context, artist's art consumers are not discrete; they are interconnected in the frame of global 'Art Cloud':

By imposing unvisualizable relationships that are the result of instant speed, electric technology dethrones the visual sense and restores us to the dominion of synesthesia, and the close interinvolvement of the other senses. (McLuhan 1964, p.108)

The cyber 'Art Cloud' enables consuming art in ways that were inconceivable in 'slow' mechanical discrete space. For example, the EPR paradox (Einstein-Podolsky-Rosen) is a thought experiment that demonstrates that the result of a measurement performed on one part of a quantum system can have an instantaneous effect on the result of a measurement performed on another part, regardless of the distance separating the two parts. Einstein called this phenomenon 'spooky action at a distance' Rosen (2006b).

The meaning is that a number of atoms in artist's body are interconnected to an unseen atomic network on the other side of the universe, and influence the state of billions of atoms light years away. The implications of the experiment are that the universe is a-local, where events at one place on the surface (skin) of the Earth instantaneously influence events on the other side of the universe.

Locality matches the traditional state of dichotomy between art object and artist. Therefore Alice the artist and Bob the art consumer are two separate subjects of EPR paradox, and in a state in which Alice will immediately know something about Bob who is far away from her, which is impossible. In mechanical 'slow' world, remote artist and art consumer are in this discrete state of one knowing nothing about the other. As mentioned, Alice, Bob and others are now 'fast' surfers, interconnected in cyberspace 'Art Cloud'. Their art browsing of the two (or many) separate electrons (art objects) discharged by the artist(s) becomes a single measurement (art appreciation) carried out by the hyper-artist-consumer. Kafatos & Nadeau (1990, p. 45-47) summarizes John A. Wheelers' delayed-choice two slits experiment:

Where single photons following two paths, or one path, according to a choice made 'after' the photon has followed one or both paths. The results indicate that wave-like or particle-like properties are determined not just by the status of the two paths. They are also determined by the decision of the experimenter to make a measurement or observation by changing that status... the observer and the observed system cannot be separate and distinct in space. They also show that this distinction does not exist in time.

The cyber art creator 'caused' hyper-meaning art to happen 'after' it has already uploaded to the internet. An art of this kind appears impossible to the traditional slow mutable art consumer, located at museum and gallery outside the event horizon of cyberspace.

At the beginning of the 20th century Valéry (1991, p.16) predicted life in such Ubiquity: 'Just as water, gas, and electricity are brought into our houses from far off to satisfy our need in response to a minimal effort, so we shall be supplied with visual or auditory images, which will appear and disappear at a simple movement of the hand, hardly more than a sign'.

Half a century later Baudrillard (1992) described 'Hyper-reality', or hyperspace of a compressed reality that has lost its appearance, locality and significance. Immersion in augmented reality creates the feeling of schizophrenia, and personality dichotomy. Virilio (1997, p.16) describes NASA scientists who use Data suits, in order to activate a distant robot on Mars, an action that places them simultaneously in two far places and creates schizophrenia. Virilio and Lortinger (2002, p.86) relates to the phenomenon as 'super-natural', and religious, in which the data-suit transforms the surfer into a spectre, found simultaneously in number of places.

Nam June Paik's 'Mind and Body' piece from the 90's contains a cyborg image on TV calibration pattern. This image describes the present level in the understanding of a human body relating to the Universe. The span of his arms, skin and consciousness are greatly expanded by means of electro-magnetic waves.

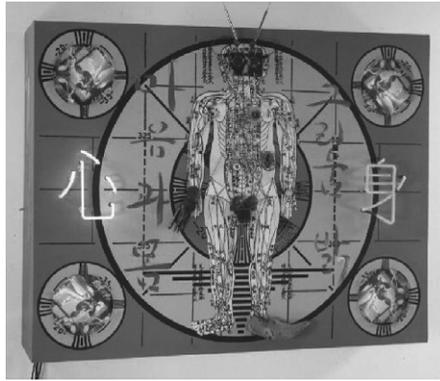


Fig. 3. Nam June Paik *Mind and Body*, c. 1990.

Superposition is probably the characteristics of a body falling beyond the event horizon of a black hole, Rosen (2006a). The body extends dramatically from outside the event horizon into the infinity of the singularity. Seemingly time slows down and the distance shortens. That is exactly the feeling in the hand wearing a data glove activating a robot on Mars from afar. NASA scientist equipped with a head-set and data-suit appears to be harassed and paralysed by the blinding explosion of remote televised images:

We have to numb our central nervous system when it is extended and exposed, or we will die... Thus the age of anxiety and of electric media is also the age of the unconscious and of apathy. But it is strikingly the age of consciousness of the unconscious, in addition. With our central nervous system strategically numbed, the tasks of conscious awareness and order are transferred to the physical life of man, so that for the first time he has become aware of technology as an extension of his physical body. (McLuhan 1964, p.56)

In USA, about 80% of the teens carry a cell phone. Almost half of the surveyed teens say that having a cell phone is 'key' to their social lives, and new digital gadgets are absolutely essential parts of their existence: 'Leaving home without my phone almost feels like leaving the house naked' (CNET 2008), stated Brenna, 17, who participated in the panel.

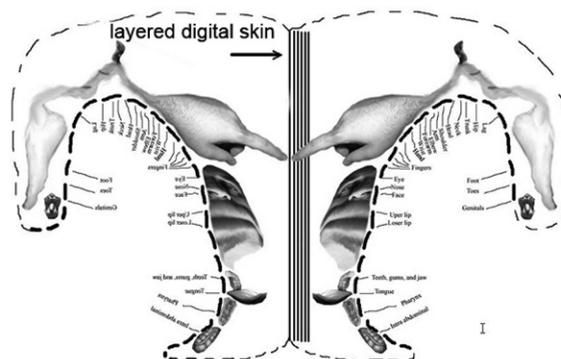


Fig. 4. Digital skin extension of central nervous system and consciousness.

The Euclidian discrete Universe familiar to us became a hyper-link to every surfer. Cyberspace electronically compresses the events in the Universe into the hub singularity of his body, while a finger of his hand extended to almost touch the infinity on screen opposite him. McLuhan referred to these phenomena of the gadget lover:

Electric age gave us the means of instant, total field-awareness. With such awareness, subliminal life, private and social, has been hoicked up into full view, with the result that we have 'social consciousness' presented to us as a cause of guilt-feelings. Existentialism offers a philosophy of structures, rather than categories of individual separateness or points of view. In the electric age we wear all mankind as our skin. (McLuhan 1964, p.56)

The surfer finds himself enclosed inside a spherical mirroring screen reflecting the images of everything around him (Omer & Rosen 2006). For a second it seems to him the he has returned to Pythagoras' world, where man is the center of a flat Universe, with planets and spheres circling him, and the whole enveloped in God's embrace. The surfer's finger is pushing to reach God's finger. To his amazement he discovers that the Heavenly embrace and the finger of God that he is trying to reach, and almost touches, is not God's finger, but his own. Life is carried in an electronic Panopticon, in which the subject looking out from the center sees around him a flat world circumscribed by his own skin extensions. In cyber art the human image and consciousness appears on silicon extensions, implanted under the subjects' skin, which enables the global digital skin extension of his body and consciousness. Existence in such hyper-reality is the continuous artistic act of a self reflective hyper-subject (Art=Life).

4. Beyond reality

Jean Baudrillard (1992) argued that once one has passed beyond this point of detachment from the real, the process becomes irreversible. We will no longer be able to find the objects and events that existed before the cyber immersion. We will not be able to find the history that had been before cyberspace. The original essence of art and the original concept of history have disappeared; all now is part of a real-time holistic data sphere (simulacra) inseparable from its models of perfection and simulation. Cyberspace has compressed time and space into a short circuit hyper-reality. Cyberspace is more real than everyday life; computer games, social networks and digital 3D simulations are more fascinating and alluring than the daily social activities of school, work, sports or politics, and hyper-real theme parks like Disney World and VR environments are more attractive than actual geographical sites. The hyper-real symbolizes the death of the real, and the rebirth of a holistic reality resurrected within a system of digital data. History, sociology, philosophy and art will never again be as before this point. We will no longer be able to know, ever, what art had been before it compressed itself in cyberspace. We will never again know what history had been before its aggregation in an ultimate Vannevar Bush's 'Memex', the technical perfection of real-time holistic data memory.

Rosen (2010, p.373-374) suggests that the permanent interconnection between both virtual and empiric worlds introduces a new way of being and a new ontological philosophy. Karl Popper's theory of the three worlds (Popper 1978) is dramatically altered. Tradition-

ally the classic world 3 of hypotheses can never influence directly the empirical world 1 of physical 'objects' and vice versa. To achieve this, the mediation of subjective reality, human thoughts, feelings, *etc.*, of world 2 is necessary. Cyberspace alters that fact. For example, a surfer may use an on-line Internet application that controls and displays a mutation of DNA material or integrated circuits embedded in biological cells. A theory of the function of these circuits finds the way to world 3. Sensors (world 1) transmit direct feedback data from the electro-biological cells. While the cyberspace is functioning, there is a real-time feedback of world 1, world 3 and world 2 (the surfer). The electro-biological cells and gadgets are now part of the surfer's extended body his nervous system and skin. Within interconnected cybernetic cloud, world 3 directly affects world 1, and world 2. Popper's original discrete, linear relation of world 1, 2 and 3 becomes a holistic real-time hyper-sphere. This ontological shift affects artistic quantities and qualities that originally defined the artistic object. Art works (world 1) can be controlled and altered by gadgets and real-time predictive software (world 3) causing art consumers to decide and act in the creative scene (world 2). These acts create a closed-loop '*durée*' of art, interconnecting the three worlds. The cyberspace can be comprehended as a container of Platonic ideas that symbolizes the Platonic triangles and tables that emerge from mathematical algorithms. The data can be manipulated, altered and copied by the demiurge (the surfer).

A piece by Eduardo Kac (1998-99), *Genesis*, is a transgenic art installation that explores the network relationship between technology, society, ethics, biology and myths. An 'artist's synthetic gene' was fabricated. The gene contained a Morse-encoded verse from the biblical Book of Genesis. The verse reads: 'Let man have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moves upon the earth.' This verse implies humanity's domination over nature. Morse code represents the dawn of the information age – the genesis of global time-space compression. The *Genesis* gene was incorporated into bacteria, which were shown in the gallery. Web surfers could control ultraviolet illumination in the gallery, causing biological mutations in the bacteria containing the verse from Genesis. After successive manipulations, the DNA was decoded into Morse code, and into mutated verse in English. This art piece suggests a new holistic interactive data sphere where the ability to change the verse and bacteria is a reciprocal symbolic gesture.

5. Digital Skin

Ephemeral8's aka Avi Rosen 'Digital Skin 2' (Rosen2008) video-bricolage utilizes the internet as a digital large canvas for endless cyber voyages, embedding personal scanned digital data as an extra data layer of 'Google Earth and Sky'. His body skin and mind extension are part of holistic terrestrial and galactic digital data strips produced by satellites and space telescopes. The three-dimensional universe contains discrete art objects and art creating and consuming subjects, imploded into an Orbifold (for 'orbit-manifold'), uniting cyberspace, physical space and cognitive space as digital data displayed on the computer monitor (Rosen 2006a). The orbifold topology and the speed of light drastically transformed the traveling experience.



Fig. 5. 'Digital Skin 2' (2008), Ephemeral 8 aka Avi Rosen, Interactive net video art,

A cyber-*flâneur's* superposition existence positions him in no time on each location on the torus envelope. *Digital Skin* is a cosmic virtual extension of Marcel Duchamp's unfinished *Large Glass* piece, described in the video's sound track by Duchamp's own voice, digitally compressed. The departure and arrival to each location on the digital skin piece is compressed to a singularity.

Each video sequence is a trigger for further construction\deconstruction of audiovisual hyper memory which meets Barthes's (2004, p.4) ideas of 'multi-dimensional space in which many and varied writings are combined and meet, and none are foremost'.

The internet is the domain of ephemeral8's '*Bits of My Life, Impressions of a data Flâneur*', video blog. Ephemeral8 systematically employs his cell phone and other gadgets to create an extensive video documentation 'backup' of his daily life occurrences.



Fig. 6. ephemeral8, Bits of My Life (BML 2007-2011) ongoing Video blog.

BML is his eternal 'digital mummy' located in cyberspace superposition, ready and available for use by present and future generations. The videos are mostly as is, unedited, and directly uploaded from his cell phone to the YouTube site. The video Bits are the 'meme' for further use of

global digital skin and memory sequences consumed by other cyber-*flâneurs*. Google, YouTube and their partners become a giant hub, dominating cyber-culture, the global economy, surfers language and behavior. Cyberspace is an extension of ephemeral8's foot, eye, skin and nervous system positioned on a digital torus-like topology.

YouTube awareness of each data bit at its domain generates immediate messages to its members such as:

Subject: 'Information about your video '0311110921.3g2''

Dear ephemeral8,

Your video, 0311110921.3g2, may have content that is owned or licensed by Sony ATV Publishing.

No action is required on your part; however, if you are interested in learning how this affects your video...'

Quick check of the linked video, (one of more than 41000 uploaded by ephemeral8 in last 3,5 years), discovers an amazing fact, the video counter indicates: '0' views! Actually YouTube was the only entity aware of the licensed fragment and other elements of video's sound track. 'Bits of My Life' are Internet meme dispersed voluntarily peer-to-peer via search machines, social networks, blogs, email, and other web-based services. Internet memes can evolve and spread instantly, sometimes reaching viral popularity and vanishing all in a same speed. McLuhan actually predicted the Internet meme:

As one aspect of perspective and printing, mathematical infinity serves as an instance of how our various physical extensions or media act upon one another through the agency of our senses. It is in this mode that man appears as the reproductive organ of the technological world, a fact that Samuel Butler bizarrely announced in Erehwon. (McLuhan 1964, p.112)

In this context of human beings as cyber meme conductors (Hayles 2006) remarked: 'In computational intense cultures such as US Canada Western and Eastern cultures like Japan, machine to machine communication has now progressed to the point where it's about 99% of all coded traffic and most of this traffic takes place outside human awareness, so the human awareness is a tiny tip of pyramid of huge amount of data flow between machines. Nobody knows what those communications are...'

The unification of cyber-*flâneur's* skin and cyber data sphere is the subject of an interactive network piece, *1 year performance video* by (River & Whid 2004). A net live video stream of the two artists reveals their acts in two isolated cells.



Fig. 7. (River & Whid 2004), *1 year performance video*,

The network installation transfers the burden of detention in closed cells from the artists to the surfer. The performance will be completed when the surfer finishes one year of online accumulated participation, when he will gain a digital copy of the piece's data base. Ephem-

eral8 was the first one accomplishing 1 year of watching the performance. The surfers do not know definitely whether the video stream is live, or recorded, or if the artists are real people or avatars. The server control program chooses the footage to be shown, according to the time of entrance, the number and frequency of previous transitions, and the duration of each video clip. According to Rosen (2010, p.379) the control ability designates the server computer, the network and the program as powerful Artificial Intelligence art creators, exactly like the two artists. As the local time of the surfer's computer changes, it thus affects the two artists' activities, converting the surfer from passive spectator to an active director of the happenings on the screen. The interactive video art is aware of surfer's actions, McLuhan pointed out:

Our mechanical technologies for extending and separating the functions of our physical beings have brought us near to a state of disintegration by putting us out of touch with ourselves. It may very well be that in our conscious inner lives the interplay among our senses is what constitutes the sense of touch. Perhaps *touch* is not just skin contact with *things*, but the very life of things in the *mind*? (McLuhan 1964, p.105)

The surfer is situated in the center of the electronic Panopticon, while the computer screen serves as a peep-hole for the global data structure. The same is true for the two artists while using their laptops in their cells. The mind and gaze of the surfer activates the two artists, and vice versa. Without the actions and gaze of the surfers, the piece will not be realized. The observers and the observed become bits of data in hyper-skin, condensing its bits to a super-atom of holistic conscious Cloud computing entity.

6. Conclusion

Paraphrasing McLuhan's words in 'Understanding Media', after long history of explosion, by means of mechanical technologies, the digitally diversified world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than twenty years of digital network technology (WWW), we have extended our central nervous system itself and skin in a galactic embrace, abolishing both space and time as far as our planet is concerned. We witness the singularity phase of man-the cybernetic simulation of consciousness, when the creative process of knowing is being collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by the digital media. Cyberspace demonstrates Heidegger's *thrownness*, and his *Dasein* being in cyberspace, when one always finds oneself already in a certain historically conditioned spiritual and material environment of augmented reality mediated life that causes one to act upon instincts and immediate feedback to simulations, internet meme and avatar actions.

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Beyond the dualism between technology and culture: an empirical research on memory practices

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1. Introduction

In recent years, cultural theorists have observed an irreversible trend toward a so-called “mediation of memory”: the idea that media, technologies for producing, storing, retrieving contents, and memory practices increasingly merge and coil beyond distinction.

From Plato to McLuhan, through Ong’s [21], Innis’s [14], Haveloch’s [12], contributions, many scholars investigated the relation between memory and technology, within a history that includes the shift from manuscript to print culture and from orality to literacy.

The foundation myth is, in this sense, the position Plato expressed in the *Fedro*. Whilst questioning the positive or negative influence of writing technology in the ancient Greek cultural system, he criticized writing itself as an external surrogate of the internal memory mental abilities, and used writing to present his pamphlet and to sharply break with the oral tradition of Socrates, his magister.

McLuhan, in particular in the *Gutenberg Galaxy* [20], theorized a progressive “exteriorization” of individual memory, which started with the writing era: he assessed that media work as “augmenting tools”, i.e. body extensions which allow people to extend their capability to record, access and share memories.

He argued that there have been three basic technological innovations related to three phases in the cultural and social reproduction system: the invention of the phonetic alphabet by the ancient Greeks which shifted humans out of oral patterns of speech and thought; the introduction of movable type by Gutenberg in the 16th century which accelerated this process; and the invention of electric media, which - according to the author, will ultimately transform all aspects of our social and psychic existence.

From the same School of Toronto, Walter Ong tried to define the link between cognitive, cultural issues and technological interfaces also referring to the contribution of anthropologists as Malinowski [19], Lèvi-Strauss [18] and psychology studies [16]. He focused on the changing of psychodynamics in different cultural and technological contexts and he outlined the differences between primary oral cultures and writing ones in managing and configuring their mnemonics. In particular, he argued that the primary oral cultures mind-sets, compared to the written-culture ones, were “additive rather than subordinative”, “aggregative rather than analytic”, “empathetic and participatory rather than objectively distanced” and finally “homeostatic” and based on redundancy and formulas. Through an in-depth analysis of these features in cultural productions of ancient cultures, Ong addressed how the modal-

ity with which we access, save and communicate knowledge is strongly embodied in specific socio-technical contexts.

His contribution was particularly significant for the highlight on the function of technologies as cultural interfaces and on their importance as active agents in the cultural systems.

Despite his attempt to tackle the memory and cultural reproduction issue with an interdisciplinary approach which put cultural, technological and also anthropological analysis levels in relation, several subsequent theories acknowledge the intimate relationship between memory and media, often presenting them as a set of fallacious binary oppositions.

In particular, as observed by van Dijk [27]

there is the tendency to discern memory as an internal, physiological human capacity and media as external tools to which part of this human capability is outsourced. Adjunct to this distinction is the implicit or explicit separation of real (corporeal) and artificial (technological) memory.

We can add to this backbone division among brain, mind and technologies the other pivotal one, related to the individual or social scale of memory: a dichotomy which was expressed in the psychological current influenced by Bergson and Freud on one hand, and in the sociologic approach to memory on the other one.

In this sense, Halbwachs [11] and Assman [2] advocated the importance of social frames in their role of strongly configuring individual memory, contributing to the definition of a “collective” and “cultural” memory concept.

Only more recently, Silverstone and Thompson reintroduced the role of media, intended both as artifacts and as channels, as factors which strongly impact on the memory system.

Marianne Hirsch [13] uses the term “postmemory” to describe those memories inherited, not one’s own yet a part of one’s psyche; Alison Landsberg [15] defines “prosthetic memory” reminiscences that circulate through mass culture and are acquired by people for whom they have no lived experience.

Silverstone [23] outlines the influence of media stories and contents in shaping the cultural memory of contemporary societies, and stresses the conflicting nature of the relationship between individuals and mass media, both struggling in the imagery arena for the power and supremacy on memory landscape. Starting from the Adorno’s idea [1] of television as “reverse psychoanalysis” - a mean for constructing, despite of de-constructing, the layers of the unconscious - he defines media processes as “reverse historical work”: means to stratify narrations, interpretations, emotions to the past in spite of contributing to reach the essence of the reality.

Less critically than Silverstone, Thompson [25] highlights the role and the power of the individual agency in the media reception, focusing on how individual experiences are deeply interlaced with mediated ones, and observing that “mediated quasi interactions” between individuals and media characters are blurring the boundaries between private and public memory and often co-create the heritage of social and cultural items that “must” be remembered.

Actually, the passage from the electronic to the digital age, the growing importance of digital tools in the construction of personal remembrance and the ongoing capability of digital technology to store contents, seem to create the conditions for the rising of an homogeneous memory heritage, an empty space in which each individual is technologically allowed to create his/her own memory, to use it in a personalized manner and to exploit it within his/her social sphere.

Furthermore, social media and web 2.0 technologies seem to erase spatial boundaries between private and public memories, favoring the emergence of “user generated memories” which compete with, and renovate, the “official” and public ones.

In this sense, we can think of a “bottom-up memory” in which, through participatory tools as web logs, social sharing sites (as Facebook) and photo and video sharing platforms (as Youtube or Flickr), individual memories assume a central role in the public sphere to create a more democratic and participatory history if compared to the institutional one.

We could define this tendency as a “user generated” memory and many examples and experimentations that interpret such idea can be found in the web: as, for example, the rising in America of “family legacy videos”²⁷³, memory products, delivered through several channels and media, (from Youtube to pods to traditional books), that professional “personal historians” collect, package and distribute, with fee, to a wide audience.

In a McLuhan’s perspective, digital media seem to widen the spatial metaphor of “the global village” to include memory issues, promoting the idea that each one of us can create his/her memory patchwork and relate his/her biography to other pasts, without geographic limits and distinctions between private and public spaces.

Thus, such family legacy videos often link many documents, sources, interpretations that come from different places, tools and sources, mixing together private stories with main events, unknown biographies with stars and collective myths, creating a “hypertextual past” that can be spatially and temporally browsed.

Platforms such as Flickr firmly embed our memory in a culture of connectivity, a system where the powerfulness of social networking sites are gradually penetrating the core of our daily routines, continuously connecting our life, experience, past, to that of others persons and places, far away in space and time.

If this “copy/pasting” of layers, sources and styles, seems to be accepted and quite metabolized in the postmodern vision of life, as a fluid practice which concerns the processes of reconfiguring the identity in (and for) the present, it seems stranger and more complex when it is applied to the past, where meta-reflexivity agents should maintain the identity pattern more static and consistent.

The time dimension of cultural memory seems deeply reconfigured too: the distinction between present and past contents becomes often unclear: what we are posting in our Facebook wall today will remain in the next weeks, months, perhaps years... the temporal stratification of our on line identity is something not yet clearly perceived. It will become a further representational layer of our identity, a new “memory format” which merges a diachronic description (typical of structured cultural products as biographies and diaries, which perform an high meta-reflexivity level) with a spontaneous and not filtered communicative approach (peculiar of synchronous forms of communication).

In conclusion, from a too strictly technological point of view, digital technology and network environments seem act as neutral factors which impact on the individual and social memory schemes homogeneously. Thus, the web could be viewed as a “no-place” of memory and a “timeless time” [9] environment which flattens contents, identities, their temporal sedimentation and spatial coordinates.

The paper aims at empirically discussing and critically deconstructing these assumptions. Starting from a qualitative research based on 52 in-depth interviews to Italian youngsters [10],

273 See for example <http://www.familylegacyvideo.com/>. Viewed 10 April 2011.

it aims at elaborating on how technologies for recording, retrieving and re-using records impact differently on different users and cultural contexts, even in a “digital native” generation.

Focusing on specific issues of the relation between memory and technology -as the tie between media and contingent fruition contexts, habits and technology uses - a strong intertwining between technological and cultural factors in the individual and social shaping of memory will be outlined.

In particular, some schematic assertions will be thoroughly analyzed:

- the growing presence of digital media homogeneously (in all the users typologies) augments the amount of records and memories that are produced;
- youngster generations use any type of digital tool (video camera, mobile camera phone, sound recorder) for communicating, registering, saving memories, their choices depending on contingent and external situations and not on proactive distinctions among media functions and their cultural meanings and usages;
- as the recording act, also the memory retrieving and recalling act is being more and more technologically driven.

Respect to these assumptions, a more culturally situated standpoint will be provided on technological management of memory dimensions: different users seem to perform different strategies of space and time memory management, showing diverse interpretations of digital memory tools and of their use as cultural artifacts.

Throughout these arguments, the paper aims at going beyond the classic dualism that has been outlined between ICT studies and social sciences approach on memory, discussing how media, in particular digital and multimedia tools, can be considered as influencing factors in the contemporary memory landscape, but only as a part of the agency in the memory practices, which continue to be strongly embodied in individual experiences and embedded in socio-cultural contexts.

2. Stop-Smile-Click on! Setting the Technologies of Self

The idea that digital technologies provide standardised sets for creating and formatting memories is analysed and empirically discussed in the following paragraph.

One of the most diffused opinions on digital technologies, in fact, is that the growing technological access to recording tools provides an hypertrophy of memory, which consequently causes a high level of redundancy and the incapability, for people, to select and give importance to what they record.

According to this approach people - being technologically allowed to easily record whatever they want - just to do so: this opinion seems to be confirmed by common sense and perception on our own behaviour when we enthusiastically get in touch with a new technological tool, overusing it beyond practical and rational aims.

The sentence below, from M. (male, 23 y.o.) could confirm this attitude. His assertion can be considered as paradigmatic of a common typology of “tech fascinated” person:

Memory isn't a thing that comes from me, but from all this technology that is everywhere and that I use... because I use it a lot, and, at the end, it is becoming an automatic use. Nevertheless, (memory) is caused more by technology than by a real need to use it

As M., in fact, many individuals, especially youngsters and members of the “digital natives” generation seem to use technology “per se”, as a compulsory means for augmenting and performing the present, without any strategic or expressive plan.

Recording and saving act is interpreted, in this sense, as a gesture which is entirely inscribed in the contingent and ephemeral moment, with no deep links to the future, nor, often, social or communicative aims in the present.

In fact, despite several studies [17; 24] underline the role of photography for communication and social interaction and the use of pictures as part of conversation or for confirming social bonds between friends, in this research the communication function of photography seems to be re-sized.

As several interviewed assessed, the recording act is often suggested more by an anxiety to not be living entirely the present than by a willing to preserve such present in the future.

In the liquid era [4] people need to continuously renovate their consumption practices, needs, existential horizons and, in such a cultural scenario, recording an event is a manner to multiply possible universes, uses and imageries of consumption connected with what is happening.

People must believe that, while we are living something, we are not renouncing to something else, so the recording of an event is a virtualization of the present, the transformation of the life in a product able to be exploited in many other mediated forms, according to all the possible choices, to be consumed in many other places, times, contexts.

This first interpretation of the recording act deeply outlines the link between technological practices and cultural, even existential styles, witnessing how the same technological act - the contemporary compulsory registration of the life - can be interpreted as a superficial, technologically driven behaviour or, on the contrary, as profound imago of the complex contemporary unconscious.

Furthermore, in the interviews, another type of young people that seem not to be really compromised by new technologic recording tools and not to manifest a real engagement with these growing recording opportunities, was found.

The reasons are several, as mentioned by some witnesses. A. (male, 22 y.o.) for example, claims even a “philosophical” hostility towards every act aimed at “freezing the present” in memory.

If I must live something I will live it on my own! I don't want to stop and take a picture, to leave the moment in order to take a photo. Or I start with the idea of having to take that picture (and therefore I take it) or else I live the experience, I remember what I can and the rest is of no real interest for me.

A strong “sense of the present” seems to be promoted as a guarantee of the genuine nature of life, combined with the trust in the human ability to naturally select what must be remembered, and with the idea that the recording gesture is already a strong act of manipulation not only of the future (what we will remembered depends on what we will have recorded) but also of the present (the act of recording deeply modifies social and cultural settings of the live event).

The term “to leave the moment in order to take a photo” strongly suggests this meta-reflexivity and cultural level of interpretation on the recording practice and it highlights the attitude to be conscious and active protagonist of this choice.

Moreover, in other interviews a rather new “ecology of memory” is performed: a real time

“editing of the life”, according to narrative, imaginaries, cultural expectations and habitus, a live event managing capability is expressed throughout the rigorous division of the event in different time dimensions (past, present and future) and different media registrations.

Sometimes, a rather codified language and aesthetics of the “memorable moments” seems to emerge from the words of the young people interviewed: some subjects created specific associations between the spontaneous degree of the moment itself and the medium considered most suitable to record it.

M. (male, 20 y.o) for example, reports that:

for family memories the most suitable recording tool is the camera, instead, with friends, the best is the mobile phone – for videos and photos- that are more a “flash”.

If you have the camera you have already planned that a photo must be taken, mobile videos and photos are instead more of a “sketch” that happens spontaneously, things that are harder to remember and that you willingly immortalize with the mobile, even if badly, in order to reconstruct perhaps something that was created.

As in Bordieu’s interpretation [7], photography is in this case entirely inscribed in socio-cultural rules and different tools and technologies are explicitly associated with different future uses: in one case the frame of “solemnization of familiar moments”, in the other one, quite the creation of real-time events which have sense while (and because) they are registered.

Also in this case, different technological tools are differently performed and gain sense as cultural interfaces when they are embedded in specific contexts and social frames.

If in Bordieu’s period photography was normatively associated with familiar contexts and only few eccentric users (as photo amateurs) could use it outside such standardized contexts, at present, in the digital era, the range of filmable and photographable things is strongly enlarged, and the distinction of social uses of photography is then semiotically marked by the different tool (camera phone, or videocamera) used to record the event.

3. From nostalgia to the screen saver: accesses to memory in the digital age

With the emerging of digital technologies, not only interesting changes are affecting the remembrance practices and habits, but several different approaches can also be found in relation to the processes of accessing, retrieving and reusing memories objects.

Digital contents, both those deliberately created as future memory artefacts, and the ones we inadvertently leave in our “digital life”, are increasingly occupying symbolic spaces in our life, standing out to be used as memory documents and fragments of our identity.

Contrary to other fragments of the past - as letters, diaries, hard printed, photos as well as souvenirs or old toys- those digital mementos have different chances and channels to be rediscovered and used in daily life: disembodied from physical spaces, digital artefacts became at the same time easier and more structured triggers of recall.

Indeed, people, and in particular young generations are constantly involved in digital activities and pass many hours of their life in front of a digital screen: the screen is thus becoming a tool for living and being connected to the present, but also a “shoebox” which

connect them with their own past, through past photos, documents, mails, and all the other features of digital tracks.

On the other hand, digital contents in the hard-disk have no possibility to emerge from a “serendipity access”, as the casual discovering of a photo in a book, of an object in a box or under the bed: each approach to memory, in the digital field, is due to a proactive act, a voluntary gesture to search something on a folder, browse, select and finally open a file.

The magic “insight” which casually occurs with a taste, a smell, a contact with an old photo or an object, as the Proust’s Madeleine, seems now deeply reconfigured by new practices of saving, accessing, retrieving contents in the daily life.

One specific question of our empirical research was if, in this scenario, digital mementos were really substituting physical ones in configuring youngster’s memory heritage and if virtual spaces were emerging as dominant interfaces used for being in touch with the own past.

We noticed some first, interesting, differences among the interviewed youngsters in this regard.

In fact, in our sample, the individuals that have not a massive relation with media and internet consumption, consider digital interfaces as inadequate to approach a complex and deep access with their memory.

They express a sense of the past more as “nostalgia” and the need to take account of memory in order to underline the more private self dimension of one’s own life.

In this sense, the farther are memories in time and space, the more important they appear to the owners.

In their opinion, the space of memory must preserve its “aura”, that is, first of all, determined by the two dimensions of “embodiment” in specific objects, and of “distance” from ordinary spaces: two dimensions very far from digital interfaces characteristics²⁷⁴.

For example, in such manner D. (female, 21 y.o.), - belonging to the hypo-media and network profile- describes her access to memories:

I prefer to keep photos rather than to look at them. I don’t know why. I usually keep them saved in a special place. Perhaps because I prefer to get them and to watch them all together, instead of seeing them everyday and considering them quite a habit.

On the opposite side, A. (male, 26 y.o.) with a high media and technology consumption profile, feels perfectly at home in accessing his memories through the digital interfaces of his PC.

The possibility to retrieve memories in an “always on” interface does not disturb the poetry of remembrance and it can be comfortably associated to the nostalgia feeling.

Now with digital... My pc is always on...sometimes nostalgia arrives...you open the photos and look at them...(...)

274 Kilker [26] also considered the “entropy of the artifact” (one that reveals its interactions with time) as an important semiotic mark of time and nostalgia trigger, comparing entropic cues in photochemical and digital images and discussing their effects on media fruition and on the time perception of the contents. In photochemical media, damage provides intuitively-understood cues about the passage of time, value of the artifact, and its handling. As digital media are adopted, decisions about content encoding, how damage is visually represented, and what contextual metadata is stored influence the inevitable process of damage in digital images.

Comparing digital and analogical photos, I prefer the digital ones... perhaps because the PC is a very close tool for me... it is always on...it is always with me...I watch TV with my PC, I do everything with it, and perhaps it is closer than the living room, where I should find the right album, look for the photos...the pc is easier and it is also more immediate.

Also in this case, not a common attitude in the retrieving practices can be depicted, as different profiles with socio-cultural background perform different approaches with the past, passing from the need of a functional and always-on access the to willingness of a poetic and not ordinary contact with their memories.

4. Memory no-places: passages through the digital interfaces

The final issue of this contribute regards the new remembrance strategies and their changing related to the emergence of digital interfaces for archiving, browsing, visualizing contents.

As observed in the previous paragraphs, nor the abundance of digital tools for recording neither the always-on interfaces for accessing memories can be considered unique factors of change in the contemporary approach to memory, as media are both a material and a social construct, and the daily practices are processes which are strongly embedded in individual identities, socio-cultural contexts, as well as the cultural capital and psychological mood of each biography and identity.

Despite this, more incisive features and homogeneous changes have been noticed, in our interviews, regarding the memory practices of fruition and experience.

As noticed by Van Dijk [27], in fact, multimedia production on DVD no longer privilege the chronologically ordered visual narrative prescribing a viewer's reading but promote browsing through a library of connected files and (sub)texts.

As also this young person interviewed (F. 22 years, female) witnesses:

Often I don't know what I'm searching for...but I start automatically browsing and I always find something interesting...but, otherwise, when I'm really searching something precise I never find it...in particular, my photos, I let them in many and many different folders and, literally, as in Chinese boxes I don't know where they are and when I will arrive.

From the interviews, the information architecture in the digital space continues to be perceived as really different from human minds and their functioning.

As Vannevar Bush [8] observed, human beings need more analogical, flexible and personal ways for accessing their memories²⁷⁵.

Despite this, the top-down and hierarchical organisation in folders and subfolders continues to be the standard not only in the File Manager system but also in the photos and multimedia browsing programmes.

²⁷⁵ After the pioneering experiences of Bush, several others experimentations followed in order to allow a more natural interaction and retrieval of knowledge through technologies. As for example the *Shoebox* project implemented in AT& T Laboratories, or the *MyLifeBits*, developed at MS Media Presence, San Francisco, or also the *Living Memory Box* from Georgia Institute of Technology. For an accurate reviewing of such projects see van Dijk [27].

Recently, applications related to the web 2.0 universe, as social tagging, ranking, social bookmarking tools, allow users to enrich contents and records through analogical connections -the tags- that introduce a transversal mode to connect items.

Tags, in fact, differently both from links both from folder organisation, create a “multidimensional” structure of content and they allow to browse contents overcoming the one-to-one connection structure (as in a web link) and creating a “many to many architecture” (a word can be associated with many tags and a tag can be associated with many words)²⁷⁶.

As this structure seems to favour a more rich and complex experience of approaching digital meanings, on the other hand it seems often to create confusion and disorientation and not to favour the symbolic re-elaboration and re-ordering of digital inputs.

I suggest to use the *no-place* metaphor, coined by Augé [3], in order to define those virtual spatial configurations that, similarly to the contemporary marketplaces, provide the accumulation of contents and inputs in a chaotic and entropic configuration, creating “clouds” of meanings, trends, preferences but without favouring the construction of personal, intimate paths.

Alternatively, in the last years, new emergent metaphors and content organisation tools have been experimented in order to allow users to better fit their personal experience and existential interpretation with digital interface for recording and retrieving that.

We can consider, for example, the *Itme* Project²⁷⁷, carried out by a group of interaction designers at Bicocca University of Milan, which aims to provide a new modality to organize and access contents through the metaphors of Story and Venue in spite of that of desktop, windows, folders one.

In this prototype, contents, digital memories as well as feed and messages coming from social sites are organized in stories, and collected in venues: the narrative pattern allow users to ordinate contents giving them a diachronic development and also, often, organizing them according to the value structures and semiotic mechanisms typical of narrative scheme: for example, using the universal progression of “equilibrium-change/obstacle-new equilibrium” in order to create a meaning path in a photo album, or using the idea of the “hero who comes towards a desire object”, in order to metaphorically describe and organize the documents collected in the development and writing of a graduate thesis.

In the web 2.0 field, projects such as *Storify*²⁷⁸ allow users to aggregate feeds from different social sites (blogs, Facebook, Twitter, and so on), to organize them in a story and giving them, in this manner, a new, metacognitive, interpretation level.

Storytelling seems to be a great paradigm in order to recreate, in the anonymous and a-centric digital world, not only clouds, but constellations of meanings and values, directions for giving and often inventing a sense in the digital browsing practices, and finally, to provide strongly recognizable memory patterns.

276 In his hypertextual theory Ted Nelson had already strongly opposed to the vision of links promoted by Tim Berners Lee world wide web, highlighting in particular the mono-dimensional structure of actual web link. As he assesses in his webpage: ‘(the Lee’s vision of links), only one-way links, invisible and not allowed to overlap is entirely different from mine (visible, unbreaking n-way links by any parties, all content legally reviewable by anyone into new documents with paths back to the originals, and transclusions as well as links)’. <http://hyperland.com/TBLpage>. Viewed 10 April 2011.

277 www.itsme.it. Viewed 10 April 2011.

278 <http://storify.com>. Viewed 10 April 2011.

As in the past, through stories and narrative archetypes knowledge, technical notions as well as value systems and rules were disseminated, nowadays, in the globalization and information overload era, new digital interfaces and metaphors that remediate [6] the ancient storytelling start to be experimented in order to provide a new order, sense and also value to the digital experience and to re-connect it to human memory.

Finally, we can consider these emergent digital metaphors as interesting evidences of the growing intertwining and mutual shaping of technology, culture and anthropology in the digital interfaces and of the need to think to media processes, in a McLuhan perspective, beyond the classic disciplinary distinctions.

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Finnegans Wake's Intergalaxy

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1. The Answers Are Always Inside the Problem: an Introduction

Whenever one links the contributions of Marshall McLuhan (1911-1980) to James Joyce's (1882 – 1941) *Finnegans Wake*, we follow only the guidelines prescribed by the Canadian thinker. McLuhan not rarely devoted estimation to the *Work in Progress* by the Irish writer (McLuhan, 1964, 1971, 2005 Theall, 1989, McLuhan²⁷⁹, 2007). Better yet, more than showing estimation he strongly advised the reading of Joyce: *nobody could pretend serious interest in my work who is not completely familiar with all of the works of James Joyce and the French symbolists* (Theall, 1989:46). Eric McLuhan (2007: xiii), also stimulated by the auto-extensive, spherical and with no acme landscape of *riverrun* (Beckett in Nestrovski 1992:323, 337), is the author of *The Role of Thunder in Finnegans Wake*. He closes the preface with a decisive note. *A final note about Joyce and McLuhan: my father used Joyce as a colleague. Whenever he made a discovery about technology and culture, he would open the Wake and read for a bit, and there, sure enough, he would find that Joyce had already been over the ground, decades earlier.*

The Hungarian Arthur Koestler (apud Watzlawick, 1995:8) called *bi-associations* the *practical or "just mental" relations between two facts, that have never been established before, which are, however, separately well known*. He stressed that: the better the individual terms are known, the better the results of such relations. In consonance with Koestler's ideas, for finding them appropriate, our first task will be to elucidate the nature of the elements involved in the equation. Hence, beforehand, one runs into a fundamental problem. If the notion of *inter-galaxy* originated from the reading we did of Joyce, in the way of McLuhan, how to isolate the components of the bi-association without corrupting their meaning? The opening sentence of this section was written by McLuhan (2011) and, opportunely, will serve as a dual purpose. *Number one*: to justify an autopoietic method, stemming from the same event that defines it. Joyce's inter-galaxy is thus regarded as an episodic artifact, like a roll of dice. The monumental *Finnegans Wake*, written over sixteen years, is a kind of *trompe-l'oeil*: the flat surface that can not be seen at a quick glance, distracted by the virtuosity of its optics and its geometry. Derrida says (in Nestrovski 1992:19): (...) *I'm not sure if I like Joyce. More precisely, I'm not sure if anyone does. A palimpsestic nuisance* (Philippe Lejeune apud Genette, 2006:46). *Take care, however, to not erase any of the overlapped writings* (Schüler apud Joyce, 2004:24): *Ages of the Italian philosopher Giambattista Vico, Noah, Newton, Isolde, Wall Street and strange syntac-*

²⁷⁹ Besides Mead, Ted Carpenter, Edward Sapir, Gregory Bateson, Benjamin Lee Whorf, among others. Those readings would have revealed in McLuhan, 'the ability to appropriate a wide spectrum of diverse materials "stolen" from various individuals and juxtaposed in such a way as to magnify the differences which frequently go unobserved by others' (Theall, 2001:44).

tic experiences. The fall is a noise that shuffles the alphabet: *the fall (bababadalgharaghtakam-minarronmkonnbronntonneronntuomthunntrovarrhounawnskawntoohohoordenenthurnuk!) of a once wallstrait oldparr is retaled early in bed and later on life down through all Christian minstrelsy* (Joyce, 2004:3). All the familiar letters strung together in a curious way. For us, the alphabetic writing of James Joyce operates simultaneous codes: the fall, for example, is alphabetical (logic coordination of signals) and *particularly* onomatopoeic. Not any noise (BAM!, POW!), but the *rumble* (that) *reverberates in the alphabet, in the Babel of languages. The rumble causes rumbling, vibrates in the noises, even in the very faint* (Schüler, *ibid*: 89). The reader of *Finnegans Wake* experiences the language through the *shifting borders* between one code and another (Santaella, 2007:73): the impression in type and the orality of things. *I see a voice*, said Pyramus to Thisbe (cited in Sacks, 2010:13).

Finally, purpose *number two*: to reflect about *the significance of the questions we ask*. We borrowed the quote in italics from the introductory chapter of *Male and Female: a study of the sexes in a changing world* (1950). The author is Margaret Mead (1901-1978), an American anthropologist born in Philadelphia, acknowledged for her extensive contribution to the studies of primitive societies. Mead belongs to a kind of 'subpart of social science'. She's part of a committee with - and against - which McLuhan struck up the debate. To the four questions listed at the top of the paragraph, Mead (*ibid*: 28) replies: *these are questions which are being asked in a hundred different ways in contemporary America*. Being in possession of the answer, we, the authors, ask: what reason is there to revive McLuhan's interest in Joyce? Specially, we insist, once McLuhan, according to Theall (1989:52), seemed *more comfortable when speaking about Ezra Pound (who never recognized any value in Finnegans Wake)*? Thinking about McLuhan and Joyce, like that, as terms of a single equation is at the same time choosing a problem: *the story of modern America*. And about the Joyce vs. Pound dispute, we anticipate: *the story of modern America begins with the discovery of the white man by the Indians* (McLuhan, 2001). We, the white men, (un)covered, expelled from the orthographic, phonetic and syllabic nuclei; surrounded by suitcase-words, whose parodical insistence highlights the *linguistic deviation*, the *infantilism* and *idiocy* (Attridge *apud* Nestrovski, 1992:349). In his youth, Joyce developed two theoretical keys, according to a note by Donald Theall (1989:8): *epiphany* and *vivisection* concepts. *This vivisection concept implies that the poet-artist explores communicative activity, for the community in action manifests itself in communicating. The epiphany, a moment of intense clarity, renders forth the specific nature of a material, verbal, or imaginary artifact, whether it is an object, an event or a turn of phrase*. Joyce brought to the interior of *Finnegans* elements whose understanding is less conditional (when A something should be discovered) than diagrammatic: the form of a relationship, of reflective nature, reading in act. In McLuhan's (1962:267) words: *he (Joyce) breaks open the closed system of classical rhetoric at the same time that he cuts into the closed system of newspaper somnambulism. Symbolism is a kind of witty jazz (...)*. Attentive to the musical score of *Finnegans Wake*, to the exercise of the written and, simultaneously, oral words, guided by Marshall McLuhan, we have caught a glimpse of an unprecedented narrative experience: an intergalactic adventure.

2. Voices from Silent Hands²⁸⁰ and the problem of representation

2.1 The Conquest of White

In March 1990, Frenchman Jean-Francois Lyotard received an invitation from the English magazine *Blank Page*. Hence, the French philosopher and esthetician should write an article about an artist of his choice. Lyotard has devoted a *commentary-poem* to the American painter Sam Francis (1923-1994). It is curious that Francis, in the later years of the 50's, took to himself something he called the *conquest of white*, as a place for reflection. How to give room for the *white*, the *silence*, the *infinite* and the *ineffable* in the pictorial space (Parret, 2010)? Lyotard has noted that, in the way of Beckett, Francis was not concerned *about white*, but *about the concept of white*. *What we call color*, Lyotard continues in his notes, (is) *arbitrary cutting of the spectre by names. White: all colors, but through subtractive synthesis. Hence, the unnamed. One sees only what one names. One does not see white. In front of the white, chromatic blindness. Paint that I have never seen* (ibid. :2-3). White as an *auditory, spatial and aesthetic practice*: significant emptiness, or in the way of McLuhan (1964:84), *an inclusive gestalt*. Francis's project contains the thesis around which *The Gutenberg Galaxy* orbits: *to trace the ways in which the forms of experience and of mental outlook and expression have been modified, first by the phonetic alphabet and then by printing* (McLuhan, 1971:1). Francis and McLuhan share a similar methodological approach, which we shall call the *capture of the fugacious*. In the works *The Whiteness of the Whale* and *Meaningless Gesture*, Francis questions: *what do you see when you see nothing?* McLuhan *sees* the way of thinking corresponding to the passage from the spoken language (*soars, groans, swings, sings, solos, intones and scampers*, McLuhan, 1964:77) to the phonetic alphabet (which *diminishes the role of the other senses of sound and touch and taste in any literature*, ibid: 84).

2.2 Apples and Rimbaud

The nineteenth-century French Symbolists, especially Rimbaud, Mallarmé, Baudelaire and Lafourge (Theall, 2001:27) were the *poetic subpart* and are often mentioned throughout the works signed by McLuhan (1964, 1971.1992, 2005). Rimbaud's *Voyelles* (*apud* Grünwald, 1991:154), for example, have reached a chromatic identity: *A noir, E blanc, I rouge, U vert, O bleu: voyelles*. The five arbitrary signs, fugitive from the law which commands phonetic matching, are pigmented substances and electromagnetic beams, then. In 1871, at 17, the young Frenchman would have surpassed the typographic culture man and lodged his literature somewhere in the *global village*. If this case is accepted, we are going to say that Jean-Nicolas Arthur Rimbaud, born in Charleville, in 1854, was the first - among the names capitulated by Marshall McLuhan - to create, *avant la lettre*, the *inter-galaxy*.

Back in 1791, the theologian and philosopher Karl von Eckartshausen (*apud* Eiseinstein, 1990:59) developed the *ocular music*, created in 1763 by Perè Castel: *for a long time I've been trying to determine the harmony of all sensory impressions, to make them evident and noticeable (...). I built this machine with total perfection, so that all chords of all colors can be played, exactly like*

280 Name of the English television show, quoted by Oliver Sacks in a note (2010:137).

tonal chords. This is the description of the instrument. Then, von Eckartshausen describes a structure formed by glass cylinders filled with colored liquids attached to a harpsichord. The keys, every note, correspond to a color. Metal plates go up and down, controlled by fingers, showing pigments illuminated by wax candles: *the beauty of the colors is indescribable*, evaluates Castel, *surpassing the most splendid jewels. One cannot express the visual sensation that is activated by the various chords of color (...)*. This experiment creates conventional symbolic correspondence between samples of dyed water and musical notes. Two different languages, the visual and the sound forms, are re-arranged. The codes are *shifted*, and finally settled in other positions of sense. Rimbaud's letter *A* is rather an arbitrary sign and one that functions under a specific law or habit (Peirce, 2005). The letter *A*, for the phonetic writing of Latin origin, is the first of an alphabet consisting of 26 characters. For Portuguese language speakers, it is, moreover, a feminine article, a demonstrative and a preposition. To Physics, it is the symbol of the acceleration; while, for mathematics, it represents known variables, like the Pythagoras' theorem states, for example. Since it belongs to a particular linguistic system, the letter *A* depends on some associative regularity. *A* corresponds to the female gender, a certain demonstrative, a preposition, a quantity. *The linguistic conventions operate only because individuals of an entire community internalize interpretation habits* (Santaella, 2005:266).

According to Brazil's most popular dictionary (Ferreira, 2004:575), *preto* is an adjective. It means: 1. *ebony, charcoal, negro*. 2. *It is said of things that have a dark color*. 3. *Dirty, grimy*. 4. *Black (individual)*. 5. (In) *Brazil. Difficult, dangerous*. 6. *Black individual*. The black color, according to number 1. is synonymous with *negro*. So, *negro*: 1. *Black*. 2. *It is said of the individual who has very pigmented, dark skin*. 3. *Fig (i.e. figuratively) Dark, gloomy* (ibid.: 498). *Preto* or *negro*, are, in principle, a *materialized quality, as these are referentially empty and, therefore, fully open* (Santaella, ibid: 214). *In principle, when we don't see in a dictionary: 1. just black. 2. black entirety. 3. quality of pure black. 4. wavelength of X A. But, ebony, coal, dirty*. So we learn that there are corresponding chromatic states even to colors: *any visual statement, even when reduced to its basic elements, tends to organize a structure according to laws that are manifested in the relations of repetition, variation, contrast and integration* (ibid.: 220-221). The letter *A* of Rimbaud is *noir*, black. The *A* is *ebony, coal*.

Eisenstein (1990:14) transcribes part of the fable *The Inconsolable Widow*, by the American author Ambrose Bierce. The excerpt show the operations that we are referring to: *a mourning woman weeping over a grave. "Calm yourself madam," said a Compassionate Stranger. "Divine mercy is infinite. Somewhere there's another man, besides your husband, with whom you can still be happy." "There was," she sobbed - "there was, but this is his grave."* A fundamental fact: the Stranger juxtaposed a group of signs (woman, mourning, crying, tomb) and inferred that a widow was mourning the death of her husband. The Stranger built, from the isolated elements, a conventional semiotic string, when in fact, the terms offer so many possibilities for interpretation as we can create. Suppose there's a man, dressed as a woman, crying for the burial of her pet dog, buried before she could retrieve the diamond ring that the animal had swallowed. In Rimbaud's chromatic alphabet, the letter *A* is, by *compositional juxtaposing*, a representative grapheme: *A = noir. Visual forms become symbols when the meaning of its elements can only be interpreted with the help of the cultural conventions code* (Santaella, ibid: 246). Rimbaud continues (ibid.): *A, black velvety jacket of brilliant flies / Which buzz around cruel smells, / Gulfs of shadow.*

2.3 In the beginning was the Word. And the Word became flesh and dwelt among us

The subtitle of the book *The Gutenberg Galaxy* interests us greatly: *the making of typographic man*. McLuhan's perspective saw the invention of typography as a decisive change: man began to deal with the world as if the surroundings were a written text, with words organized in rows. Joseph Church (*apud* Sacks, 2010:45): *learning the language transforms the individual so that he is capable of doing new things for himself, or old things in new ways. (...) We can manipulate symbols in ways that would be impossible with the things they represent and thus get to creative and unusual versions of reality'* McLuhan (1971: 127) notices another perspective: the era inaugurated by movable type set in motion *a consistent series of static shots or "fixed points of view" in homogeneous relationship. Homogenization of men and materials will become the great program of the Gutenberg era, the source of wealth and power unknown to any other time or technology.* Let us analyze the main ideas involved in the text. Human experience is characterized by a *consensus of the senses: objects are simultaneously heard, seen, felt, smelt, the sound, the sight, the smell and the sensation happen together* (Sacks, 2010:137). A passage of *The Enigma of Kaspar Hauser*, a Werner Herzog's masterpiece (1974), occurred to us. In that part there are three characters in a garden. Kaspar's guardian, accompanied by the Reverend, drops an apple and makes mention of picking it up from the ground. Kaspar intercedes: *"Let the apples rest. They are tired and they want sleep."* The guardian replies, *"Kaspar, an apple does not get tired, it has no life of its own. It just does what we want it to. Look, I'll throw it. And it will stay wherever it falls. That is our will."* The apple slips through a thick bunch of plants. Kaspar explains: *"The apple did not stop. It hid in the bush."* The truth of the apple, to Kaspar, is the truth of the soul and, at the same time, the non-truth of the Impersonal: the apple is a fruit, therefore, inanimate. The truth of Kaspar's apple is not *our will*, but the truth inscribed in its regard as a subject.²⁸¹

So, to whom the cold typographic man is opposed? To its historical predecessor, the hot hyper-aesthesian being, the man of oral culture: *in speech we tend to react to each situation that occurs, reacting in tone and gesture even to our own act of speaking. But writing tends to be a kind of separate or specialist action in which there is little opportunity or call for reaction* (McLuhan, 1964:79). Kaspar Hauser inferred that the apple had a will of its own when he used the *ad hoc* dialogue, primary orality (Santaella, 2007). His personal discovery has emerged from the particular game made possible by the discovery of language, the power to *go from the realm of objects and images to the world of concepts and names* (Sacks, *ibid*: 49). Three people (Kaspar, his guardian and the Reverend) together in a given space. The speech implies, right away, the selection of properties deemed relevant. Thus, the fall of the apple would have gone unnoticed if the phenomenal observation of gravity had not been considered an emergency by Kasper.

Michel Foucault's fundamental gesture (1994), in the preface to *The Birth of the Clinic*, is an

281 Lacan, assimilated by Žižek (2008:32), said: *the subject's gaze is always already inscribed into the perceived object itself, disguised in its 'blind spot', which is in the object more than in the object itself, and from this point the object itself returns the gaze.* While Hegel (*Ibid.*) would have anticipated, again in the words of Žižek: *subject and object are inherently "mediated," so that an "epistemological" shift in the subject's point of view always reflects an ontological" shift in the object itself.* And Peirce (2005:179), previously and finally, would have noticed that *nothing is more dispensable to a solid epistemology than a clear distinction between the Object and the Interpretant of knowledge, just as nothing is more essential for solid notions of geography than a crystal clear distinction between north latitude and south latitude, and one of these distinctions isn't more crude than the other.*

exercise of predication: *this book is about space, language and death. It's about the look.* Putting it another way: the terms *space, language and death* represent all the existential possibilities of a particular phenomenon. The recording of the *ways of looking*, the so-called *discourse*, circumscribes the research plan proposed by Foucault and defines the universes of those three variables. Therefore, *death*, for example, is the beginning and end at the same time; *finnicus* as the Campos brothers wanted for the Portuguese version of the monumental Joycean²⁸². To the Romans from the empire, learned or ignorant, death was followed by an absolute nothing and nothing else, such as a shadow or a soul, would come to relieve the corpse (Veyne, 1989:211). The holy books of Christianity, in turn, teach that Lazarus, presumed dead, buried for four days, walked out of the cave-tomb as soon as Jesus asked the Father for resurrection. We say the word *death* is centripetal, even though it is, in any case, the antithesis of the word *life*. The material of its axis is a huge *portmanteau* suitcase, in the way of Lewis Carroll. *Death* is a parallactical concept, as the religious example has demonstrated so quickly. End and beginning once again. Thus, the example of Joyce and his circular narrative, occupied with suspending the hieratic sense of codes determined by the linguistic system. There is the written word, the sequence of logical propositions, the code. And there is a curious semantic and syntactic transparency, *to make evident*. Each paragraph going from the letter to the gesture, from the fall to the grammar, from the gear to the epiphany. *Language does for intelligence what the wheel does for the feet and body*, illustrates McLuhan (ibid.). Spoken language is, itself, a large sensorial branch. An acoustical sign (tone, volume, rhythm), tactile, rhetoric, prosodic, theatrical, olfactory, cultural: *image schemata, mimema*.²⁸³

The South African poet and novelist David Wright is the author of *Deafness*, autobiographical essay about deafness. The psychiatrist and neurologist Oliver Sacks (1933 -) took up in 1969, to the reading of Wright's work and noted that there are curious links between language and thought. In his early childhood, being gifted with considerable vocabulary, David lost his hearing. In one passage, he considers his post-language deafness *extraordinary lucky: at seven years of age, a child would probably already understand the principles of language, as I understood. Having learned to talk naturally was another advantage - pronunciation, syntax, inflection, idioms, it was all acquired by ear (apud Sacks, 2010:17)*. Wright has developed, from memory, the ability to translate movements into sounds. Ghostly voices stuck to the speaker's labial articulation, the blowing and whistling of the wind were unintentionally lent to shaking trees and branches.

David tells (*apud Sacks, ibid: 21*) an episode in which that semiotic *redundancy of image*

282 Donaldo Schüler introduces (*apud Joyce, 2004:15*): in *Finnegans Wake* we hear sounds of the language which has united the West, the Latin of the Roman Empire: *f'inis* '(end) in apposition to 'again' to announce the Viconian circularity.

283 Scene 1, act III of *The Miser*, by Molière. We'll reproduce the analysis of Patrice Pavis (2003:73). Although the passage is long, its representative ability will be of great value to us.

Harpagon mimes the scene, reducing it to a performance of the eater, repeating the terms of the menu through sonic and facial onomatopoeia. With his cheeks blown out, the repetition of the "p" in "pate en pot" [in the French original] as a filing consonant constitutes a mimic facial drama – as well as a psychodrama for Harpagon, who imagines the force-feeding of his guests by replaying it in his own body. So this sequence illustrates Marcel Jousse's hypothesis that onomatopoeia and gestuality are the primary means of communicating experience before the appearance of verbal language. Jousse suggests that what we call the mimeme, the "reverberation of the characteristic or transitory gesture of the object in the human complex," enables human beings to construct their earliest expressions, their miming, even before language.

schemata seems to converge to McLuhan's prerogatives. Concerned about the possibility of regression of acquired language, little David's parents sent him to a special school in England. The author describes his encounter with Vanessa, his first mate whose deafness was of pre-linguistic nature. Even only at eight years old, David noticed that Vanessa's general knowledge was quite limited. During a class, Miss Neville asked the girl, *who is the king of England?* Vanessa did not know. *Uneasy, she glanced sideways at the geography book, open on the chapter of Britain. Looking bright red she replied, 'UK'.* Reprimanded by the teacher and having David announce the name of King George V, Vanessa replied, *it's not fair! This was not in the book!* (*apud* *ibid*: 22).

Until the middle of the eighteenth century, those who were born deaf were known as *deaf and dumb*, considered stupid, unable to take any responsibilities, condemned to silence and rudimentary gestures. Even in 1927, the year that David Wright joined the Northampton School, children were explicitly banned from using British Sign Language and, above all, a kind of marginal sign language, created by the students themselves: *the confusion stuns the eyes, arms turn like windmills in a hurricane (...) the emphatic silent vocabulary of the body - look, expression, posture, eye glance, the hands represent their pantomime. An absolutely overpowering pandemonium. (...) The agitation of hands and arms boils down to a convention, a code (...). In fact, it is a kind of vernacular* (*apud* Sacks, *ibid*: 23). Santos and Salazar (2010) saw *moving ideograms* in sign language. A mismatch between one name *only* and a class of objects represents the refusal of a universe populated by general groupings. Although, obviously, it is the language that organizes the environment and enables thought. Such an organization assumes that a number of specific things will be gathered under different signs, concepts that make it knowable that allows the storage and exchange of ideas between the subject and his linguistic community. When a deaf person says *chair'*, she says a specific *chair*. And the specific character of the image is in equal measure, determined by the expressions of the body, scattered in space. Sign language is itself inter-galactic, as we understand the term. Its study under the guidance of McLuhan's assumptions will be further developed in another paper. It is important to us, above all, to emphasize the following: having noticed the emergence of a transnational world, Joyce invented an aesthetic dialect. It is not, therefore, the refusal of writing or permanence of the types provided by the invention of printing. But the rediscovery of a medium, extensive to human thought, which can preserve the nuances of subjective ways of perception.

3. riverrun

Samuel Beckett, Julia Kristeva, Umberto Eco, Sergei Eisenstein, the Campos brothers and Jacques Derrida, to name a few, were troubled by the work of James Joyce. It's not possible to reflect on twentieth-century literature without going through the pages of *Ulysses* and of *Finnegans Wake* again and again. Joyce, Derrida says (in: Netrovski 1992:20) *inscribes us in the book we read. We can only forgive it, this act of Babel war, if it always creates itself, at all times, at each writing event, thus halting each one's responsibility.* The reading that McLuhan did of the Irish author may be called *cannibalistic*. Joyce appears in so many ways in lines of McLuhan that it is as if one could watch the conversation between old friends. Besides the camaraderie, there is a parallactical relationship between the thoughts of both of them. Donald Theall noted first and surgically (*ibid.*): *Joyce stressed the tension between oral and written, between writ-*

ing and print, but he did it in his own practice of writing as well as writing about it. The oral and the written became both medium and message, so that quite literally in the Wake the medium is the message. With Joyce, Gutenberg's man watches on television, his own fall. James Joyce's intergalaxy has an undefined temperature: it is hot and cold. His experience is one of the written, printed words. His experience is the one of the dialogue, of the gestures enacted, of the puns, the onomatopoeia, parody and of the many narrative cores. McLuhan's ends his *The Gutenberg Galaxy* with Joyce's prognosis: *my consumers are they not my producers?*

Both for one, and for another, there is no gap between consumption and production. The medium is as the message indicates the *con-substance* between production technologies and language. Our prosthesis, from parchment to wearable computers, change the way we perceive the world. Reading Joyce is fighting a moving syntax, which contradicts the commands of syntactic and semantic agreements. Is fighting the substance of thought itself. Finnegans Wake, a kind of anticipation of *the man from the new electric Galaxy* (McLuhan, 1962), when *the medium shapes and controls the scale and form of human association* (McLuhan, U. MEDIA: 9). Saying it like Beckett (cited Tagliaferri, in Nestro: 67): *Joyce's writing is not about something: it is the thing itself*. The insistence of Joyce and McLuhan is declared. Topics such as folksonomy, for example, seem born from the exact intersection between these authors.

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Acoustic space, Territories and Borderlines: Art as Locative Media That Saves Lives

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1. Introduction

One of the most innovative and coherent approaches recently proposed in the study of the work of McLuhan has to do with the concept of space. This concept appears in McLuhan's thinking from the very beginning of his work and evolves as his research widens its scope in topics and complexity, surpassing the natural limits of literature, on one hand, and communication theory, on the other. The concept establishes a bridge between the theory of the visual space, which characterizes the first stage of his research, and the theory of the aural space (*audio-tactile*) of the last stage. It represents one of the least analyzed contributions, yet it stands among the most enlightening within the work of the Canadian scholar.

Our starting point is the hypothesis that space is the only and most consistent conceptual category in the work of McLuhan, and that space is the notion that binds together the multiplicity of elements proposed in his thinking. McLuhan's initial interest about the effect of the alphabet as a technology that transformed the concept of space was complemented by the finding of the notion of the acoustic space and by the concepts of tendencies or spatial and temporary biases proposed by Innis, which reveals the Canadian's considerable interest in spatial problems shown all along his intellectual career. Regarding the nature of acoustic space in particular, it is essential to understand that we are dealing with a hybrid concept, resulting from the oral and literary or alphabetic modes, and that the notion is more material than abstract. The materialist tradition results from Innis's influence. However, we shall see a split between the two, stemming from the nature of the relation between space and time. Nevertheless, tackling McLuhan's work and considering him as a 'theorist of space', as Cavell (2003, 4) does, can be considered innovative, inventive, but above all, creative. McLuhan discovered Siegfried Giedion's ideas about architecture: the open and closed space. Since then, he assumed that the visual space was only one of the multiple forms of the space (Cavell), such as the sensorial experience of a blind person in open spaces. Based on the former example, McLuhan would later develop the notion of the acoustic space. He had found the way of incorporating time in a relational way, within the spatial configuration through the dynamics of acoustics. If space is considered as the 'world created by sound', then we shall have to be aware that its characteristics will be totally different from those of the visual space. It won't have fixed limits or center, and an inhibited sense of orientation, besides being more directly connected to the central nervous system than any other visual element: the image is not as forceful as the direct spatial sensation.

In a second stage of this work we will discuss about the way in which an artistic project

developed in the open space - territory and map - helps spatial orientation in dramatic contexts of survival. We will elaborate on the effects of locative technologies in the conception of new cultural grounds in the context of the Mexico-US border. We refer specifically to the *Transborder Immigrant Tool* developed by professor and artist Ricardo Domínguez. Professor Domínguez and his team at the University of California, San Diego, are concerned with orientation in space. Inspired by the *Virtual Hiker* project by Brett Stalbaum, which reads the field to create a walk around the topography of the zone in question, Domínguez wonders whether he could adapt this GPS-based tool to help people cross the Mexico-US border. The tool should be universal, in other words, it could be utilized by any type of user. The interface was designed so as to resemble a compass and is more pictorial or iconic than textual. The tool also works as a danger zone or element locator, as it is activated - it vibrates - when the user approaches water wells or roads. Orientation is indeed a problem in the border between the two countries, where authorities carry out a permanent monitoring of the movement and behavior of individuals. The tool for transborder immigrants reveals that knowing one's location within space is of vital importance, and also underlines the relevance of the elaboration of a mental map of one's location and the route to follow. While Domínguez and his team define and defend the project and the tool as a humanitarian device designed to help save lives, it is not surprising that the American extreme right labeled it as a declaration of war. Named as one of the most interesting people in 2009 by the CNN news network, Domínguez is Professor of Visual Arts at the University of California, San Diego. He has not only had to face the threat of legal prosecution, but has also been the victim of threats against his life, as a result of the project. This work has been possible thanks to the international collaboration done in the context of the *Born Digital and Transcultural Issues* research project by Dr. Carolyn Guertin (eCreate Lab, UT Arlington) and Dr. Jesús Octavio Elizondo (Culture and Digital Systems, UAM-C).

State of the question

Jorge Luis Borges' tale, *On the Rigor in Science*, is the story of a fully detailed and life-sized map that "eventually tore and weathered to shreds across the actual territory it covered." Corner - specialist in mapping, says this tale is frequently quoted in essays on science, cartography and mapping. Not only does the tale beautifully capture the cartographic technical imagination, it goes to the heart of a tension between reality and representation, between the territory and the technology used for its scientific representation. This assumption makes another point that Corner in his essay *The Agency of Mapping* states very clearly: "Reality, then, as in concepts such as 'landscape' or 'space', is not something external and 'given' for our apprehension; rather it is constituted, or 'formed', through our participation with things: material objects, images, values, cultural codes, places, cognitive schemata, events or maps." (Corner). This form is mapping and cartography. From Cultural studies we can say that we are in the presence of new relationships between cultures and technologies; the concept of national and the transnational; nations and migrations. This new context demands a new approach to new phenomena; new tools are needed to think new problems. Often we find the issue of migrations and their relations to culture within political, economical, and artistic discussions. As Canclini (2009) puts it "it is difficult to explain what it is happening with migrations or with nations, without considering cultural processes". Science, technologies, territories, maps, art,

people: We live among the tensions between the territorial conception of nation and other concepts of nation that are not any longer territorial. Where are the new boundaries? Are there any between art and politics? For instance, how do they emerge between augmented realities and law enforcement? These are some of the questions we are interested in.

2. Beyond boundaries: from Visual to Acoustic Space

One of the most innovative and coherent approaches for the study of the works of McLuhan has to do with the study of space. This concept appears in McLuhan's thought from the outset and evolves along with his work as it grows into broader issues and complexity, beyond the natural limits of the scope of the literature on the one hand, and the theory of communication on the other. This concept provides a bridge between the theory of the visual - characteristic of the first period of McLuhan's work - and the auditory space of the last period. It is also one of the least studied concepts and one of the most enriching.

McLuhan and his work have been studied and criticized from many different perspectives, but few have placed emphasis on the importance that the notion of space has had on the totality of his work. What is attractive about the notion of "acoustic space" is that it describes an open space and therefore allows discussing measurement and movement through "space-time" and speed. The notion of acoustic space developed by McLuhan is derived from the description of "auditory space" of the behaviorist psychology of E. A. Bott at the University of Toronto. The idea of Bott on an auditory space which has no Center or margins since we can hear sounds coming from all directions at the same time, attracted McLuhan immediately who was already working with Sigfried Giedion's ideas on the subject. As we will see later, McLuhan will develop the idea of "auditory space" until reaching the notion of "acoustic space", so as to make its abstract nature more dramatic, as suggested by Theall (2002).

McLuhan In Space is the title of the book written by Richard Cavell (2003). Here Cavell sets the hypothesis that space is the only and most consistent conceptual category in McLuhan's work and that space is the notion that interlinks the multiplicity of elements throughout all of his work. We subscribe to this idea and use it as a premise for this work. To begin the search for the origins of this idea we must take a look at the influential book by the writer, artist and cultural critic Wyndham Lewis *Time and Western Man* (1927). Lewis' thinking was a distance from the analytic philosophy of Alfred N. Whitehead, and from Bertand Russell's ethnocentric approach, as well as William James' pragmatism. During his graduate studies, McLuhan became acquainted with the post Einsteinian's ideas about space, time and energy, that were beginning to revolutionize the whole discipline of modern physics. He also became familiar with the work of the historian and Swiss architect Siegfried Giedion, in particular with the concept of "enclosed space" (cited in Elizondo, 2009). The enthusiasm for these studies was gratified with the reading of the work of Harold A. Innis, who put forward the idea of the spatial and temporal trends in the media, thus bringing McLuhan's attention to the field of transport and communication technologies.

Cavell suggests that collaborative work between McLuhan and Edmund Carpenter--who was then studying the sense of space in the Inuit communities--took place. Theall noted the importance of this collaboration to the arts, poetry, geometry and physics: "*Carpenter contributed Aboriginal, especially Inuit, conceptions of an acoustic space; McLuhan worked out its relation*

to the contemporary arts and poetry affected by four-dimensional geometry and the new physics." (Theall, 2002). We believe that McLuhan and Carpenter's collaboration had no precedents in that it put the former in contact with indigenous groups and their way of life--in which acoustic space acquires an essential dimension--and triggered McLuhan's idealized vision of the (oral) tribal life, which became a constant reference in his work.

On the nature of acoustic space, Cavell stresses that it is a hybrid concept between oral and literate--or literary--modes, and that it is a material rather than abstract notion (Cavell, 2002, xiv). This argument differs from the general perception that scholars have about the subject. Cavell's materialist viewpoint is due to the influence of Innis. However, a break between the two emerges because of the differences on the nature of the space-time. Even so, dealing with the works of McLuhan and considering him a "theorist of space" as Cavell does (Cavell, 2003, 4), provides a fresh and especially creative approach, given the fact that McLuhan's work has been studied almost exclusively within the framework of the communication sciences, far away from geography. McLuhan's initial interest in the effect of the alphabet as a technology that transformed the concept of space, came to be complemented with the discovery of the notion of acoustic space. Furthermore, the concepts of spatial and temporal bias exposed by Innis, let us see McLuhan's broad interest in the problems of space. Cavell says "the development of these interests into a broader concern with spatialization is coherent with the overall trajectory of his intellectual career, and with the broader cultural currents of his time" (Cavell, 2003, 4).

In the field of literature, McLuhan pointed out that the modernist movement represented the transition from a culture oriented by the visual and the written word, into an electronic culture with a tendency towards the acoustic. In a similar way, the Renaissance was the step between the spoken word, which already faded in time, and the birth of a culture in which the eye would be called to dominate. There is a tendency to emphasize simultaneity in linear texts, like in the works of James Joyce (*Ulysses*, 1922, *Finnegan's Wake*, 1939) and Stéphane Mallarmé (*Un coup de dés jamais n'abolira le hasard*, 1897). These writings are a constant reference in McLuhan's work.

According to Cavell, McLuhan had a "revelation" when he came in contact with the ideas of Giedion on architecture, open space and the enclosed space. Thereafter, he assumed that *visual space was just a form of space*. Thus, the sensory experience undergone by a blind person in open spaces, as for example in stadiums, is one in which an auditorium space has no physical limits and is multi-linear. From this idea, McLuhan will develop the notion of acoustic space. He had found a way to incorporate time in a relational manner through the dynamism of the acoustic, as Cavell very rightly points out (Cavell, 2003, 21). This concept will be fine-tuned later in *The Global Village* in the concept of *audio-tactile space*. If we see the space as "the world created by the sound", then it must be clear that its characteristics are completely different from the visual space. It has no fixed limits, there is no centre and a poor sense of direction. In addition, the visual space is more directly connected with the central nervous system than anything visual: the image is not as powerful as the direct spatial sensation. When in the context of electronic technologies McLuhan says that the auditory force annihilates space, he actually is referring to visual space. This view approaches the post Einsteinian conception of space-time (where both collapse). To Cavell, McLuhan's *Understanding Media*, is the statement that time and space disappear into the electronic age of instant information. Thus, "acoustic space encapsulates time as a dynamic of constant flux" (Cavell, 2003, 22).

Both McLuhan and Innis were critical of modernity and to undertake this criticism they

invented a particular version of critical theory with a strong Canadian trait: a fusion of political economy and some of the critical rationality of the Frankfurt School. McLuhan, however, did not advocate a return to the values of the spoken word / temporality as Innis wished. On the contrary, he tried to spread the *Innean* idea that the characteristic of contemporary society was space, to reconfigure the space (visual) in terms of the acoustic, which is the effect of electronic technology on visual culture. In fact, Cavell cites a sentence from *Understanding Media* where McLuhan says that the effect of contemporary technology is to leave us speechless, mute (Cavell, 2003, 25).

The Marxist critic of the theory of space stresses the argument that by studying space and leaving the concept of time—which organizes human labour—in the background, McLuhan is overlapping the material environment with historic evolution. This emphasis on the environment is the essential materiality of the contemporary social and cultural production (Cavell, 2003, 24). The environment is not anything except the context created by the electronic media that we seem not to perceive. It seems that McLuhan was criticized because his idea of space could sound static, and only labour, money and social action would be dynamic processes within it. But this critique [Cavell's argues] reveals that the dynamic nature of space posed by McLuhan is not understood properly. "*It was visual space, thus, that McLuhan critiqued. It was visual space that was static, not the spatial per se (...) he saw himself working within the spatial bias, but against visual space.*" (Cavell, 2003, 26). McLuhan developed his critique from the spatial qualities of the sound, a space that incorporates the temporal as one of its dimensions. For him the global village was constituted by a fundamental paradox that is situated in a simultaneously dynamic and spatial location, which implies an embodied and located concept of space and time. Thus, if space in Modernity was synchronous, in the Post-Modernity space is diachronic, since juxtaposition of stories will be its main feature. From here we can say that Nature happens to belong to Culture for which there is no longer possible to speak of both as separate phenomena. This will be the dynamics of the Global Village.

McLuhan sought to analyze not only the way in which society produces space but also how space technologies produce society itself.

3. Territories and Borderlines: Art as Locative Media that saves Lives

If the basic question that McLuhan asked was "What effects does any medium, as such, have upon our sensory lives?" (Nevitt, 1995, 143), the answer lies in the changes that are generated in the perception of space, and in the notion that space is the means of communication. Spatial relations are more than simply perceptual; they involve perspective as well. McLuhan argues that the "effects of technology do not occur at the level of opinions or concepts, but alter sense ratios or patterns of perception steadily and without any resistance" (1964, 33). Artists, unlike other people, he argues, see this clearly. According to him, they are the only people who master the technological transitions because they have an innate understanding of the mechanics of sensory perception (1964, 33). For McLuhan, it was the medium of print—not the content—that produced a split sense of auditory and visual experiences. This medium produced a sense of individuation and a sense of continuity between space and time (1964, 86-87). For another theorist of time and space, novelist Gertrude Stein, the only thing that she believed changed

from one generation to another was our sensory perception, or what she called our ‘time-sense’. She defined vision as the dynamic in the creative system that transformed our sense of time and produced new schools of thought and art (“Composition” 513). McLuhan too awards a special place to the role of the artist in transgressing and subverting order: ‘...It is possible to relate to the environment as a work of art...’, he wrote? How does the function of the artist subvert the spatial order? In the Renaissance, art, architecture, and horticulture used a single focal point as a means of depicting perspective, but this single viewing point negates movement. Newer technologies have an ongoing effect on our notions of perspective as something dynamic and located. The science of the body in motion in the spaces of the world creates multiple, shifting points of view, and trajectories of the subject, which, by definition, cannot be fixed except in place in time, that is in a particular location in the ‘now.’ This is why the new media do not use perspective as an orientation, but choose instead the disorientation of linking. Point of view has always been by definition fixed in time, but the dynamic nature of disorientation invites in transformative spatial dimensions out into limitless moments in space. Motion is disoriented perspective in the new media.

The taming of the geographic space through its data is something that we take for granted—and even welcome—in a data-rich world. History has taught us, however, that the “systematization of land information routinely results in a centralization of control and a loss of local self-determination” (Butt 3). Michel Foucault was bang on the money when he deemed the contemporary panopticon as operating from within ourselves. We now live within surveillance cultures where everything is mapped, observed, monitored, recorded, policed and controlled. Between 1989 and 1993, the American military launched 24 satellites into orbit around the earth to establish a global positioning system or GPS—a mapping system now apparently deemed innocuous by most and happily embraced by individuals on the move around the world with mobile technologies. In May of 2010, the first replacement for that aging network was sent skyward. Where the original satellites gave accurate 3D cartographic accuracy to 20 feet, the new and improved versions will increase our ability to see accurately to three feet (*Google Earth Blog*). It is no accident that this latest cartographic technology was devised by the military. The experiences of being found or being tracked are quite different from that of orienting one’s self.

3.1 The Transborder Immigrant Tool

California-based artist Ricardo Dominguez and his team were concerned with mobility and orientation as an aspect of art. Inspired by Brett Stalbaum’s *Virtual Hiker* project, which reads the terrain of an area and generates a hiking path around the topography, Dominguez wondered if he could adapt this mobile tool to serve people crossing the Mexican-U.S. border. What they created they named *The Transborder Immigrant Tool*. Dominguez sought a cheap cell phone that had GPS functionality without a data plan. He adapted the Motorola i455, and used it to hack the GPS system. The tool had to be so universal that any user—literate or illiterate, Mexican or chicano, Spanish-speaking or not—could use it. It has an iconic visual interface that resembles a compass. The tool is also acts as a virtual divining rod, vibrating when it approaches water or safety beacons, and warning the user when she nears a road. The group had funding to build 500 units and has been working with Border Angels and other humanitarian organizations, who provide water and other supplies to walkers in the desert,

to alert would-be walkers to the existence of the device.

The tool has multiple uses and features that are being developed one by one: Dominguez's group is acquiring jealously guarded data that will enable them to GPS map the Mexican-American border; it is researching current transborder policing networks and infrastructures; it is mapping the support community food and water drops; writing the code and testing the accuracy of the maps and units; creating dual linguistic interfaces in English and Spanish; testing the tool; and distributing it to the communities most likely to attempt crossings (Ho). By hacking stolen satellite data and making it available, the *Transborder Immigrant Tool*

add[s] a new layer of agency to this emerging virtual geography that would allow segments of global society that are usually outside of this emerging grid of hyper-geo-mapping-power to gain quick and simple access with to GPS system. The Transborder Immigrant Tool would not only offer access to this emerging total map economy—but, would add an intelligent agent algorithm that would parse out the best routes and trails on that day and hour for immigrants to cross this vertiginous landscape as safely as possible (thing.net).

Orientation, motion in space, is continually a problem in this border zone between the two countries where surveillance is the *modus operandi*. All movements are surveilled and behaviour monitored. *The Transborder Immigrant Tool* reveals that “simply to know one's location is a privilege” (Ho) and demonstrates how dangerous taking charge of one's own mapping and route really is. While Dominguez and his team define the device as a humanitarian tool designed to help save lives, it is not surprising that it has been viewed by the American extreme right as an act of war. Named one of the most interesting people of 2009 by CNN, Dominguez is a tenured professor of Visual Arts at the University of California at San Diego. He has not only been threatened with criminal action, he has received death threats and is in danger of having his tenure revoked on account of this tool and other projects. This tool, however, is perfectly legal. It builds on:

a long history of walking art, border disturbance and locative media. At issue here is an interesting linkage that is made between humanitarian value and artistic value. While ... Dominguez states, “All the immigrants that would participate would in a sense participate in a large landscape of aesthetic vision” due to the multiple layers of communication (e.g., iconic, sound, vibratory) and the way the tool's algorithm would help the user find a “more aesthetic route,” [He says,] I would suggest that the artistic value emerges from its very linkage with the humanitarian aspect. The Transborder Immigrant Tool subverts the usual idioms of locative and interactive media (such as “virtual reality”) to reveal the virtual virtual - in the Deleuzian sense (which is very different) - of locative media. And that virtual, here, is *war* (Ho).

Today in many cities, digital media artists continue to be so preoccupied with place and this internet of things, that it is not just devices they take over, rewrite, reinvent, flatten, divide and remap. Some cities have such complex histories that mapping its stories become the subject of works of digital media, locative media and site-specific art. Digital media possess unique abilities to “transcend the boundaries of time, space and even language...to mediate historically produced ruptures that link past and present” (Faye Ginsberg, qtd in Meek 21).

3.2 Geo-spatial Practices

Place is clearly becoming more and more important in art, business, and thought. As the layers of data in our everyday situation become increasingly complex, it is through locative media that we can reinsert ourselves back into the landscape of the city. McLuhan locates the birth of the city in writing (1964, 99), and Bruno Latour sees maps as a way of annotating the world. In information space, however, text and image-based maps have merged to birth a new kind of coordinate: a subject in motion who is writing in space. Where mapping sought to fix the city, urban encounters explore its fluidity. Countercultural movements in urban space from graffiti to geocaching to psychogeographic wanderings to the acrobatic explorations of parkour re-embodiment urban experience in dynamic ways.

Despite digital media's bad rap as a disembodied form dispersed over a network, they are now demonstrating "a trend toward 're-enacting the importance of place and home as both a geo-imaginary and socio-cultural precept'" (Thielmann 5). Locative media is the antithesis of the "Live Borderless" philosophy that LG and other multinational companies want us to believe we want. Locative media has emerged in the last decade as a response to the immateriality of code-based net.art and the deregulation of the world under globalization. Abundant geo-spatial data and cheap handheld mobile technologies have made cartographic information freely accessible. For a long time, one of the big buzz words was 'virtual reality' and people were struck by the notion of simulation, of creating alternate worlds. Now the hype is all about 'augmented reality', a real world with digital data added to it. This is a world we can write ourselves into: "As opposed to the World Wide Web the focus here is spatially localized, and centred on the individual user; a collaborative cartography of space and mind, places and the connections between them" (qtd Tuters and Varnelis 357). In fact, in some circles, the geo-spatial web has been heralded as the next big thing with locative media artists being ground breakers for the coming third wave of Internet technologies (Tuters and Varnelis 358). Locative media uses three different kinds of mapping: 1. The annotative, which adds something to the world; 2. The phenomenological, which reveals space by documenting the movement of an object or subject in the world; and 3. the movement of engaging in locative media could clearly be connected to the Situationist practice of wandering to get lost, a psychogeographic act. Marc Tuters and Kazys Varnelis equate the first two types of mapping—annotation and phenomenology—with the other "Situationist practices of *détournement* and the *derive*" (359). The Situationists were a group of radical artists and philosophers who lived in and around Paris in the 1950s through 70s. Their leading thinker Guy Debord defined the movement as "an ephemeral project: anti-aesthetic, nonobject-, nonartifact-based, collective creation with a new emphasis on the *self*. Its goal is the creation of a new politicized 'you'" (Debord 99). In his manifesto *Society of the Spectacle*, Debord calls for a participatory art form that will release the masses from the numbness that mass media imposes on them. Because Situationism's goal was to break the fourth wall of specular culture, their ideas are back in vogue as participatory culture has arisen alongside user-generated or Web 2.0 culture.

While these three geo-spatial practices do not necessarily map neatly back onto locative-media activities, they do free us from the Cartesian grid and render maps dynamic. Static maps privileged space and downplayed time. The new data maps, however, raise special problems too, for, as Coco Fusco has observed in a critique of the dangers of locative media, "the very act of viewing the world as a map 'eliminates time, focuses disproportionately on space and dehumanizes life'" (2004, qtd in Mitew 5). Locative media can start us down a

road where we put the emphasis back on place (over data), opening up a time-lag or a gap between real geographies and our interactions with information space, a gap where we might insert counter-mappings of official narratives and fixed histories. It is in this opening that we might become not simply participants, but authors of our own space. Bruno Latour and other theorists take it one step further asking whether maps precede the territory they “represent” or do they produce it? (November 2) “[D]igital technologies,” they argue, “have reconfigured the experience of mapping into ...a *navigational platform*” (November 4). Digital interfaces, which include databases, touchscreens and mobile phones, act as “*dashboard[s]* allowing us to *navigate* through totally heterogeneous sets of data which are *refreshed* in real time and *localized* according to our specific queries (November 4). Convincing arguments have been made for the unofficial aspects of the Web demonstrating the ability to operate like graffiti in urban space. A kind of public art, it is countercultural, raw, undisciplined, political and situated:

The interchanges between contemporary graffiti and new media encompass a range of technologies (digital photography and video, websites, mobile phones, locative media, gaming)... As a cultural practice, graffiti also enables a remapping of urban space, providing new media with fruitful models for the negotiation of actual urban spaces and decentralized networks of information.” (MacDowall 138).

4. Relational Aesthetics, Public Art and *Body Movies*

Screens can create new public relationships or what Nicolas Bourriaud calls “relational aesthetics”—where the aim of the work is to foster a interactivity in an environment and social connections between users. Mexican-born Canadian artist, Rafael Lozano-Hemmer uses relational architecture to create social sculptures or what he calls “anti-monuments.” He has a series of seven pieces in his “Shadow Box” series that create “platforms for public participation, by perverting technologies such as robotics, computerized surveillance or telematic networks” (ICM). Lozano-Hemmer has come to international fame (creating the light show for the Vancouver Olympics, for instance) by designing works that combine computer controlled lighting displays with robotics and surveillance technologies to produce a 2.0 version of shadow puppets. *Alpha Blend*, the seventh piece, uses a computerized tracking system in intimate gallery space to blend an interactor’s picture with those of earlier users. “A game of ‘reverse puppetry’ ensues, where a portrait from the past is animated by a live presence, in a similar perceptual mechanism” to the one used in Lozano-Hemmer’s most famous “Shadow Box” installation, *Body Movies (Alpha Blend)*. Half the time *Alpha Blend* merges a user’s image with that of the previous user and the rest of the time with an archived user’s image that can date as far back as ten years earlier. By contrast, *Body Movies* (2001) is large scale public art:

Thousands of portraits taken on urban streets are back-projected onto a giant screen using robotically-controlled projectors. Those images are then entirely washed out by blindingly bright lamps placed at street level. Anyone who crosses the square interrupts the light source, simultaneously projecting their own shadow and revealing the figures underneath. Once all the images in a single scene are exposed through shadows cast by people in the square, the scene changes. A camera-based tracking system monitors shadows in real

time, giving auditory feedback in response to their efforts when they match their shadow to the original scale. Up to 60 people can participate at one time “creating a collective experience that...allows discrete individual participation” [44]. This entirely reinvents the notion of the city square for the 21st century and gives us space to reassess dramatizations of public and private space within the context of public art. (Guertin 10-11).

While shadow puppets undoubtedly predate Homer’s famous cave as the earliest form of projection art, *Body Movies* invest them with new meaning. His works investigate what he calls “the crisis of urban self-representation. The piece attempts to create an anti-monument of alien presence and embodied relationships” (Lozano-Hemmer), enlisting participatory culture as a medium for projecting the crowd’s own movements in space (Lozano-Hemmer). This site harnesses playfulness and the willingness to suspend disbelief in order to work together for collaborative results. It is *social space* rather than an *objet d’art* that is the emergent experience out of these interactions.

Users are immediately arrested by their shadowy counterpart. They stop, crouch, jump and stretch, move closer and further away as they try to match the figures on the screen. Interactors toy with the scope and scale of the piece, with a giant shadow pretending, for instance, to pour liquid into the mouth of a tiny person or by giving a seated senior shadowy biceps. What is so remarkable about these interactions is the way people are completely uninhibited when it comes to playing together for visual ends. (Guertin 11).

Often play starts with rude gestures and then gradually develops into genuine public cooperation and collaboration, which is indicative of how universal a play space his works are. The kind of public that would never engage with art in any other environment, become fully-engaged citizens in these public works. Public art is an essential element in urban space, adding not only beauty and utilitarian spaces to urban environments, but also opening a space for art practice to those sectors of society who might not otherwise participate.

Conclusions

The days when public art consisted of a neglected monument or lone fountain in a square are long gone. Social sculpture, locative media and public art break boundaries between the art object, its use, and its emergent properties thereby engendering relational aesthetics. It is comforting to know that on November 12, 2010, Domínguez posted on the Web page *b.a.n.g. lab* (Bits.Atoms.Neurons.Genes): “Dear communities of support, We (EDT/b.a.n.g. lab/me) are happy to report that the FBI Cyberdivision has ended its “investigation” of the March 4th, 2010 VR Sit-In performance. [...] Certainly [it is], something that we in the UC [University of California] communities should take into account next time we create any art that contains some expression of institutional critique-as-direct-action (at least in the worlds of augmented realities). We once more thank all the communities of support at UCSD/ UC and around the world. Mucha [sic] gracias, EDT/b.a.n.g. lab and me. P.S. La Lucha Sigue! [The Struggle Goes On]” Indeed.

Dynamic data surrounds us everyday in just about every aspect of our lives. Video surveil-

lance, locative or wireless media, and computer and video displays are entirely ubiquitous. At the same time as urban landscapes are information rich, they are networked, layered with multiple histories that can be mapped along racial, gendered, geopolitical and cultural margins. These are the information trails that comprise psychogeographic space. How might this richness of place be united with urban wandering to create life-saving engagements with urban space? Debord saw in psychogeographies the potential for counteracting the anesthetizing effects of the mass media because they are “the point at which psychology and geography collide, [providing] a means of exploring the behavioral impact of the urban place” (Debord). In contemporary terms, psychogeographic engagement is not dissimilar to participatory culture—a culture that eliminates the audience (à la Alan Kaprow) and reinserts us back into story spaces as authors and interactors. Kaprow in his 1966 work entitled “Notes on the Elimination of Audience” explores his invention of ‘happenings,’ artistic events in which the audience participates. These events were intended to create a heightened experience of the everyday where interactors could fuse with the space-time of performance. He advocated that all audiences should be eliminated entirely and individuals should become participants. Not to be confused with theatre or performance art, Kaprow’s Happenings were improvised in the moment like children’s imaginative play while following the parameters of a predefined script. Digital technologies could enable this kind of engagement with a location or event in personal, virtual ways.

Mobile technologies that have emerged since 2008 are now putting locative media, augmented data mapping and social media tools within reach of any networked individual. Their potential as a vehicle for spatial navigation is profound. Locative media endow us with the ability to “shape and organize the real world and real space” (Ben Russell quoted in Tutters and Varnelis 357). “Real borders, boundaries and space become plastic and malleable, statehood becomes fragmented and global; Geography gets interesting; Cell phones become internet-enabled and location aware, everything in the real world gets tracked, tagged, barcoded and mapped.” (Russell qtd in Tutters and Varnelis 357). Novelist Peter Ackroyd speaks of the “chronological resonance” of cities, the space where place, history and identity converge. Bringing together information richness, spatially complex histories in geo-tagged locations and personal journeys, the creation of alternate histories and visions in real space will continue to pile up and be readable and writable to anyone who chooses to wander in information rich space. “*The artist is a person who is expert in the training of perception*” McLuhan wrote. The definition is perhaps adequate to Domínguez and Lozano-Hemmer and many others who, like them, have transformed the ways in which we conceive the environment, the territory and the spatial relations that individuals construct in their constant transit on diverse forms of frontiers and borderlines, physical or cultural.

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From tactile to magic: McLuhan, changing sensorium and contemporary culture

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Introduction

Nearly half a century ago a certain literary critic and professor - Canadian by birth, converted catholic by faith - stated that media are 'extensions of our senses'. This powerful and catching definition, astoundingly new and challenging at the time, remains crucial even today for understanding the meanings of technological change and of contemporary cultural sensibility.

Today, McLuhan's heritage (namely his methodological attitude, his refusal of 'substitution' in favour of re-mediation and his 'environmental' approach) remains valuable for the interpretation of the relationship between media and the sensorium as well as for understanding emerging cultural issues and dilemmas.

This paper will draw upon theoretical and empirical evidences to address three distinct but interrelated aspects of McLuhan topicality, namely:

- I. Media as extensions; that is, the overall 'visual to tactile' shift in the sensorium and the new meaning of the eye in the tactile era (scopic, haptic, phagic, acoustic eye); tactile media as 'immersive environment'.
- II. tactile sensorium and new forms of local and 'virtual' relationships (from global village to digital social networking services, or SNS).
- III. The relationship between touch, the rise of a 'new magic' and the potentially risky 're-mediation' of the global village.

1. From visual to tactile: media and sensorium

Thinkers such as Simmel, Benjamin and even Kant indicated the sensorium as the primary human interface with the world. Walter Ong defined it as 'The patterned, patterning, coordinated world of sense experience; the entire sensory apparatus as an operational complex', or 'The use of human senses together to communicate' (Ong 1967).

Hierarchies among senses not only shape individual perceptions, but transform also social and cultural values: 'The etymology of all human technologies is to be found in the body itself' (Cavell 2003: 69).

In the present age, the sensorium appears to be undergoing an overall shift in at least two respects. The first dimension relates to a growing intersensoriality, which implies an 'end of hierarchy' and of the primacy of sight:

By imposing unvisualizable relationships that are the result of instant speed, electric technology dethrones the visual sense and restores the dominion of synaesthesia, and the close interinvolvement of the other senses (McLuhan 1996: 111).

The second dimension relates to Kant's 'secondary' senses. 'Secondary' senses, such as smell and taste, 'affect' the subject other than providing information, 'subjectivizing' and individualizing our relationship with the world. Today, secondary senses are gaining ground against the 'objectivizing' sense of sight, thus shifting the sense of truth toward pleasure and 'intensity' (Kant 2006).

What is changing, also due to the increasing ubiquity of media, is the *very nature* of the sensorium itself, which shifts from being a paradigm of distinct, specialized senses hegemonized by the eye towards a synesthetic, tactile sensorium in which sensations are translated from one sense to another:

It begins to be evident that 'touch' is not skin but the interplay of senses, and 'keeping in touch' or 'getting in touch' is a matter of a fruitful meeting of the sense, of sight translated into sound and sound into movement, and taste, and smell (McLuhan 1996: 60).

If our senses allow us to be always immersed in a 'total sensory bath' (Le Breton 2006), our extensions make this immersion far more intense and stimulating. In turn, this nurtures a sense of reciprocity and mutual involvement (as touching always implies being touched – see Derrida 2006), and may be fostering an immersive era of 'augmented sensitivity' where the criterion of truth shifts from 'correspondence to an external order of things' to 'intensity' (intended as an interior subjective resonance). As Howes (2004) stated, 'reach in pleasure' today means 'reach in meaning'.

Moreover, in this new era rational dialogue may be giving way to 'being tuned in' as the dominant mode of relationships, fostering a social space of empathic rather than dialogic nature.

As McLuhan well understood, internal shifts in the sensorium influence the equilibrium among media themselves: 'What I am saying is that media as extensions of our senses institute new ratios, not only among our private senses, but among themselves, when they interact among themselves' (McLuhan 1996: 53).

New meanings of the eye: from visual to audio-tactile space

In the shifting sensorium hierarchy gives way to interdependence, and today both are moving toward tactility. The eye, for instance, loses its 'scopic' character, and becomes haptic and tactile by reducing distance and 'touching' the perceived object (as in Cézanne's 'haptic vision'²⁸⁴, or in Illich's 'erectile pupil'²⁸⁵).

Moreover, as touch is an organ-less sense which rejects distinctions between inside and outside, the 'tactile eye' may also be becoming a 'phagic', bulimic eye, making, by metonymy, the entire body surface mouth like. This process is related to the distinguishing character of

284 In Merleau-Ponty (2006).

285 In Cayley (2009).

contemporary culture (remarked for example by Žižek 2002) as ‘starving’ for images and stimuli, un-reflexively swallowed in order to enable subjects to partake into the (hypermediatic) environment. Again, McLuhan well understood that in the post-visual era ‘we are the screen’.

McLuhan also remarks that media are ‘always on’ as either extensions or environment. As a result, boundaries blur: those between subject and extensions, those separating each medium from the next (fostering ‘convergence’ – see Jenkins 2006) and those between media and the rest of environment (fostering ‘post-mediality’).

The proliferation of images also enacts a sort of ‘acoustic’ space where the presence of the world is constantly confirmed by the ‘buzzing’ of (involving and touching rather than referential) images. ‘Acoustic space has no center and no margins (...) it is organic and integral, perceived through the simultaneous interplay of all the senses; whereas ‘rational’ or pictorial space is uniform, sequential and continuous and creates a closed world with none of the rich resonances of tribal echoland’ (McLuhan 1969). The tactility produced by discontinuous and mixed stimuli, together with simultaneity, fosters an audio-tactile involving environment which harkens back to a pre-alphabetic, tribal era:

By their dependence on the spoken word for information, people were drawn together into a tribal mesh; and since the spoken word is more emotionally laden than the written – conveying by intonation such rich emotions as anger, joy, sorrow, fear – tribal man was more spontaneous and passionately volatile. Audible-tactile tribal man partook of the collective unconscious, lived in a magical integral world patterned by myth and ritual, its value divine and unchallenged, whereas literate or visual man creates an environment which is strongly fragmented, individualistic, explicit, logical, specialized and detached (McLuhan 1969).

Invisibility, idiocy and the new integral awareness

As Edward Hall (1966) remarked, the environment is mostly unconscious, or ‘the hidden dimension’. According to McLuhan, as far as the ‘environmental’ nature of contemporary communication media is concerned, the ‘invisible’ character of the environment can foster ‘technological idiocy’: in fact, the less the subject is aware of the environment, the more s/he is ‘massaged’ and shaped by it: ‘Our various physical extensions or media act upon one another through the agency of our own senses. In this mode the man appears as the reproductive organ of the technological world’ (McLuhan 1996: 116).

Unaware of the environment, ‘our conventional response to all media, namely that it is how they are used that counts, is the numb stance of the technological idiot’. (McLuhan 1996: 18).

McLuhan would have appreciated the little parable-ish story novelist David Foster Wallace told Kenyon College graduates in 2005;²⁸⁶ indeed, McLuhan himself employed the same aquatic metaphor: ‘One thing about which fish know exactly nothing is water, since they

286 “There are these two young fish swimming along and they happen to meet an older fish swimming the other way, who nods at them and says ‘Morning, boys. How’s the water?’ And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes ‘What the hell is water?’” (Wallace, 2008).

have no anti-environment which would enable them to perceive the element they live in' (McLuhan & Fiore 2001).

My hypothesis is that it is exactly young people who may be risking falling into 'technological idiocy', in spite of their quick and skilled swimming. Rediscovering an 'old fish' like McLuhan could represent a resource for them insofar as it could potentially foster an 'artistic' stance toward the new digital environment. In fact, while an immersive/tactile culture does not favour increased awareness *per se* (reality appears rather to prove the contrary), McLuhan's warnings about the environmental nature of media, as well as about interdependence and inter-sensorial translation, can help escaping the 'environmental massage', through the cultivation of creative and 'artistic' capabilities thanks to augmented perceptual competence. If the artist is 'the man of integral awareness' (McLuhan 1996: 65), youths able to exercise reflexivity may become the artists of contemporary everyday life: 'To deal with the environmental as artefact is to move that which has long been unconscious onto the plane of knowing' (Cavell 2003: 96).

An example of 'everyday art' in the new environment can perhaps be found in the practice known as 'hacking'. In its most romantic form, hacker ethics (Lévy 1984, Himanen 2001) conceptualize hacking as an art-form, to be revered or frowned upon. Forty years after *Understanding Media*, McLuhan's artist's mantle could be donned by hackers, as hacking – broadly intended as tinkering, configuring, bending and exploring communication systems – appears to be a diffused attitude among digital natives - who in the digital era may hold the foremost 'integral awareness'.

2. Tactile space and the digital village

As we have seen, 'McLuhan's notion of communication combines a spatial model with a sensory one' (Cavell 2003: 6).

McLuhan draws on Edward T. Hall's *The Silent Language* (1973) to advance his point that media communicate through space and time. According to Hall 'space speaks', not only by communicating but also by organizing virtually every aspect of life, thereby forming a 'cultural unconscious'. Hall conceives space as strongly related to territoriality: 'Every living thing has a physical boundary that separates it from its external environment' (Hall 1959:158), whereas McLuhan's notion of space is much more dynamic in both nature and function: 'Environments are imperceptible, but they are not mere containers. They are active and pervasive processes. The diversity of spatial forms is related to technological impact on our sensibilities' (Cavell 2003: 78-79).

The space of today may be that of 'configuration': discontinuous, heterogeneous and mixed spaces and perspectives are present simultaneously rather than sequentially, like in Picasso's paintings or Braque's collages. And discontinuity calls for active participation and involvement. Space is therefore not the 'container', but the 'product' of relations; it is a space where objects, and subjects, create their own environment.

The simultaneous, discontinuous space brought about by contemporary media is also an 'empathic space':

Such spaces are discontinuous and paratactic in their nature, where the latter word indicates not only the lack of coordination or subordination of spaces, but also their tactility, insofar as these spaces are analogous not to the uniformity of the visual, but to the discontinuities of touch' (Cavell, 2003: 122).

Or, as McLuhan on page three of *The Gutenberg Galaxy*,

In the electronic age (...) we encounter new shapes and structures of human interdependence and of expression which are 'oral' in form even when the components of the situation may be non-verbal'.

Empathy 'implies both the interrelationship of viewer and object, and the interrelationship of sensory apprehension' (Cavell 2003: 123), within the 'resonating echo chamber of the discontinuous, interrelated tribal world' (McLuhan 1969).

As we will see, empathic identification, empathic spatial production and simultaneous field of relations, which is the nature of auditory space, are all striking features of SNS.

In fact, social networking services foster a kind of 'secondary orality' retrieved through electronic media; a sort of 'speaking that takes the form of writing, and of writing that takes upon itself the lineaments of a visible speech' (Cavell 2003:138).

The flat, horizontal, non-hierarchical, simultaneous space of the Internet can be seen indeed as an auditory space in McLuhan's sense:

Visual space is now being displaced by spaces constructed through the other senses, and together these spaces of the 'sensorium' formed a mosaic, a textured space that is neither planar nor linear, but 'cubist', as opposed to perspectival. McLuhan's umbrella terms for these spaces was 'acoustic' or 'auditory, since 'hearing is from all directions at once (Cavell 2003: 76)

In *Through the Vanishing Point* McLuhan emphasized the tactile implications of auditory space, and, indeed, the space of SNS can be seen as a 'tactile world with oral implications'.

The space inhabited by the youth is of a discontinuous and paratactic nature, both features of tactility according to McLuhan. In *The Gutenberg Galaxy* he elaborates on 'non visual attitude to spatial forms and orientations' and 'multidirectional space orientation which is acoustic or auditory'. Moreover,

Acoustic space has no center and no margins (...) it is organic and integral, perceived through the simultaneous interplay of all the senses; whereas 'rational' or pictorial space is uniform, sequential and continuous and creates a closed world with none of the rich resonances of tribal echoland (McLuhan 1969).

Another feature of auditory space is that, unlike the visual one, it cannot be shut out: in fact, 'We have eyelids, but we have no 'earlids'. We cannot shut out our acoustic space, or the space of relationships and connections that are all around us' (Federman 2003) We are thus living in a regime of 'perpetual contact' (Katz & Aakhus 2002): such is the post-media condition, where 'sharing' becomes the operative word.

Communication may today be more sharing environments than saying things:

Communication, in the conventional sense, is difficult under any condition. People prefer rapport through smoking or drinking together. There is more communication there than there ever is by verbal means. We can share environments we can share weather, we can share all sorts of cultural factors together but communication takes place only inadequately and is very seldom understood (McLuhan & Stern 1967).

On the basis of recent empirical evidences (Pew Research Center 2010; Giaccardi 2010) this paper advances an interpretation of the reciprocal 'tactile' visibility of young people in social networks as approximating a digital version of McLuhan global village – with some crucial differences. The original notion of 'global village' was based on a perceptual-empathic-emotional participation and involvement with other – distant and unknown – people:

Television is primarily an extension of the sense of touch rather than of sight, and it is the tactile sense that demands the greatest interplay of all the senses. The secret of TV's tactile power is that the video image is one of low intensity or definition and thus, unlike either photograph or film, offers no detailed information about specific objects, but instead involves the active participation of the viewer (McLuhan 1969).

And moreover: 'The electronically induced technological extension of our central nervous system are immersing us in a world-pool of information movement and are the enabling man to incorporate within itself the whole of mankind' (ibid). But while in the global village the one-way accessibility of unknown people cannot prevent the risk of 'the rhetoric of distant suffering' and 'the crisis of pity' (Boltanski 1999), in SNS well-known people, or 'friends-of-friends', are reciprocally accessible and in 'perpetual contact', performing a 'transitivity' between online and offline, and using communication in a way that is mainly 'phatic', thus fostering of a sense of mutual involvement and commonality (in accordance to Marcel Mauss – see Mauss 2001 and below).

In McLuhan's view, the 'global village' produced by television was based on a shift from perceptual to emotional participation. However, there was very little interaction among villagers. The 'digital village' of SNS appears to better fulfil McLuhan's prophecy by bringing about the 'tactile' dimension of reciprocity and interaction: being affected is also feeling affection (like the translation of 'contacts' into 'friends' suggests) (Boyd, Ellison 2007; Boyd 2007; Tufekci 2008). If television failed in overcoming visual individualism, the behaviour of young people in the Social Network (SN) appears to offer alternatives, albeit still embryonic. Some of the practices enacted by users appear to implicitly criticize several features of contemporary individualistic culture. For example, subjects appear to be trying to overcome the gap between function and meaning (Castells 2009), or medium and message; manifesting demand for non-solely-private reconstruction of meanings; refusing to be entirely driven by technology; expressing the need for effective action, recognition and sharing.

In SNS, the medium (that is, the relationship) is also the message: semantics are either subordinate or incidental, and at any rate are vehiculated by the relationship. Here telling is not simply 'saying something'; it is, first of all, 'saying something to someone'. Being in relationship with somebody even when talking about nothing holds greater importance than saying something: the 'phatic function', aimed at performing a social task rather than conveying information, appears to be dominant (see Liu 2007 on 'taste performances'). As Marcel Mauss remarked, the phatic function (such as chatting about nothing around the evening

fire) is a crucial 'social glue' in traditional villages. It appears to remain so in the digital village, where alphabetic separation is overcome by the post-visual, tactile words of phatic communication:

Our new electric technology that extends or sense and nerves in a global embrace has large implications for the future of language. Electric technology does not need words (...) Electricity points the way to an extension of the process of consciousness itself, on a world scale, and without any verbalization whatever (...). The computer, in short, promises by technology a Pentecostal condition of universal understanding and unity' (McLuhan 1996: 80).

While alphabetic communication is divisive, phatic communication is inclusive and fosters an attitude leaning more towards 'collectivism' than individualism. In SNS, relation appears indeed to be both medium and message.

The apparently intangible and incorporeal space of SNS actually appears to be deeply intertwined in the material and actual life of youngsters, and is somewhat comparable to Oldenburg's 'third place' (Oldenburg 1989; on different virtual environments as 'third places' see Steinkuehler, Williams 2006; Soukup 2006). Oldenburg writes of a shared meeting place, informal and cosy, that 'anchors' community life facilitating and broadening interaction. Its main features are: free access, high accessibility, a welcoming and comfortable character, the regular attendance of people, and the availability of both new and old friends.

The effort to build a 'third place' between public and private, offering the chance to be in touch with any other attendant of the same space, strikes as a relevant if flawed attempt to overcome individualism by building a dimension of 'commonality', of a loose 'being in touch', within which individual problems and issues can be shared and 'translated' in a broader perspective. It is also a place where the uncertainty of many 'rite de passage' (Van Gennep 1960, Turner 1982; Turner 1986) of life (such as beginning high school or college, moving from one city to another, or coping with parental divorce) can be shared with peers playing the role of tutors in the 'liminal' phase. This happens in an historical moment where traditional places and actors suffer from a loss of function and legitimacy.

In order to investigate these hypotheses, in 2010 a national survey was conducted in Italy aimed at studying the communicative and relational practices of young people in the digital world. The sample (n=50) included subjects aged between 18 and 24 years.²⁸⁷ The underlying, McLuhan-ian hypothesis was that media were used by subjects, rather than as mere 'instruments', as 'settings' or 'environments', where experiences could take place and relations be formed and maintained.

The project returned some interesting findings pertinent to this paper's objectives.

First among them was a *continuity between the offline and online relational dimension* (Kennedy 2006); these dimensions did not appear as parallel worlds in tension (surrogating or substituting relationships). Instead, what emerged was a single 'real', discontinuous, simul-

287 Sampling was performed on the basis of gender, area of residence (northern/Southern/central Italy), town size (small or large urban centre) and occupation (students/workers). To be eligible, subjects had to possess a mobile phone and internet connection, and use SMSs, email, IM and SNS at least three times a week each. The project was conducted by the Catholic University of Milan and financed by the UCS (National Office for Social Communication) of CEI (Italian Episcopal Conference) The whole report is available (in Italian) at www.testimonidigitali.it/ricerca, and has been published in Giaccardi 2010.

taneous space of experience – which appeared as mixed, internally differentiated and unified by practices and relations: a tactile, rather than visual space. What emerged for each subject was a complex geography of experience, crossing different terrains.

Second, relationship appears to play a central role in the how this ‘digital village’ is inhabited (Gochenour 2006). Here, ‘to be’ appears second to ‘to be with’ and more than narcissism (an accusation often directed towards SNS users – see Buffardi, Cambell 2008) what appears dominant is a more context-oriented attitude, which can easily shift toward conformism in the digital village: as McLuhan put it,

Tribal cultures cannot entertain the possibility of the individual or the separated citizen. Their ideas of spaces and times are neither continuous nor uniform, but compassionate and compressional in their intensity (McLuhan 1996: 84).

In Hall’s term, the Digital Village hosts a ‘high-contact, high-context culture’.

This notion appears evident in many of the project’s empirical findings, particularly with regards to:

- a) Technology adoption, which appears to be largely motivated by fear of social exclusion and enacted on an imitative basis .
- b) Uses, which emerged as consistently relation-oriented both for ‘environmental’ or ‘instrumental’ (i.e. aimed at specific goals, for example organizational) relations. Although different inhabiting styles could be seen in the sample (the digital village as a space for performance, reference or entertainment), relational uses appeared dominant. In particular, the phatic use appeared to be central in constructing and stabilizing a ‘common place’ and a sense of ‘being with’ transcending both instrumentality and individualism.
- c) Identity management practices, which emerged as irriducibile to mere narcissistic exhibitions of individuality or to its concealment. The practices of meticulous forgings of user profiles emerged as both *attentive to others* and inclined towards *standardization* (rather than extravagance) so as to ensure a harmonious inclusion within the environment (as is the norm in the neo-tribal collective contexts). Identity emerged from our data as not merely the ‘expression of inner self’, but rather the result of a journey outside of it, and of the effort of recomposing into a ‘narrative mosaic’ the many traces of the self scattered online. This kind of ‘averted reflexivity’ obviously needs the recognition of others. Identity is, in some way, a kind of ‘gift’ one receives from the other, as ‘our private and corporate lives have become information processes just because we have put our central nervous system outside us in electric technology’ (McLuhan 1996: 52)
- d) The management of one’s social network. In this respect, the digital environment appears to enable subjects to handle satisfactorily the increasing complexity in both the most invested (in-depth management) and ordinary (network maintenance) forms. *Trust* appears to play a central role in the widening of social circles, often through the mediation of of-line acquaintances acting as guarantors for new friends met online.
- e) The meanings conferred by users to technologies, which appear to be mostly ‘proxemic’. Indeed, meanings appear to range according to the ‘proximity to the self’ of a technology and therefore according to the level of ‘intimacy’ it allows. The ‘proxemic bubble’ (in Edward Hall’s terms) defined by each technology appear to vary according to three factors: 1) the content of what is said; 2) who can be reached through the different platforms; 3) the

extent of a technology's importance for the subject. The research found that the mobile phone, followed by MSN, are the most 'intimate', while Facebook is considered a 'distant' platform allowing a low level of intimacy.

These findings were then summarized along two polarized axes. The first axis relates to the relationship established by the subject with ICTs, and ranges from 'instrumental' (that is limited in time and focalized) to 'environmental' (based on the mentioned 'perpetual contact' attitude). The second axis is related to the kind of interaction technology establishes with young people's social networks, and ranges from 'dynamizing' (i.e. aimed at widening the networks of relations) to 'stabilizing' (i.e. aimed at consolidating)

Four different user profiles emerge from this scheme:

- **reserved**, enacting a somehow 'reluctant' use of technologies oriented towards consolidating limited but strong networks of offline relations;
- **hypersocial**, enacting uses oriented towards improving the management of wide and differentiated networks of offline relations;
- **collector**, enacting a use of technologies oriented to widening online relations, mostly in a playful way;
- **convivial or multicomunitarian**, enacting an instrumental use of technologies aimed at maintaining and widening friendship networks both offline and online).

With the exception of the 'collectors', who display a more superficial and self-centred (when not downright predatory) approach to the digital environment, all other profiles are characterized by strong investment in (and commitment to) personal relations, and by a high awareness of the online/offline patterns of distinction *and* connection within the subjects' discontinuous, empathic space of experience.

Collectors appear to be the most inclined towards experimenting a 'magical' approach to SNS, either for escaping the 'crisis of presence' or for experiencing what Benjamin (1969) called 'the thrill of acquisition' within the magic circle of one's own collection (in that case, not books but contacts).

Overall, the panorama emerging from the research appears to be favourable for the development of a *new digital humanism*, particularly when we take into consideration the capacity of the young people interviewed to shape this environment and to make the most of opportunities that nurture relations. Again, this notion appears resonant with McLuhan himself: 'McLuhan's humanism flore directly from his notion that our total environment – including its technologies – was a human construct' (Cavell 26).

Our subjects appear able to establish relations (contrary to a diffused understanding and also to our own expectations) which are not ephemeral or circumstantial, but *long-lasting* and *stable*. The maintenance of the common perceptual, tactile place for meetings and meaningful relations often rooted in a distant past, is one aspect that clearly comes to light in the research: space and time are no longer separated, and time is a sort of 'fourth dimension' of space, as in Newton's (and then Bakhtin's) 'chronotopes' (see Bakhtin 1981).

We could say that *being 'in touch' is not matter of skin*, but rather of *being accessible and visible to the haptic eye* in the digital village. Seeing other people and chit-chatting can be very reassuring, and can foster a neo-tribal ontological security (see Giddens 1991, Silverstone 1984).

In the theatre, at a ball, at a ball game, in Church, every individual enjoys all those other present. The pleasure of being among the masses in the sense of the joy in the multiplication of numbers, which has long been suspect among the literate members of Western society (McLuhan 1996: 107).

In the reciprocal accessibility of digital village, much more than in the electric age, at least 'we wear all mankind as our skin' (McLuhan 1996: 47).

3. Touch and the new magic: the dangers of tactility

The first German edition of *Understanding Media*, in 1968, was fittingly titled *Die Magische Kanäle*, emphasizing the nature of media as techniques (which is also the nature of magic) rather than 'instruments' (an aspect instead privileged in the title of the Italian edition, *Gli strumenti del comunicare*, or 'The Tools of Communication').

'Magic' comes from Greek *μαγεία* meaning 'voice', insofar it provides techniques for evoking and calling up spirits. The post-literate, neo-oral era is also an era where magic seems to come back, and, again, McLuhan foresaw the development: 'We might return to the state of tribal man, for whom magic rituals are his means of 'applied knowledge' (McLuhan 1996: 59), where 'applied means translated or carried across from one kind of material form into another' (McLuhan 1996: 58)

'Our very word 'grasp' or 'apprehension' points to the process of getting at one thing through another, of handling and sensing many facets at a time through more than one sense at a time' (McLuhan 1996: 60) And also:

Tribal man is tightly sealed in an integral collective awareness that transcend conventional boundaries of time and space. As such, the new society will be one mythic integration, a resonating world akin to the old tribal echo chambre where magic will live again' (McLuhan 1969).

There are several reason to believe that in the tactile, digital re-mediation of the televisual global village, magic could become an individualistic technique for getting things done, alternative to participation. First, the *context*: today's global world is based on contiguity and interdependence, as everything is (or appears) connected to everything else (McLuhan's 'total field'). Magical thinking assumes the world as a whole where anything is linked to anything else. Several anthropologists (including Mauss and Frazer) remarked how the laws of magic are all based on this originary 'contact'. For example the 'law of sympathy': 'things in contact are and remain the same – like produces like, opposites work on opposites' (Mauss 2001:79). Being in contact is the condition for magic to work: waving a magic wand to cast the spell is using an extension of the arm enhancing the effect of touch. This is in fact the condition of magic effectiveness, which is mainly based on the law of 'sympathy' and the correlated principles (continuity, similarity and opposition). As everything is in contact with everything else, the whole can be affected by acting on any of its parts: 'This whole, which is contained in everything, is the world (...). Everything has something in common with everything else

and everything is connected with everything else' (Mauss, 2001: 91).

Second, the *promise*: just like contemporary technology, magic promises to eschew space ('The shaman open the doors of distance' - De Martino, *ibid*: 15) and time by reducing 'the interval between desire and its realization': 'Between a wish and its fulfilment there is, in magic, no gap' (Mauss 2001: 78).

Moreover, the contemporary neo-oral, neo-visual, deeply secularized era appears to be a favourable time for neo-magic. In a complex world and in the 'age of risk', magic becomes a technique of 'ritualizing optimism', by fostering the hope of effective action, as well as being an antidote to the 'crisis of presence'. The latter is a concept elaborated by Italian anthropologist, Ernesto De Martino, who analysed traditional and religious rituals of (especially southern) Italy, and indicates an existential awareness of the fragility of being, an anxiety about the solidity of things as they are and the risk of nothingness; a dilemma evidenced in a disturbed sense of self and often expressed as illness, emotional distress, or 'alienation'.

Magic allows for a sort of 'redemption of presence': in Mauss' words, 'Magic's exclusive aim, apparently, is to produce results' (Mauss 2001: 78), as magic is in sense 'the easiest technique' for reaching goals.

De Martino refers to 'the magic drama' as a drama in two acts: 'the struggle of being, when is under threat and its relative redemption, taking place in particular moments of one's existence when presence is required more strongly than usual' (De Martino 2007: 81)

In fact,

when a certain sensorial horizon faces a crisis, the risk becomes real for any limit to collapse; anything can become anything, which is like saying that nothingness is moving forward. But magic, being on the one side an indicator of risk, on the other side is at hand for containing chaos and redeeming it by order. Under this respect, magic is restorer of horizons under siege. And with its demiurgical role, it can restore for all the otherwise vanishing world (De Martino 2007: 123).

In the global village of television, perceptual and emotional contact were condition of the awareness of the world as a whole; but the large amount of 'bad news' was heavily responsible for a sense of 'crisis of presence', nurturing what Bauman (2001) calls a generalized sense of uncertainty/unsafety/unsecurity.

By ritualizing optimism, magic can also fulfil the need for effective action in a world where the feeling of irrelevance and the sense of powerlessness are widely shared. Being a 'technique for making things happen', magic can become the new 'art of changing'.

This "magical turn" could foster problematic outcomes if we consider, for instance, the potential role of media as stages for contemporary 'shamans of presence', using neo-magic devices for injecting reality and trust in a chaotic and uncertain world, with heavy effects on political language and practices. McLuhan in a sense did forecast the revolution:

TV is revolutionizing every political system in the Western world. For one thing, it's creating a totally new type of national leader, a man who is much more of a tribal chieftain than a politician. [...] The new political showman has to literally as well as figuratively put on his audience as he would a suit of clothes and become a corporate tribal image — like Mussolini, Hitler and F.D.R. in the days of radio, and Jack Kennedy in the television era. All these men were tribal emperors on a scale theretofore unknown in the world, because they all mastered their media. (McLuhan 1969).

Thanks to the digital overheating of the 'cold' global village, 'participation' risks to devolve into 'delegation', and the 'showman chieftain' could rise to the rank of 'shaman of presence'. This 'neo-shaman' has several distinctive qualities: he can use 'special methods' to increase its capacity and its perceptual representational thinking, and also to enhance the intuition. While these methods can theoretically also be employed by ordinary members of the community, they are necessary condition of shamanism. (De Martino 2000: 12) Moreover, the shaman does not merely 'see' things, but is able to influence the 'seen' and his vision aims to be an active determination of the real (De Martino: 68).

Within the 'existential drama', Shamans become 'masters of the limit, explorers of the beyond, heroes of the presence' (De Martino: 104).

But as 'magic has no churches' and can perfectly fit the needs of an individualistic society, the risk for the digital village to reverse into a crowd of separated unities, led by a neo-shaman, is not so unrealistic, as the political situation of many countries seems to suggest.

As a conclusion, we can certainly recognize that more than forty years after *Understanding Media*, McLuhan's 'explorations' appear to retain a greatly usefulness for tasting and understanding the 'unique cultural flavour of our society' (McLuhan 1996: 13).

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Technology as a Form of Language: The Folklore of Electronic Man

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Knowing Your Grammar

In his classic book, *Understanding Media*, Marshall McLuhan speaks of media (and he understands media as any sort of technological form) as being “extensions of man” which by their introduction modify the rhythm and scale of human affairs and relationships. That is, they structure and re-structure our social lives by us using them.

This runs contrary to the more familiar notion of technologies and media as mere tools, vessels of our will. According to the traditional account and understanding the role of media and technology in our lives, these represent an equally interchangeable array of tools with which we can exteriorize the content of our minds. The only thing that changes, according to this account, is the reach of my ideas: speech has a limited, immediate reach, whereas writing, on the other hand, can take those same ideas much further. Print increases the capacity of writing by making it scale, and therefore that same idea-content can reach more people, further away, quicker. It’s a linear understanding of technological development: new technologies allow us to do the same things and think the same ideas, but do so, as Daft Punk would have it, harder, better, faster and stronger.

McLuhan thinks this is nonsense, an understanding typical of someone understanding things from the vantage point of the industrial age and its mechanical processes. At the core of this misunderstanding is the fundamental divorce between form and content, going all the way back to Socratic times and Plato himself, with all credit being given to content while form was secondary and misleading. This is, of course, an oversimplification, but the main point remained for over two thousand years, picked up again over and over: appearances are misleading, and our senses can sometimes trick us (as Descartes would have it), so the form, the container within which ideas travel must not be given attention, as it can only, at best, provide incomplete information, and at worse, outright error. Truth, on the other hand, was hidden beneath, and we should look for ways to get at it.

In other words, we are to look beyond media for truth, which hides somewhere beyond. It is also, conversely, true that media are effectively interchangeable, as what matters lies beneath.

McLuhan’s response is that by paying no attention to the importance of form, we’ve made ourselves blind to the effects media have in our lives. We wanted so hard for it not to matter, that we turned a blind eye on it. But McLuhan’s point is precisely that no matter how badly we want it, we cannot make ourselves immune to the effects of technology on ourselves (at least not by wanting it badly). Even more so, turning a blind eye on these effects is a dangerous proposition, as it only pushes to the background a series of intense and complex transformations of our cultures and societies upon which we get to have no say. His reaction is then

to push for a deeper look into the effects of media, by saying that, effectively, it is the medium that is the message: this is not to say that content is irrelevant (though that is sometimes ambiguous with McLuhan), but rather that if we want to understand how various forms of media have shaped culture, we must look at media itself, not at its contents.

Media become, in this way, “extensions of man” not by allowing running faster or jumping higher, but because they enable people to do new things, things they couldn’t do before. They open up possibilities for the mind. But there’s a downside to it: because these extensions are, at the same time, amputations: just as they open up a new doors for human action, they also close others, by making them inaccessible, uninteresting or just plain obsolete. This trade-off does not happen immediately, peacefully or even wilfully. It happens over time, and through a process ripe with conflict and resistance.

McLuhan wants us to be able to turn our attention to the medium, and to look for the message that is the medium; that is, the way in which media restructure society and culture. Because if we can start finding these patterns, we can see this happening all around us, and once we can figure that out, we can maybe actually have a say in the process. For McLuhan, our current crossroads (and this was the 60s) is similar to that of the medieval monks in early Modern times: when confronted to the changes ushered in by the fancy new technology of print, monks and, in general, the Catholic Church decided to oppose it by ignoring it. And, culturally speaking, the printing press wiped them out. (For a while, Luther’s understanding of the effects of print actually helped him gain considerable ground on the Vatican. Once his initial objectives were accomplished, however, he chose to resist it just as much.) If, in a similar fashion, we don’t want our culture to be simply wiped out by incoming technological change ushered in by electronics, then we are to have a better understanding of how technological change happens.

Instruction Manuals

What is it about media (or technology – by now, they are quite interchangeable) that we need to pay attention to?

In her study of recording and archiving technologies throughout the 19th and 20th centuries, Lisa Gitelman presented a very clear and useful distinction of two layers upon which we can understand media operating:

I define media as socially realized structures of communication, where structures include both technological forms and their associated protocols, and where communication is a cultural practice, a ritualized collaboration of different people on the same mental map, sharing or engaged with popular ontologies of representation. As such, media are unique and complicated historical subjects. Their histories must be social and cultural, not the stories of how one technology leads to another, or of isolated geniuses working their magic on the world. (...)

Defining media this way admittedly keeps things muddy. If media include what I am calling protocols, they include a vast clutter of normative rules and default conditions, which gather and adhere like a nebulous array around a technological nucleus. Protocols express a huge variety of social, economic, and material relationships. So telephony in-

cludes the salutation “Hello?” (for English speakers, at least), the monthly billing cycle, and the wires and cables that materially connect our phones. E-mail includes all of the elaborately layered technical protocols and interconnected service providers that constitute the Internet, but it also includes both the QWERTY keyboards on which e-mail gets “typed” and the shared sense people have of what the e-mail genre is. (...) Some protocols get imposed, by bodies like the National Institute of Standards and Technology or the International Organization for Standardization. Other protocols get effectively imposed, by corporate giants like Microsoft, because of the market share they enjoy. But there are many others that emerge at the grassroots level. Some seem to arrive *sui generis*, discrete and fully formed, while many, like digital genres, video rentals, and computer keyboards, emerge as complicated engagements among different media. And protocols are far from static. Although they possess extraordinary inertia, norms and standards can and do change, because they are expressive of changeable social, economic, and material relationships. (Gitelman, 2008, pp. 7-8)

This admittedly lengthy quotation is illustrative of several important McLuhanian themes. Gitelman’s notion of the social protocols that get weaved around specific media helps ground what McLuhan is speaking about when saying that “the medium is the message”: if there’s anything specific to that message, it is, precisely, these social protocols in all their complexity. Gitelman is quite accurate in identifying these as complex networks involving several different actors and interests, none of which can fully absorb or appropriate the actual configuring of the protocol: if any one actor could, then there’d be no such thing as illegal filesharing or social networks being used to drive political unrest. These protocols can be influenced, and can be moved around, but there’s very limited space for direct action in determining them.

Learning to use and cope with specific media therefore becomes a matter of being able to assimilate these protocols successfully, which includes things like knowing when to use and when not to use specific media. It’s fine to send a birthday party invitation over Facebook, but you’d probably not do the same for a wedding invitation. It’s OK to break up with someone in person, but you might want to think twice about doing it over an SMS message, or by changing your “relationship status” on Facebook without prior notice. The way these and other social transactions and their relationship to various media are regulated is through the interactions and understanding of the social protocols involved.

In *Understanding Media*, McLuhan mentions in passing a similar concept that is, however, much less developed than Gitelman’s exploration. McLuhan explains this understanding of specific media in terms of being able to grasp its “grammar”:

Cardinal Newman said of Napoleon, “He understood the grammar of gunpowder.” Napoleon had paid some attention to other media as well, especially the semaphore telegraph that gave him a great advantage over his enemies. He is on record for saying that “Three hostile newspapers are more to be feared than a thousand bayonets.”

Alexis de Tocqueville was the first to master the grammar of print and typography. He was thus able to read off the message of coming change in France and America as if he were reading aloud from a text that had been handed to him. In fact, the nineteenth century in France and America was just such an open book to de Tocqueville because he had learned the grammar of print. So he, also, knew when that grammar did not apply. (McLuhan, 2002, p. 14)

Other than this, McLuhan's notion of the "grammar" of technology is left for the reader to infer, and we can follow Gitelman's path to find a very reasonable interpretation of where it could've led (without subtracting any originality to Gitelman's account, of course). It does point in a very interesting direction for illustrating the process of coping with technology, and of incorporating it into our daily lives: media forms and technologies can be said to come to us by more than one instruction manual. One of these instruction manuals is explicit, and it indicates the specific literal ways in which the object is to be used – that it responds to certain electrical conditions, that it should or shouldn't be used in such or such way, and what to do if things fall outside expected operation, just to name a few examples. The other instruction manual is not printed anywhere, cannot be found on the manufacturer website and cannot be disregarded so easily either: the social grammar regulating how and when the object should be used, and how and when it shouldn't. These social norms governing the use of specific forms of technology are not obvious, and do not necessarily hold a direct relationship to its function or perceived benefits, but are instead the way in which the object is mapped back into the social continuum, and how it fits in with other objects, technologies and protocols.

Along the same line, acquiring competence, or even mastery, over the use of a specific medium, involves understanding and being able to comfortably navigate the social protocols woven around it, understanding its grammar. If this is what it means to know "how to use" a technology, then by extension we can also figure out what it means "how to learn to use" a technology by learning to find one's way around its grammar. Since this grammar is implicit and socially regulated, there are two closely related processes here: the first one is social experimentation, that is, we explore the grammar of a technology through trial and error experiments, carefully recording the results of each. The second one is an apprenticeship model, where we are never left alone to figure out the inner workings of this grammar on our own, but always find ourselves doing so by interacting with other users who exhibit various levels of understanding themselves. By continually testing, and by interacting with other users from whose experiences we also learn, we start to paint a picture of what this grammar looks like. This picture is always changing, as it is based upon the results of our continuing experimentation to figure out how far we can go.

But Nobody Reads Manuals, Anyway

Some rules governing the use of a language are explicit. Many, even most, are not. We just grasp them; learn them over time just by using them. More to the point, we learn them by missing them, by not hitting the mark and usually being corrected by somebody else. This happens at several different levels: it happens when I misspell a word, and my word processing software conveniently yet annoyingly underlines it in red so I cannot miss the fact that I'm mistaken. But it also happens when your significant other gently kicks you beneath the dinner table to let you know you just said something inappropriate in front of your in-laws. It's not just strictly formal matters that come into play, but also matters related to the social regulation of expressions and their perceived appropriateness. Just like Aristotle pointed out about ethics, there are more ways to get it wrong than there are ways to get it right, and the process of learning a language is the process of compiling this string of gentle and not-so-

gentle “nudges” into something remotely systematic we can use in future instances.

This also becomes the way in which we come to grasp various forms of media and technology. And that is also why we often get it wrong when we get started: whenever we’re faced with the task of grasping the grammar for a new technology, the only thing at our disposal to do so is the known grammar for a previous technology. This is, of course, what McLuhan understood as hybrid energy: the fact that our understanding of any given media is given first and foremost by our understanding of media that preceded it. Such was the case, for example, with early television broadcasts, which were basically staged radio shows. Similarly the case with early web search engines: think of *Yahoo!* In the mid-90s, when its directory feature was actually more useful and developed than its search function. The archival concept of libraries was used to categorize and make sense out of an unstructured and chaotic collection of documents like the web was growing to be, and it wouldn’t really be until years later with algorithms such as *Google’s* that we began to understand there’s no single entry point or underlying structure to the web.

It also must be said that a fair share of the complexity of this process stems from the fact that we are never operating within the grammar for a single technology, and the multiple grammars that surround us are not necessarily compatible. Even more so, it is not only technologies that encompass grammars in this sense, but all sorts of objects, institutions and even people. We navigate at once the grammar of family relationships and that of co-workers, which need to be made compatible with the grammar of telephones and that of e-mail, of public parking lots and shopping malls and local governments and transportation systems and so on. There’s a McLuhan-ish spirit to this, of course, and to his understanding of what “media” are as our sensory extensions: these are all different structures in which our human capacities are extended and transformed, not linearly but in rather conflicting and simultaneous ways.

Several of the complexities surrounding our relationship to language were highlighted a long time ago by Ludwig Wittgenstein: he would acknowledge language as a global experience, something we “inhabit” much more than something we merely “use” – in very much the same way McLuhan would have us inhabit, and not merely use media. Wittgenstein has this to say about the interaction between multiple grammars, or in his own words, “language games”:

23. But how many kinds of sentence are there? Say assertion, question and command? There are countless kinds; countless different kinds of use of all the things we call “signs”, “words”, “sentences”. And this diversity is not something fixed, given once for all; but new types of language, new language-games, as we may say, come into existence, and others become obsolete and get forgotten. (We can get a rough picture of this from the changes in mathematics.)

The word “language-game” is used here to emphasize the fact that the speaking of language is part of an activity, or of a form of life. (Wittgenstein, 2009, pp. 14-15)

Given the very fast pace at which technological change has happened in the last few decades or even years, we now have the exceptional opportunity of being able to contemplate how entire grammars come to be, evolve, and even become obsolete. Indeed, this seems to be an underlying theme for McLuhan as well: only now can we become fully aware of the fact that “the medium is the message”, because only now is our media experience varied enough

that we can actually compare multiple experiences and become aware of similarities and differences. The media explosion of the 20th century meant societies and individuals suddenly found themselves in the middle of competing, conflicting media paradigms.

I'd like to illustrate Wittgenstein's description of how we play language-games with examples from a particular grammar most of us will probably be acquainted with: the use of the world's most popular social network, Facebook. There's about a 1 in 14 chance anyone reading this will be on Facebook, which is not bad considering I'm taking into account the entire world population.

I'd like to take us through a side road into the world of Facebook expressions through the point of view of a website called Failbook, dedicated to compiling humorous Facebook posts, which are humorous not necessarily because of their content, but rather because the framing of the posts makes them funny. It's not about jokes on Facebook; it's about Facebook jokes. The reason why they're usually funny is because there's some unspoken rule being broken that we can all easily identify just by being Facebook users: we're able to recognize something no one actually taught us, but in recognizing this "fails" we're also acknowledging and assimilating a social ruleset at the same time.

Take, for example, the following post, which in a very literal way illustrate the way in which the polishing of our understanding of any given grammar relies on social nudges from the people around us:



Fig. 8. "0 for 2"

Now compare this very literal example with Wittgenstein's explanation of how we grasp the rules of a given language-game:

54. Just think of the kinds of case where we say that a game is played according to a particular rule.

The rule may be an aid in teaching the game. The learner is told it and given practice in applying it. – Or it is a tool of the game itself. – Or a rule is employed neither in the teaching nor in the game itself; nor is it set down in a list of rules. One learns the game by watching how others play it. But we say that it is played according to such-and- such rules because an observer can read these rules off from the way the game is played a like a natural law governing the play. — But how does the observer distinguish in this case between players' mistakes and correct play? – There are characteristic signs of it in the players' behaviour. Think of the behaviour characteristic of someone correcting a slip of the tongue. It would be possible to recognize that someone was doing so even without knowing his language. (Wittgenstein, 2009, p. 31)

Because of its emerging nature, the grammar of digital media, of social networks and of Facebook in particular are full of this sort of slips, and Failbook is a testament to it. These slips are actually reconfiguring a series of previously defined, carefully bound categories of our social existence, like what a “friend” is and what our “relationship status” can be. Or the more or less clear separation of public and private, or in between our social circles. It is not uncommon, for example, to run into awkward situations such as the following:

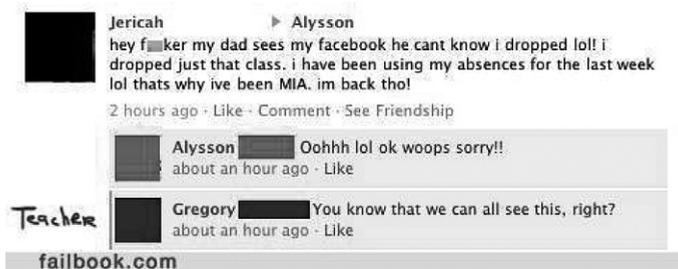


Fig. 9. “Secrecy FAIL”

Or, similarly:

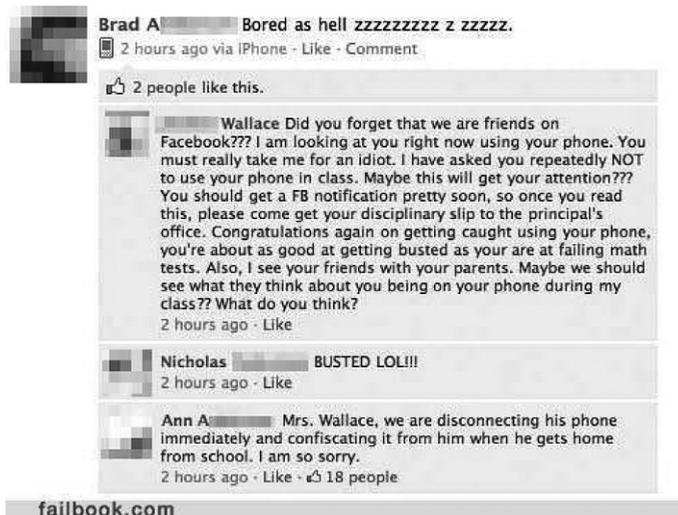


Fig. 10. “Busted in Class”

The fact that the Failbook community highlights these two instances is indicative of the fact that there are unspoken rules here that someone overlooked. By looking at these examples, it should be immediately obvious to us as competent users what it was: in social networks, social circles intersect in ways they don't in the physical world, and one must be mindful of that when communicating openly. This unspoken rule speaks to the ongoing renegotiation of public and private spaces: should teachers “friend” their students on social

networks? Does that entail restrictions on the lives they start publishing online? Should parent “friend” their children, or their children’s friends?

It is also possible for us to recognize when a certain grammar does not entirely fit with a social situation. Take the following example:



Fig. 11. “Brian Finds Out the Hard Way”

Is this an “appropriate” way to end a relationship? Probably not. Firstly, it is overly public. Secondly, it is quite impersonal. The caption to this post on the Failbook site read the couple had been going out for three years, all the more reason to assume breaking up would merit a more personal event.

Again, none of this is set in stone. Facebook terms of service do not prohibit this kind of behaviour, nor does its design: it is technically possible to do this. But the fact the Failbook would highlight this as a funny post indicates us something is not entirely right here. There’s some social rule that’s being broken at some level, which is what makes it funny to begin with. It’s funny because it’s true.

If we go back to Wittgenstein, we’ll find that this is precisely the way in which we learn how to “play the game”, how we come to grasp the rules of any particular grammar and to more or less discern what the bounds are for the reach of certain uses:

71. One can say that the concept of a game is a concept with blurred edges. — “But is a blurred concept a concept at all?” — Is a photograph that is not sharp a picture of a person at all? Is it even always an advantage to replace a picture that is not sharp by one that is? Isn’t one that isn’t sharp often just what we need?

Frege compares a concept to a region, and says that a region with- out clear boundaries can’t be called a region at all. This presumably means that we can’t do anything with it. — But is it senseless to say “Stay roughly here”? Imagine that I were standing with someone in a city square and said that. As I say it, I do not bother drawing any boundary, but just make a pointing gesture — as if I were indicating a particular spot. And this is just

how one might explain what a game is. One gives examples and intends them to be taken in a particular way. — I do not mean by this expression, however, that he is supposed to see in those examples that common feature which I – for some reason – was unable to formulate, but that he is now to employ those examples in a particular way. Here giving examples is not an indirect way of explaining — in default of a better one. For any general explanation may be misunderstood too. This, after all, is how we play the game. (I mean the language-game with the word “game”.) (Wittgenstein, 2009, p. 38)

By pointing this out as an example of how things fail (or #FAIL), Failbook is actually establishing a social precedent of how such situations shouldn't really be handled – lest you'd want to face the ridicule from the Failbook community yourself. No one's really telling you how it works, but it certainly doesn't work like that.

Again, there are two key ideas here that I think are especially relevant to our understanding of how we learn to use technologies. These are both taken into account within Wittgenstein's description of language-game operation. The first idea is that grasping the rules of a language-game (or in our case, the grammar of a particular technology) is done by trial and error, by missing the mark or observing others miss the mark and adjusting our expectations and understanding of our own expressions. By watching people fail to properly communicate on Failbook, we're indirectly building our own image of what successful communication looks like.

The second idea is that this all happens through an apprenticeship model. In other words, there's a community of language speakers from which we learn and who are continually “nudging” us and readjusting our use of different expressions. In other words, learning how to use a technology is always a social process, even when we consider those technologies to be somehow “socially alienating”: the use of any given technology is always socially regulated, and competent use implies understanding, even implicitly, that social ruleset.

Know Your Meme

This is all good, but what's the point? Why make an emphasis on understanding technology as language, and technology education as language acquisition?

Because there's also a political side to this. In the early expressions and configurations of technological grammars we are seeing hints and glimpses of worlds to come – in the emerging and evolving practices of young and old people using digital technologies, future societies are being built. This was no news to McLuhan, who identified this as the role of the artist, who would present to us “Noah's arks” to test-drive the future and attune our senses to changes to come. McLuhan presented the notion that some of the artist's innovations would stick around in culture and become behavioural patterns. Given the right patterns, the blow affected by incoming technologies could be alleviated.

Art, in this model, happens at the innovation level. Out of the myriad, everyday expressions that take place everyday, some acquire a special singularity: some plays within a language-game inadvertently bend the rules and say something that can't quite be explained from within the given language-game. These expressions force us to take pause and regroup, to readapt our personal version of a grammar to incorporate a new possibility.

In other words, some expressions work without fully working. Wittgenstein would say some expressions don't say anything, but rather show something. These expressions are shrouded in what Walter Benjamin would call an "aura":

What, then, is the aura? A strange tissue of space and time: the unique apparition of a distance, however near it may be. (...) In the light of this description, we can readily grasp the social basis of the aura's present decay. It rests on two circumstances, both linked to the increasing emergence of the masses and the growing intensity of their movements. Namely: the desire of the present-day masses to "get closer" to things, and their equally passionate concern for overcoming each thing's uniqueness by assimilating it as a reproduction. (Benjamin, 2008, p. 23)

Benjamin is esoteric, but the gist of his description is that something feels awry about the aura (no pun intended). But the key to his argument is that the aura undergoes a significant transformation upon the appearance of technological reproducibility: as the singularity of any given work is taken away in new media, so, too, is the aura taken away, as the "here and now" becomes less important.

However, it would perhaps be more precise to say art and aura change their meaning – they are themselves hybrid objects that undergo transformations. For Benjamin, this transformation is inherently political: only when art can be dissociated from the here and now can it achieve political significance through serial reproduction. In too simple terms, art becoming advertising has a revolutionary potential. Aura as a metaphysical property ceases to be of importance; instead, we have aesthetic value understood in memetic terms, as a contest for survival. Andy Warhol would later describe art, along this line, as "anything you can get away with".

This is brilliant. Because if language changes because of irregular, unforeseeable expressions someone "gets away with", then the transformation and continuous recreation of any given grammar is bestowed upon its users. This process, vaguely hinted at by Wittgenstein, Benjamin and McLuhan in their own terms, is only now beginning to unravel in all of its complexity because the time that used to take for any incoming grammar to affect our senses and our relationship to other grammars used to be quite long. In turn, the pace of technological development was relatively slow compared to the accelerated pace we see nowadays. The purpose, though, remains mostly the same:

The primary social function of art today is to rehearse that interplay [between nature and humanity]. This applies especially to film. The function of film is to train human beings in the apperceptions and reactions needed to deal with a vast apparatus whose role in their lives is expanding almost daily. Dealing with this apparatus also teaches them that technology will release them from their enslavement to the powers of the apparatus only when humanity's whole constitution has adapted itself to the new productive forces which the second technology [the technology of the machine age] has set free. (Benjamin, 2008, pp. 26-27)

Based on all this, I want to arrive at a series of conclusions that are not necessarily new, but I consider it important to put them in this context. Because shifting our understanding of the cultural and social structure of technology imposes a series of constraints on how we

approach technological objects.

Firstly, because it renders a fair share of our technology education practices and social policies obsolete (and I must note here I'm basing myself on observations from the Latin American reality, so your mileage may vary). Most of our approaches in this area usually revolve around teaching how to use a specific tool or toolset for a given set of problems or situations. We're educating on the use of delivery technologies as opposed to social protocols. This is because of our misunderstanding of how technology works at the social level, but it is causing us to replicate a cultural model for the industrial age at a time when that model is increasingly becoming obsolete. In the process, we're turning younger generations into the process of assimilating complex grammars without any form of handholding or orientation, because of our own inability to recognise the presence of these grammars right before us.

Take, for example, the case of videogames and their relationship to education. Despite having Marshall McLuhan articulate the idea that "the medium is the message" almost 50 years ago, the case for videogames in education has almost always been framed in terms of their content, which has resulted in a series of very, very boring games. But this approach has totally glossed over the fact that all videogames are educational by their very structure, and that increasing numbers of people are being educated by them all the time.

Secondly, there's a cultural dimension to this that is quite significant, and it relates to the folklore of electronic man, or lack thereof. Not because there isn't one, but because we're failing to appreciate and document it because it is just so hard. There's not a shortage, but an overabundance of recorded material to sift through to determine what's culturally significant in the age of the web. But it is within these practices that new cultural structures and behavioural patterns are emerging, much faster than we can possibly identify them, even less so evaluate and contextualise them. But the folklore that is being constructed around emerging technologies is quickly becoming an intrinsic part of its grammar, and failure to dominate this folklore is widening the digital gap even more. Not only are we failing to properly educate huge numbers of people on how to relate to technology, but even when we are introducing them into the grammar of tech it turns out that grammar has gone somewhere else entirely already. It's like trying to teach English vocabulary with the dictionary changing in its entirety every five years.

Finally, there's the political aspect we can capture from Benjamin. There's a cultural emancipation stemming from digital technology that can only effectively take place if our understanding of understanding technology contemplates the fact that there are social and cultural grammars woven around technological objects. Understanding any given technology includes being able to introduce oneself within the corresponding grammar, to understand its elements and to be able to articulate meaningful expressions within it. That basic competence, as we've seen through language-games, also implicitly includes the capacity to articulate "meaningful meaningless expressions", or in other words, of transforming the assigned meanings of the elements of a grammar. Simply put: failing to understand linguistic aspects of technology means underutilising its potential and underselling its value proposition. It means using digital technologies as if they were tools of the industrial age, as opposed to reading within the emerging folklore of electronic man the keys to new articulating principles that are increasingly guiding technological development and, over time, the foundations for new cultural behaviours.

Marshall McLuhan expressed his concern at the effects of electric technology with an analogy to medieval monks being swept away by the technology of print, because they were

unable to identify the incoming changes that would take place with or without them. In our time, we might find a similar analogy in watching *Mad Men*, the television show about 1960s advertising executives from Madison Avenue. *Mad Men* works because it is perfectly dated, and we can see the characters living in a world that they acknowledge as eternal and unchanging, all the while we're perfectly aware that everything they know should radically change within two or three seasons. What we usually fail to notice is that *Mad Men*'s joke is on us. Just like McLuhan's medieval monks and *Mad Men*'s Don Draper were swept away by their times, so are we setting ourselves up to be swept away unless we change our collective attitudes towards our relationship with technology. Or, perhaps even more unfairly, we're failing to provide the vast majority of the world's population with the tools and skills they'll need not to be swept away themselves.

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Consumption and Technology – Luciana’s Blog: Meaning production and consumption practices of the feminine daily life in intersection with the transmediatic scene of television fiction

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1. Introduction

The complexity of the contemporary context entangles an interrelation between meanings, in part for the technological development and the larger access to media, promoting quick changes in the social and the cultural realities. However, it is in the daily life, base of social life, that these changes are perceptible, characterized by symbolic and cultural aspects, reinforced by the enlargement of the communication networks, of the spaces for circulation of information, expanding the social relations networks, interconnecting social, economical, political and professional interests.

Regarding technology, the term “convergence” starts to be used: technological convergence, media convergence, meaning the conjunction of apparatuses, amplifying technical capacities. Here I think this convergence allied to consumption, this understood “as a moment of the production and social reproduction cycle”, as “the set of social and cultural processes where appropriation and use of products take place” (Garcia Canclini, 1996, p. 53) [1]. In this context, “convergence does not take place through appliances, no matter how sophisticated they become, but it takes place inside the brains of the individual consumers and in their social interaction with others” (Jenkins, 2008, p. 27)[2]. A kind of convergence that turns into cognitive transformations, enlarging possibilities of perception and reception. In the same line Igarza (2008, p. 142) [3] understands convergence as “a process more cultural and transmediatic than technological”. For this author, the culture arisen from such a process is characterized by “circulation of information”, transcending media. From Igarza’s point of view, entertainment and enjoyment become trans-media. “To fully enjoy a history, the user watches the movie, debates in forums and blogs, plays video games and reads cartoons”. The user “receives the contents and participates of communicative exchanges using, one at a time, several polyfunctional devices where texts, images and sound become complete” (Igarza, 2008, p. 142) [3].

Silverstone (2005) [4] talks about the necessity of knowing technology beyond its aspect as “machine”, in such a way that the use we make of it is not “filled with folklore”. Media technologies, for example, can be treated as enchantment and culture. Enchantment because they are considered magic so far they enter in our imagination mediated by anxiety, by enthusiasm, having possibilities we do not always know for certain what they mean. Culture be-

cause the uses made of it include not only “how and why”, but the technological apparatuses are also symbolic, material, esthetic and functional objects and practices.

Without representing determinism, technology alters the cultural context of reception. Thinking about technological convergence goes very much beyond the discussion on technical possibilities or inclusion aspects aiming only the access. Technological consumption only comes true if it permits meaning production, being consumption “a place of struggle that is not restricted to the possession of objects, once it is mainly characterized by the uses that give them social form and in which demands and devices of action originating from several cultural competences are registered” (Martin-Barbero, 1997, p. 290) [5]. Media will only make sense as far as their messages reflect themselves in society; otherwise any meaning eventually produced will be lost.

The discussion here presented takes that as a starting point to think the situation of popular class²⁸⁸ woman, who must be updated in matters regarding technology, being connected with a broader world, interacting, looking for information and solving practical daily life matters, like sending a fax or taking care of subscriptions and assignments using the Internet. The objective is to verify the reading this woman-receiver makes of the technological and communication apparatuses showed on television programs, in special in telenovelas, aiming to recognize the processes of re-appropriation regarding daily life and consumption habits. To verify the importance (reading / signification) of technology presence in the plots of telenovelas by this woman, what that implicates in her constitution as consumer and citizen.

2. The television fiction in multiple platforms

To study this production of meaning becomes more necessary regarding the outbreak of cultural forms that “are not based in a medium anymore, but in a set of media, in such a way that we have the same fiction products circulating among platforms. Phenomenon so-called ‘transmediation’, in which television, one of the most important divisions of media industry, is inserted by products like *Lost*, *Matrix*, the most famous” (Figuroa & Fechine, 2009, p. 353) [6].

In the scenery of Brazilian television fiction, in special telenovelas, the viewer got used to a multi-nuclear dynamic, with several plots happening at the same time, intertwined, different from the television dramaturgy from other countries. Thinking about convergence context from the point of view of transmedia, which “favors the involvement of the viewer not more with a movie or particular programs, but with broader fictional universes of which several platforms participate” (Figuroa & Fechine, 2009, p. 367) [6] the investigation here commented takes *Luciana's Dreams* blog as its object, a blog written by Luciana (Alinne Moraes), one of the main characters of the telenovela *Viver a Vida* (Rede Globo, Manoel Carlos, 2010). This blog is understood as a complementary narrative element of this television fiction work.

As Médola & Redondo (2009) [7] remember, the expansion of a medium content that stretches out for others have already happened in the context of telenovelas and TV maga-

288 Popular class refers to the group classified as class C and D. Average monthly familiar income: class C, R\$1062,00, class D, R\$580,00.

zines. In the context of production, this content interaction moves the press industry and, at the same time, makes the audience loyal, once it is already set as a culture of consumption. According to Figueroa & Fechine (2009, p. 359) [6], “transmediation comprehends cultural forms that have been conceived for circulating, operating from the logic of ‘co-creation’, operated by the possible ramifications of the proposed fictional universe”. Luciana’s blog may not function exactly as ‘co-creation’, or be characterized like part of a process of transmediation, but it enlarges the possibility of emission-reception interaction. For Figueroa & Fechine (2009) [6] transmediation means building

a multimodal narrative ‘world’, which is shown in multiple media, unfolding the original plot in different moments of time line, focusing new aspects or points of view, exploring secondary characters and/or the acting of the protagonists more complex from situations and environments typical of each technological platform.

In the context of the investigation here presented, the blog allows exploring the telenovela beyond the scenes shown on TV, stimulating a communicational game in which the fans interact actively, commenting what Luciana posts, joining forces in the difficult situations and fraternizing in the joys, in an interesting blurring of frontiers between fiction and reality. It becomes a space of reflection among the daily life tribulations, during which, hardly ever, we stop to think about what is really important for our relationships. I focus this investigation on reception, from the comments to the posts and also the access and interest showed by popular class women to the blog. Given the technical access, how much are these women interested in knowing and attending the blog? Or do we have different public for different platforms? Digital technology makes the interaction viewer-product really possible, an interaction “able to forge a new culture of consumption in which the participation of the audience in the creative processes of the plots is a central point” (Médola & Redondo, 2009, p. 146) [7]. Narratives made available by the blogs present situations that in a certain way make viewers think a little more about life, motivating them to expose thoughts and opinions, transforming a ‘passive’ audience, accustomed to keep for themselves their own impressions.

Working from a more polemic perspective, Wolton (2003, p. 87) [8] emphasizes that it is necessary “not to take new techniques as new culture”, remembering that the new platforms make cultural and languages expressions easier “but it is still too early to know if they will finally be an important cultural rupture”. What is produced in this environment crossed by technologies is a type of information that leads to “specialization of knowledge”, that “has been originated in a broader sociocultural change that, in approximately the last fifty years, led to a change in the reality representations” (Wolton, 2003, p. 91) [8]. This type of information has to be built, and for that the viewer-receiver needs competence, so that, the use of Internet goes beyond sending messages.

This way Wolton (2003, p. 95) [8] questions the access to new intelligence services that apparently “place the individual and the democracy in the center”, aiming to be a way of knowing reality and acting, being the real motive “more to the side of knowledge-action than to the side of democracy”. Resulting from that, “payment for information will be inseparable of these new services”, leading to the real risk “of developing a less democratic conception of information, based on the level of knowledge and financial capacity” (Wolton, 2003, p. 95) [8]. Reminding this study proposal, we must think about implications of stimulating a habit that, demanding a financial expenditure, can press even more the budget of the women of

popular classes, reinforcing the exclusion in a society that more and more has technology as subject of daily conversation.

3. Technology and consumption – a matter of gender

The matter of access and the relation of culture with new technology is inserted in this discussion from the point of view of consumption as “scenery of making wishes come true”, once consuming is part of the relation between subjects in the interpellation that makes us subjects, being also the place where meanings of distinction circulate and communicate, so that, there is, at the same time, exclusion and legitimacy (Martin-Barbero, 1995, p. 62) [9]. It is by means of consumption that several aspects of life in society get integrated, once it carries out appropriation and use of products, transforming “wishes in demands and in socially regulated acts”, “the wish of having ‘the new’ not acting like anything irrational or independent of the collective culture to which it belongs” (Garcia Canclini, 1996, pp. 59-60) [1].

In the context of understanding the relation technological development X cultural practices, an aspect that attracts attention are the differences derived from gender matters and the roles assumed by man and woman in the western society, “a fact survived along the years of industrialization in the XIX century in Great Britain, as it had been for centuries, perhaps millenniums, before” (Cockburn, 1994, p. 34) [10]. In feminist studies, in special in the 1970s, “the distance of women from the technologies ‘of the men’ was identified like an aspect of disadvantage for the women. There were attempts of helping women to exceed the barriers to gain knowledge and technical know-how among the liberation projects led by women’s contemporary movements” (Cockburn, 1994, p. 34) [10].

In the daily life in the domestic environment, the difference between the sexes regarding technology, even in the handling of a simple remote control (Morley, 1996) [11], brings us nearer to the interest of the study here presented that is the insertion of popular class woman, resident in the periphery of great urbane centers, with children at school age, in the context of technological and media convergence, from the point of view of reception of the telenovela *Viver a Vida* (Rede Globo, Manoel Carlos, 2010). I question this insertion thinking about the changes resulting from the enlargement of the communication networks, the emphasis on symbolic in social relations, understanding mass media as part of organization process of identity and meaning of citizenship, serving for incorporating popular classes in the hegemonic culture as Martin-Barbero (1997) [5] always reminds us, even if by market requirement. In the context of the individual, in the case of popular class woman, I take technological insertion also as a symbol, this understood as “instrument of social integration, while instrument of knowledge and communication, that makes consensus about the sense of social world possible, contributing fundamentally to the reproduction of social order” (Bourdieu, 2001, p. 9) [12].

Technological innovations represent, since ever, development and reason of distinction. In the macro context, they support argumentations for social cultural improvements, having been already served as a qualifying criterion of countries. In the micro context, the possession of high-tech equipments promotes differentiation and social distinction. But how does it happen regarding popular class women who face the most different difficulties - in the care of home, the family, herself - in a world that turns out to be more complex each day, demand-

ing knowledge and participation, be in the face to face communitarian relations, or in the technological communication environments.

How does this mediated communication happen, a kind of communication that each day associates television, computer, telephone, cell phone, Internet? A kind of communication that requires time: to speak, to read, to watch, to understand, everything demanding possession of equipments of individual use, besides the understanding of the technological process of convergence, for a better use of the available means. How does all this happen in the troubled day by day of women who have under their responsibility the household chores, the raising of the children and, as a rule, the financial support, total or partial, of the house?

4. Reception and meaning giving

Even in an environment of diversity of offer, the open channels television maintains an outstanding audience, no matter if in Brazil or in countries with populations with better financial conditions. "Cable TVs, followed by thematic channels, did not threaten the television general economy, which is organized into three unequal parts: a majority for the open channels television, cable services, multimedia" (Wolton, 2003, p. 61) [8]. From that I take television to understand the meanings produced by the reception of transmedia approaches, represented in the blog *Luciana's Dreams*, in *Viver a Vida*, by the popular class woman and what that implicates in the constitution of her identity, in her consumption practices.

The relevance of this understanding happens in the context Martin-Barbero (2004, p. 177) [13] reminds us of when talking about new technologies of communication and the impact in the societies and cultures of Latin America: about the necessary discussion on the relations between these technologies, cultures and identities, avoiding the idealism "that opposes technology to culture as substance is opposed to spirit" and also to the "concept of 'effect' that allows us, at the same time, to break up the social thing into isolated meaning pieces and then recombine, metaphysically, without openings or conflicts".

Médola & Redondo (2009, p. 146) [7] talk about "the creation of new spaces of communication and socialization" departing from digital networks and how this is reflected in the communication flows and ways of production, distribution and consumption of analogical based platforms.

The perspective of total convergence already mobilizes producers and receivers of television fiction motivating new media in the Brazilian scenery. The viewers are called to act out some kind of participation in the programs, establishing new levels of dialog between transmitter and receiver. (Médola & Redondo, 2009, p. 149) [7].

"The digital participation of the viewer is changing: of sequential activities (watch and then, interact) for simultaneous, however separate activities (interact while watch), for a combined experience (watch and interact in the same environment)" (Murray apud Médola & Redondo, 2009, p. 150) [7]. Is the popular class woman keeping up with this change, this woman who is one of the biggest publics of television dramaturgy?

This woman-viewer is also a consumer that is "subject" who participates of a cultural economical context that includes by consumption, values by appearance and excludes by denial

of access. A kind of participation that demands a continuous work of identities constitution, more and more broken up and transitory, that must reply to multiple necessities of social living, professional achievement, emotional identification, that are renewed at each moment.

Castells (2008, p. 27) [14] says what, under the conditions of the network society that brings to light the identity construction processes during the late modernity, this way including new forms of social transformation, "the civil societies are shrugged and dislocated, once there is not continuity between the logic of creation of power in the global network and the logic of association and representation in societies and specific cultures any more". How much do popular class women participate of this society? Adding, the focus regarding popular classes is justified by the emergence of these groups in the consumption context of the country, having begun with the economic plan "Real" (year 1996) and emphasized with the economical stability lived in the country in the most recent years (year 2005 on).

Slater (2002, p. 18) [15] presents the culture of consumption as "a system in which consumption is dominated by goods consumption, and where cultural reproduction is generally understood as something to be carried out through exercise of personal free-judgment in the private sphere of daily life". This "private sphere of daily life" consists of "actions and expressions loaded with meanings built by the individuals themselves, the ones who are producing, recognizing and interpreting them, in the course of their lives and culture of consumption as a social agreement, mediated by the market", these actions responsible for defining a culture (Martin-Barbero, 1997, p. 193) [5]. It is just from this angle that I think the insertion of popular class woman in the context of technological and media convergence, here thought from the analysis of the comments to the posts of *Luciana's Dreams* blog.

Viver a Vida was transmitted from September/14th/ 2009 to May/14th/2010, being the blog published from February/8th till May /5th of 2010,²⁸⁹ inserted in the plot as a way of helping Luciana's recuperation, one of the main characters, who played a top-model made tetraplegic after a car accident. There were 85 days of post publishing, receiving a total of 12716 comments. For the discussion here presented, I work with 10 days of posts, selected randomly, taking care of including the first and the last day of postage.

The studies on mass media recognize more and more the opaqueness of the speech set up between production and emission in the text polyssemy, in the process of active reception, in the intertextuality and in the role of mass communication mediation in society. Later on, in the continuity of the project, understanding that communication is a process, I will analyze scenes that show the use of technological and communication apparatus, beyond the accomplishment of focal groups with popular class women, interpreting their words in the intersection with the emission speeches. The interest in a current fact, the constitution of consumption habits, reinforces the necessity of a less structured technique of data collecting, which allows us to get as near as possible to the real life situations. The objective is to go beyond the registration of apparent characteristics, trying, through the analysis of the speech of the subjects and intersection with the media speeches, to reveal the dynamic nature of the relation between the appearance and the essence of the phenomenon, trying to understand in details the meanings and characteristics of situations presented by the interviewed women.

The broader objective is to verify the expression of what gives meaning to these women's life, according to Martin-Barbero (2006, p. 65) [16] who believes that it is in the dialog and in the exchange that the identity is built and not in the "fact of being agglutinated in a group

– as in the society of chastes”. In the same thought line, Baccega (1998) [17] remembers that the subject is present in the “emission” as well in the “reception” and that his/her subjectivity is a result of the discursive materiality that is established in his/her daily life. In this process the individual / subject is constituted, who, yet referring to Baccega, carries the specifications of the being as well as the speeches of the society of which he/she is part.

In the reception studies, we are interested in the text that begins in the word of the producer / transmitter and is decodified/transcodified in the word of the receiver. In the perspective of the language studies, the meanings are products of the social interaction where the word becomes concrete, the world only getting meaning by the words recognized in this social interaction. Regarding consumption, it always begins with language. That product that will be consumed is a sign and, in the context of the Garcia Canclini’s thought, we consume like a process of belonging.

Wolton (2003, p. 83) [8] states that television and, generally talking, radio and press depend on a logic of offer, while the new media depend on a logic of demand. In order that this demand takes place, yet according to Wolton, the psychological dimensions are essential, since these technologies fulfill a need originated in the deep movement of individualization of our society that, on its turn, is connected with aspects of “autonomy, power and speed”.

According to McLuhan (1995, p. 390-391) [18], “our central nervous system is not only an electric network [...] it constitutes the only and unified field of the experience. [...] Automation is a way of thinking as well as a way of doing”. According to Bakhtin (1999, p. 112) [19], “it is not so much the expression that adapts itself to our inner world, but our inner world that is adapted to the possibilities of our expression”. Referring to the problematic here discussed, the enlargement of interaction possibilities by technology can result in new means of expression, to which “our inner world” is going to have opportunity for being adapted, turning into new cognitions.

Citing Bakhtin (1999) [19] yet, in order that something acquires meaning, be important and part of people’s life, it is necessary to be understandable and present in the daily life, being there the place where the meaning of the words is established, from the circulation of symbolic forms, allowed by the possible conscience, result of ideology, which is impregnated, on its turn, by stereotypes and prejudices. The environment resulted constitutes our “social stock”, from where we extract the words as signs, that comes true in the concrete enunciation completely determined by the social relations. Media is part of the contemporary social stock, that in an environment more and more technological, characterized by interactivity, becomes a forum of intersection not only of opinions but of relations and perceptions of the world and about the world.

5. Preliminary results – blog coments’ profile

The first questions to be answered, before starting a deeper investigation with the women-viewers about the presence of new technologies in telenovelas and the transmedia possibilities, concern to a profile of the comments to the posts: which are the subjects of interest of the users of the blog? What is the focus of the comments to the posts? What relation do these comments have with people’s daily life?

In terms of the users’ social-demographic profiles, in the nearly 476 selected comments,

only 16 were posted by (declared) men, and 14 by children between 6 and 12 years. From the writing style, or lack of, we can say that the majority are young women, using vocabulary and forms of writing we generally see in emails, SMS; and of low education level, having in mind the quantity of mistakes on spelling.²⁹⁰ Besides, some comments, around five, are made by professionals related to the problem faced by the character: physiotherapists, psychologists.

A quick reading of the comments to the posts shows us that the narratives resulting from technological convergence are not a continuation or enlargement of the televised plots; on the contrary, they are reports of daily life situations, new narratives about personal stories. In the 85 days of posts, the principal subjects chosen by the character were: “love”, “marriage”, “people whom I love”, “prejudice”, “thoughts” and “poetries”. The comments to the posts are concentrated on aspects of the emotional life of the character: everybody wants her to be married with her doctor, Miguel (Mateus Solano, who also interprets Jorge, the twin brother), but always emphasizing the hope of her re-establishment, hoping that she returns to fashion parades. The great presence of young people is shown in comments related to the photos posted and to the parties that happen in the story.

“Lu eu adorei suas fotos ... digna de uma verdadeira modelo, eu estou adorando sua superação. [...] Vi suas fotos, são maravilhosas. Continuo achando vc linda. [...] Essas fotos suas na cadeira de rodas ficaram maravilhosas, com certeza servira (sic) para incentivar pessoas que estão passando por problemas parecidos com os seus [...] Lu, você arrasou nessas fotos... Ficou muito linda, tenho certeza que você terá muito sucesso se voltar a ser modelo”²⁹¹.

When commenting the use of the new ways to tell histories, Murray (2003) [20] reports experiences with the holodeck shown in fiction movies (*Star Trek*) calling our attention for the way one of the characters (Captain Janeway) enjoys the mirage in the holodeck, even knowing that it is a holography. Reading the comments to the posts in Luciana’s blog, we have a similar situation. It seems to us that the interlocutors of the blog forget that Luciana is a fiction character. Like commented by Murray (2003) [20] in relation to holodeck, in the blog people express feelings that perhaps they would not expose in routine conversations, tell personal stories, wish a quick recuperation to Luciana, and greet her for her courage and eagerness. The blog as an element of approximation of reality changes the comprehension people have of the televised narrative. In the blog, Luciana is real. In the telenovela, she is a character, but in the blog she is a ‘reality’ with which the persons interact.

“[...]Eu fiquei tetraplégica há alguns meses. Antes de ficar eu nem sabia o que era isso. Eu praticamente não tenho mais amigos. Eu me sinto tão só, a minha única companhia de verdade são minhas cachorrinhas, com elas sim eu me sinto feliz, eu sei que elas não me vêm de outra forma. [...] É impressionante! Como mesmo tetraplégica ter este talento que vc tem! Não mudou nada. Vc continua LINDA, TALENTOSA, CHARMOSA ... Lu não pare com a sua carreira, porque vc continua a mesma coisa. [...] Essa semana cai em depressão ... pensei q minha vida não tinha futuro por causa da minha deficiência, que nunca fosse encontrar uma pessoa q ia me amar como sou q ia me aceitar como sou e etc.

290 The transcriptions of comments presented ahead were partially corrected in order to make them easier to understand.

291 Factual words in the comments to the posts.

Mas ontem vendo vc recebendo convite de casamento do Miguel eu falei pra mim mesmo ... um dia vai chegar minha hora n sei quando mais vai chegar e serei muito feliz... [...] Oi Lú, parabens pelo seu papel. Muitas pessoas deficientes, que se achavam incapazes de buscar seus sonhos, hoje pensam de outra forma, porque vc entrou na casa de cada um passando a mensagem direitinho. [...] Sei o que vc passou pois ja sofri tb um acidente ã tão grave qto o seu pois eu quebrei o pé mas, fiquei de cadeiras de rodas durante uns 3 meses e muletas por quase um ano, ainda por cima tive que trancar a faculdade e inúmeras sessões de fisioterapias. ... Engraçado eu tb me apaixonei pelo meu fisioterapeuta só que só ficamos juntos durante 3 meses 'em off' pois meu pai é ciumentíssimo, mais que o Marcos, seu pai”.

Taking the televised chapter as a starting point, or even the posts in the blog, relations are opened. Answering to the moments of difficulty of the character, the users try to console her. Perhaps as they would do to a close friend, leading us to think, together with Meyrowitz (apud Buonanno, 2004, p. 343) [21] on a new category of relationship - the “mediated friends”?

the interactions that the members of the audience maintain with the personalities of the media [...] These assiduous, not rarely daily meetings, can produce in the audience a feeling of familiarity and even affectionate attachment with the television characters; the impression is that we know them intimately, talk to them by the thought and consult them aloud.

“Adorei a iniciativa de expandir seus sentimentos para todos nós, é formidável conviver com pessoas como você, que sempre nos ensina que viver a vida é saber lidar com as dificuldades de modo otimista. [...] manda um bjão pra Tereza ã esqueça tahh. um grande abraço... Oi Lu,vc esta sendo um exemplo para pessoas cadeirantes como você. [...] Não fique triste. A Ingrid é uma boba e não conhece o amor. [...]por mais que sua sogra tenha preconceitos com (sic) pessoas, não fique triste pois seu amor com Miguelito é maior e vc deve mostrar pra ela que mesmo vc sendo cadeirante não te impede de viver a vida. Viva este grande amor e deixa o sua sogra pra lá!”

In this exploratory analysis of the comments, it is possible to verify that the viewers of the telenovela follow the posts in the blog, they make the blog a space of dialog that unfolds beyond the plots presented daily. From the development of the plot, the most recent chapter, or not, the readers / users access the blog to talk with the character, expressing feelings, commenting the story events, relating them to the real, daily life. The blog is re-appropriated as a talking space, a place to exchange ideas, an intimate living room, perhaps filling out a necessity that is not satisfied with the real relationships, in the daily life. Some users even ask Luciana to return their comments.

The relation with the posts happens as a result of identification with the situation lived by the character, either because of an identical physical condition, or because the imagined model life, a life pointed by success, like the character had before the accident, or because the solidarity to a human being who is going through a difficult moment, maybe the most obvious motif, but perhaps the most relevant one if we remember that this solidarity answers to a fictional situation.

That reinforces what we know about the importance of resemblance regarding the rela-

tion of the reader / receiver with fiction, which “depends on the possibility of existence of a fictitious being, the character is the realization of a lively being. In order *to be*, the character must make lively a real being, communicate an impression of an existential truth” (Candido, 1985, p. 55) [22]. We can, then, think that the trajectory of Luciana, from the accident to the relative recuperation, in a certain way “quick”, having in mind the consequences and sequels of an accident like the one she had, it was accepted by the detailed way the process was shown. The access to material resources, in the case, represented the instrument of recuperation / overcoming, that, in another story, perhaps it could be the religious faith, or another element, that would allow accepting as possible a development from the almost total paralysis to the twins’ gestation, in a very short period of time.

6. Final considerations

For a long time, fiction has been thought, in special telenovelas, as a space of *escapism*, a stereotyped product aiming the women. Telenovela was *only* a dramatization of the daily life, this understood as something *less noble* of life in society. However, more and more we notice that the daily televised fictional narratives are part of daily routine/life. As we face structural and institutional changes, which multiply the signification and cultural representation systems, confronting us to a multiplicity of identities possibilities, greater are the necessities of parameters for identification (Hall, 2006, p. 10-13) [23]. Although temporary, television, in the format of fiction, turns out to be one of these parameters, mainly for people with limited access to cultural assets and a lack of experience diversity, as we notice in the comments made by women living in great urbane centers with scarce financial resources, or in very small, far away cities, with structural deficiencies that make this access difficult— cities in the North, Northeast of the country, or in the countryside.

Media promote extensions of the man. The interaction between viewers and characters has always existed. Even today, letters are sent to the specialized magazines, the gossip magazines, but the blog technology enlarged this interaction, subverting even more the relation fiction-reality. What is published in the blog is not necessarily transmitted on the television product, but it is a part of it, it comes from it and there it returns, promoting new ways of understanding the story. The blog is a channel of communication that becomes a message when used to exchange experiences, daily life narratives, between Luciana, taken in as a *real person*, and the audience.

The *mean message*, the blog message, are the changes resulted from the enlargement or acceleration of the already existing processes (McLuhan, 1995, p. 22) [18]. The message of the blog is the approximation between fiction and reality, filling out a necessity of identification each day more present in the complex and broken up life in the great cities, in the late modernity. The blog transforms the television message, promoting a different way of being aware and conscious of our human being existence and, mainly, of our relationships, our role in society. No matter if this awareness is liquid, or placed in the blurred frontier between fiction and reality.

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The Global Big Bang

L.I.N.K. FACULTY

Understanding Connections, Making Connections

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Introduction

This paper is intended to provide comments on the high-strength connection between media and cultural shifts in ways of thinking and worldviews. I focus especially on new media, *linking thinking*, and systemic worldviews as three related aspects of the cultural shift that seem fair to expect from global society of this century. In addition, I make some concrete suggestions for spreading philosophical perspectives and cultural paradigms that can help us to overcome contemporary crises.

A recent study (Millennium Ecosystem Assessment 2005a) found that ecosystem services are deeply linked with components of human well-being that are commonly encountered. Nevertheless, it is not easy to perceive that everyone of us depends on nature for the conditions of a *good life*. Hence, the changes humans have made to ecosystems in the last decades to improve and globalize the Western standard of life caused an ecological crisis, which implies biological and social crises. Indeed, these unprecedented changes have weakened nature's ability to deliver key services related to the flourishing of life on the planet and jeopardized the achievement of social goals such as reducing poverty, hunger, and disease (Millennium Ecosystem Assessment 2005b).

The global Big Bang represents one of the most relevant aspects of the human involvement in planet crises, but not the key one. Physicist and systemic thinker Fritjof Capra (1982) points out that all these crises are only symptoms of the worldview crisis derived from the foremost thinking crisis of the Western civilization. Hence, in order to handle all the problems that are now coming to a head from the out-of-date *anthropocentric* cultural paradigm, we need to adopt a different worldview and think in a different way (Capra 1982). We cannot solve contemporary crises with the same paradigm we used when we created them. Given these arguments, Capra (1982) claims that if societies will assume a new systemic cultural paradigm, then the resolving consequences will come, in all areas.

I argue that, in order to realize the cultural shift advocated by Capra and many others systemic thinkers, we have to highlight that the media by which we produce and share our thoughts are strongly linked with our thinking and worldviews. 'Societies have always been shaped more by the nature of the media by which men communicate than by the content of the communication' was one of the most important statement in Marshall McLuhan's book *The Medium is the Massage* (1967, p.8). In addition, the economist Jeremy Rifkin (2010) claims that every historical state of Western culture is always characterized by a specific restructuring of the ways we communicate and of the media of communication. In other words, the way in which we understand and organize reality and the kind of linguistic metaphors we use to

describe it are dependent on the media we use to communicate and are also deeply related to cultural shifts. In light of these statements, I claim that first of all we need a medium shift: in order to perceive ourselves as part of the *web of life* we need to comprehend nature through the fulfillment of an ecological *web of knowledge*.

Among new media of communication, Ted Nelson (1992) highlights several elements of hypertext that describe this system as particularly suited to pursue the aim I suggested. The non-linear and non-sequential structure of the open, interactive, collective and cooperative World Wide Web (Nelson 1992) already offers efficient writing and learning systems based on the network pattern. I argue that through the use of hypertext systems it is easier to *understand* nature connections and, therefore, *make* new vital connections. I claim that by using hypertext systems humans can develop or strengthen the faculty to think through linking underlying aspects of a real well-being, such as life needs, several fields of knowledge, nature services, and technological innovations capabilities and aims. I call this faculty L.I.N.K. (Life, Innovation, Nature, Knowledge) and I argue that this new way of *linking thinking* supported by new media is strongly related to a new systemic worldview more suitable for helping us in changing our attitudes.

The paper has the following structure. In section 1, I explicate the connections between nature well-being and human well-being. In section 2, I show how contemporary crises depend on the old cultural paradigms' inability to understand these complex connections, and I also explain the reason why we need to change the way we think in order to change our worldview. In section 3, I argue that thinking changes are deeply influenced by media changes and point out how hypertext systems can now answer the need for a new media. Lastly, in section 4, I provide suggestions – especially to the social movements involved with the cultural change – to use the World Wide Web to facilitate the spreading of the L.I.N.K. faculty and the systemic approach to reality.

1. Global crisis, planet crisis

The Millennium Ecosystem Assessment (MA) is an international report that cost 24 million US dollars and involved the work of more than 1,360 leading scientists worldwide. Initiated in 2001 with the support of the UN, the objective of the MA was to evaluate the consequences of ecosystems changes for human well-being and to develop future scenarios, based on detected trends. Their findings, contained in five technical volumes and six synthesis reports, also provide the options to restore, conserve or enhance the sustainable use of ecosystems.

It has to be pointed out that the term 'ecosystem' indicates a part of nature which is dynamic and dynamically linked to other parts of the biosphere. Talking about ecosystems (plural) is therefore equivalent to talk about nature. In fact, an ecosystem is a natural open system which is always interconnected with other open systems (other ecosystems). Each ecosystem is composed of a set of living communities (biotic component); a specific physical-chemical environment in which they are located (abiotic component); and the mutual relations that exist between living organisms and between them and the environment (Odum, EP & Barrett, GW 2005). These networks of networks of relationships tend to preserve over time a state of homeostasis (given by a continuous exchange of matter and energy), which helps in maintaining the dynamic equilibrium essential to keeping alive the *natural system* (Odum, EP &

Barrett, GW 2005) – and humans, as well.

The MA is the first attempt by the scientific community to describe and evaluate on a global scale the full range of services that derive from nature. It has been able to provide a health check on 24 of these services, divided into four broad groups (Millennium Ecosystem Assessment 2005a, pp. VI-VII). The support group of services (nutrient cycling, soil formation, primary production, etc.) is essential for the proper functioning of all the other groups, and is also directly connected with biodiversity (biological variability of genes, species and habitats) on Earth. The other three identified groups of ecosystems services are provisioning services (food, fresh water, wood and fiber, fuel, etc.); regulating services (climate regulation, flood regulation, disease regulation, water purification, etc.); and cultural services (aesthetic, spiritual, educational, recreational, etc.). In fact, the MA (2005a, pp. VI-VII) shows that all our basic needs, such as security (personal safety, secure resource access, security from disasters, etc.); basic material for good life (adequate livelihoods, sufficient nutritious food, shelter, access to goods, etc.); health (strength; feeling well; access to clean air and water; etc.); and good social relations (social cohesion, mutual respect, ability to help others, etc.) are more or less directly and more or less strongly dependent on these four (plus one, considering biodiversity) nature services. In other words, not only our well-being depends on nature well-being: it is our own freedom of choice and action ('the opportunity to be able to achieve what an individual values doing and being') which can be traced back to nature (Millennium Ecosystem Assessment 2005a, pp. VI-VII).

However, the findings (published in 2005, after a four-year work) show a serious damage of the ecosystems balance directly related with the human activities (Millennium Ecosystem Assessment 2005a, pp. 26-48). They argue that we are consuming beyond repair the natural resources and highlight that the consequences of this degradation will also increase significantly over the next 50 years. If we consider the cited MA statement on the connections between nature well-being and human well-being, it is easy to understand that we are living in an age of crises just because the ecological crisis implies biological and social crises. Therefore, these crises involve both our primary and secondary needs, and I claim that they are mostly dependent on our inability to *understand* life-nature connections and to *make* new knowledge-technology connections.

The human history is interwoven with the natural history. The development of human societies has been a story of changing the ecosystems to sustain ever-more sophisticated demands of comfort and well-being of a growing number of people (Millennium Ecosystem Assessment 2005b, p. 11). The MA (2005b, p. 6) focuses the problem claiming that 'as human societies become more and more complex and technologically advanced, it is easy to gain the impression that we no longer depend on natural systems'. An increasing percentage of population lives in cities, which are environments dominated by human-built structures and technologies. Nature appears to be something nice to enjoy but not at the forefront of our daily concerns. Even the conservation and preservation of natural spaces are often seen as unlinked with human well-being: the construction and maintenance of parks and reserves are considered useful only to protect the *natural beauty* or maintain *clean our home*. The MA (2005b, p. 6) claims that these are all dangerous illusions that ignore the vast benefits of nature to the human and non-human life: 'we may have distanced ourselves from nature, but we rely completely on the services it delivers'.

Today's knowledge and technology are already able to reduce the human impact on ecosystems significantly and, at the same time, to meet the growing needs for food and other

primary services. We already have the means to handle contemporary crises. Better protection of nature requires coordinated efforts across all the sections of governments, businesses, and international institutions; however the major need is to change our perception of life and nature (Millennium Ecosystem Assessment 2005b, p. 6). The MA (2005b) remarks that such knowledge and technology changes are unlikely to be achieved fully unless we start to put 'nature at the center' of our worldview. It follows that first of all we need to consider the full value of life-nature interconnections through a better understanding of the *web of life*.

2. Cultural paradigms, worldviews and ways of thinking

Systemic thinker Fritjof Capra (1982) claims that the current Western cultural paradigm inability to solve global and planet crises demonstrates that it has reached its limits. In his books he argues consequently that we are moving on the direction of a deep-seated cultural change. Capra (1992, p.6) defines a cultural paradigm as 'a constellation of concepts, values, perceptions and practices shared by a community, which forms a particular vision of reality that is the basis of the way a community organizes itself'. In other words, cultural paradigm contains both the explicit and implicit premises of our *thoughts* and *actions*. It follows that in order to change our worldview we need to change the way we think.

In my recent work (2011) I identify three dominant paradigms in the history of Western civilization and I remark on their different worldviews. Firstly, the *hierocentric* paradigm of primitive civilizations, which puts at the center of its worldview a holy spirit (Greek *hieros* means sacred). Émile Durkheim (1912) describes this sacred essence as something which is perceived as spread throughout the natural world, giving a primeval sense of mutual belonging of humans to life and life to nature. Secondly, the *theocentric* paradigm of the agricultural-hydraulic civilizations, which puts God at the center of its worldview. According to Thomas Hobbes (1651), Baruch Spinoza (1670) e David Hume (1757) readings of this paradigm, God is perceived as an authority detached from the world, who founds reality and establishes moral laws and human goals. Thirdly, the industrialized civilizations' *anthropocentric* paradigm, which puts mankind at the center of the worldview. In this perspective, humans represent the pinnacle of evolution and the yardstick for evaluating all life: we are the natural guardians, or even owners, of the Earth. The implicit bases of this paradigm are leading our culture even nowadays.

Arnold Gehlen (1957) highlights that superstition and religion were the knowledge base of *hierocentric* and *theocentric* societies: they were unable to understand how dependent we are from nature, but their tools and technics were not so invasive to seriously damage ecosystems. Throughout history, science and technology have become increasingly predominant in our culture, but also over-sectorialized, and therefore unable to understand the existing links between humans, life, and nature (Gehlen 1957). Thanks to industrial development, Western societies rapidly proclaimed themselves masters of nature, but as much rapidly they have started to deeply damage ecosystems services. Moreover, we have started to put at the center of our perspective our own values (such as *economic development* and *technological progress*), considered as advanced and fairest. In the era of globalization, this concerning derivation of the *anthropocentric* paradigm, which can be named *ethnocentric*, has probably become the main reason for contemporary crises.

Capra (1982) shows that our paradigm is mainly based on some outdated seventeenth century beliefs, such as the analytical dualism of Descartes; the Bacon's hierarchic view of the relationships between humans and nature; and the Newtonian mechanistic approach to reality. Hence, it offers a limited view on our well-being, disconnected from nature well-being and therefore based, after the industrial revolution, on the economic and technological wrong reading of the concepts of *development* and *progress* – now even globalized. These obsolete interpretations have led us to live in this age of crisis just because the *anthropocentric* and *ethnocentric* way of thinking is still unable to understand the complex system nature in which we are integrated (Capra 1982).

On the other hand, a new paradigm is now emerging from the systemic theories, and it seems fit for the purpose of helping us to tackle contemporary crises. The new paradigm can be defined *ecocentric* or *biocentric*, because it puts ecosystems interconnections and holistic view of life at the center of a renewed worldview (Andreozzi 2011). Capra (1996) highlights that its systemic and ecological approach emphasize more on the whole nature than on its living or non-living parts – more on processes than on structures. Furthermore, it requires a *new way of thinking*, from which consequentially derive *new human behaviors*. One of the most significant systemic thinkers' claims is that in order to perceive reality as a network in which parts are merely patterns in an inseparable web of relationships, we need an interconnected network of knowledge able to represent the observed phenomena (Capra 1992). In other words, in order to shift to an *ecocentric* or *biocentric* cultural paradigm and adopt a systemic and ecological worldview, first of all we need to think in a collective, interactive and cooperative way, highlighting underlying nature interconnections and links between human and ecosystems well-being. Therefore, humans have to develop or strengthen a *linking thinking* faculty now trapped in the *linear thinking* of the reductionist and analytical *anthropocentric* culture.

A recent WWF study (2005) sets '*linkingthinking*' aspects apart from '*boxed-thinking*' ones. In short, the Western dominant '*boxed-thinking*' faculty is linear and exclusively rational; focuses on egos; believes both in objective knowledge and in the power of delimited problem-solving approaches; tries to understand a complex whole by looking at the detail; considers most issues and events as fundamentally separated; does not consider emergent properties; defines concepts by separations and oppositions; and wants to keep the control (or even the possession) of everything (Sterling 2005, pp. 13-14). On the other hand, the emerging '*linkingthinking*' faculty related to the systemic and ecological worldview tries to balance linear rational aspects with non-linear intuition aspects (balancing our left brain with our right brain); focuses on relationships; believes both in epistemic knowledge and in problem-solving approaches that cares to develop solutions that generate further solutions; tries to put the complex whole in a larger context; considers issues and events as connected parts of an interrelated reality; considers the significant role of emergent properties; considers the so-called opposites in relationship; and is more flexible, accepting uncertainty, and not trying to control (or possess) everything (Sterling 2005, pp. 15-16). The WWF study (2005) confirms that the '*linkingthinking*' faculty is the key of the spreading of the systemic and ecological worldview. Therefore, it represents also the main aspect of the final fulfillment of cultural changes which the Western anthropocentric civilization has to do to handle ecological and social crises of our century

As a matter of fact, the demand to start thinking in an ecological, collective, interactive, cooperative, and linking way has become even more widely shared in recent decades. I sug-

gest exploring these demands outlining at least three perspectives: *theoretical*, *ethical*, and *operational*. From a *theoretical* perspective Gregory Bateson (1972) writes about 'ecology of mind'. He (1972, p. 13) states that 'such matters as the bilateral symmetry of an animal, the patterned arrangement of leaves in a plant, the escalation of an armaments race, the processes of courtship, the nature of play, the grammar of a sentence, the mystery of biological evolution, and the contemporary crises in man's relationship to him environment, can only be understood in terms of such an ecology of ideas'. From an *ethical* perspective, Daniel Goleman (2009) writes about 'ecological intelligence' to mean the faculty to better adapt ourselves to the world we live in through thinking connecting human actions to the chain of environmental consequences that are implied in them. From an *operational* perspective Pierre Lévy (1994) and Derrick de Kerckhove (1997) write about 'collective intelligence' and 'connective intelligence'. Lévy (1994) highlights that knowledge, which is always a 'distributed knowledge', is enhanced by the new communication technologies that aid a better cooperation between users. On the other hand, De Kerckhove (1997) points out that the World Wide Web network, through its interaction and interconnection potentialities, is the new media most suitable form to foster better connection between contents.

Considering these three aspects (*theoretical*, *ethical*, and *operational*) in light of all the arguments given in this section on the new way of thinking, I suggest naming the *linking thinking* faculty on the whole L.I.N.K. (Life, Innovation, Nature, Knowledge). The acronym wants to represent, through the use of a single term, the need to go over the rationalistic, egoistic, dualistic and reductionist view of reality and change our attitudes using new media innovations to think connecting elements of the ecosystem nature now felt as separated from life and culture, as well as linking several branches of knowledge now seen as disconnected and distant from each other. In short, I claim that the L.I.N.K. is the thinking faculty given by new media systems such as hypertext to *produce* an ecological network of knowledge; to *understand* the connections between human well-being and nature well-being; to *develop* innovative technologies for sustainable living; to *spread* the systemic and ecological worldview; to *change* our cultural paradigm; and finally to *handle* contemporary crises.

3. Thinking changes, media changes

The human thinking process is not only a neurobiological process based on the dynamic architecture of brain tissue and the chemical and the electrical activity of neurons. It is also a personal and contextual experience in which we transform a set of signs carried by a medium within a specific contextual meaning into a network of interrelated and evolving meanings or, vice versa, we use a medium to communicate our thoughts. It follows that, in order to argue about thinking changes, it necessary to consider the relationship between our thoughts and the media we use to communicate. Moreover, Marshall McLuhan (1967, p. 8) claims that 'it is impossible to understand social and cultural changes without a knowledge of the workings of media'. Hence, understanding cultures, worldviews and way of thinking changes require an inquiry on how the various forms of media influence societies.

In his books McLuhan highlights three medium features. Firstly, it is an *extension* of our physic of physical faculties (McLuhan 1964). He (1967, p. 41) argues that the way we perceive the world, as well as the way we think and act, is directly related to the media extensions

we use to communicate: 'when these ratios change, men change'. Secondly, every medium is a different *message*, because the form is so merged with the content to even transform it (McLuhan 1967). It follows that changing media means changing information. Finally, it is a *massage*, because it influences human sensorium by massaging ourselves (McLuhan 1967). In fact, McLuhan (1967, p. 26) claims that media work us over completely: 'they are so pervasive in their personal, political, economic, aesthetic, psychological, moral, ethical, and social consequences that they leave no part of us untouched, unaffected, unaltered'. In summary, media of communication are essential instruments to understand the world that *inform* and meanwhile *transform* both messages and humans. It follows that different *media* offer different ways of organizing *knowledge*, thus different ways of *thinking*, and then different ways of *understanding* the world.

Walter J. Ong (1982) argues that each media of communication dominance transition is always related to a deep anthropological transformation. For example, in the transition from orality to literacy, the new way of organizing knowledge, from mnemonic poems to the written texts, has freed the mind, giving us the opportunity to make more abstract and original thoughts, which have shaped, or at least facilitated, the scientific and technological progress of humanity (Ong 1982). In other words, many apparently obvious aspects of the *anthropocentric* Western way of thinking depend on the new resources available thanks to the technology of writing. Furthermore, McLuhan's longtime associate Derrick de Kerckhove (1991) affirms that each dominant medium entails at least two revolutions. The first one happens inside ourselves and affects the way we think, because we are constantly interpreted in accordance with our own interpretations. The second one takes place in the world, because the way we perceive it depends on how we are able to think it *works*. In agreement with the Ong's and de Kerckhove's claims, I argue that in order to use the L.I.N.K. faculty to change our cultural paradigm we need, first of all, a medium shift.

De Kerckhove (1991) refers to the different ways in which communication techniques and technologies have shaped interpretations of the human mind, worldviews and societies over the ages, naming them 'brainframes'. He (1991) outlines three different 'brainframes': firstly, the 'alphabetic brainframe' (the alphabet) is the most shaping Western culture way to approach the world, because its adoption of the left-to-right handwriting implies an analytical, sequential, and rational experience of reality; secondly, the 'video brainframe' (the television) requires intuitive understanding and corporal 'sub-muscular' responses, and therefore generates mass culture by allowing neither time nor opportunity to assimilate and reprocess information in personal ways; finally, the 'cybernetic brainframe' (the personal computer) is an interactive based frame that allows us to be not only sequential information and standardized image consumers, but also producers of a new collaborative and connective *global knowledge network*. According to these remarks, I state that personal computers and Internet have offered us the opportunity to use L.I.N.K. to better comprehend humans-life-nature connections through the fulfillment of a *web of knowledge* that is more suitable to represent the *web of life*.

The non-linear and non-sequential structure of the open, interactive, collective and cooperative World Wide Web description offered by Ted Nelson (1992) shows that hypertext media already offer efficient writing and learning systems based on the network pattern. This evidence suggests that electronic hypertext systems are already suitable to help us in changing our cultural paradigm through a cooperative use of the L.I.N.K. faculty. Further support to this claim comes from Jeremy Rifkin (2010), who directly connects each historical state

of Western culture to the use of a specific medium of communication and suggests using World Wide Web to evolve our cultural consciousness. As I (2011) suggest outlining *hierocentric*, *theocentric*, *anthropocentric-ethnocentric* and *biocentric-ecocentric* cultures, Rifkin (2010) outlines *mythological*, *theological*, *ideological-psychological-dramaturgical*, and *biospherical* cultures. He (2010) argues that oral cultures nurtured a 'mythological consciousness', script cultures a 'theological consciousness', and print cultures raised a mainly *anthropocentric* 'ideological consciousness'. However, our electronic and digital culture evolved a 'psychological and dramaturgical consciousness' which offered new ways to conceive our own identities and inter-relationships and to spread our empathy to fulfill the new upcoming 'biospherical consciousness' of the globalized *biocentric-ecocentric* culture (Rifkin 2010).

Tracking back these passages to the arguments given in the previous sections, I suggest that the use of the World Wide Web hypertext as the new dominant media of communication can help us to tackle contemporary crises. A possible framework of what might happen after the achievement of the social transition to a hyperlink culture will probably involve Internet reduced distances between humans and augmented reality (AR) improved relationships between humans and reality. In fact, through the use of mobile phones, tablets, netbooks, and notebooks, and thanks to even more widespread Wi-Fi, 3G, and WAP connections, it might be easier to share or dispute information from all around the world and to perceive underlying aspects of our daily life (such as ecosystems relationships of nature elements and environmental impacts of products we commonly encounter). It follows that it might be easier to handle problems developing solutions that will not generate further problems.

Furthermore, a hyperlink culture will imply a new *linking way* of thinking and a *networked view* of reality, which are essential aspects of the L.I.N.K. faculty as I previously described it. I argue that focusing on developing or strengthening L.I.N.K. faculty since it now gives us the opportunity to fulfill sustainable societies in which people use non-linear intuition to put their own needs and desires in an even more larger complex whole. In light of this remark, in the next section I will provide suggestions to the social movements adopting systemic and ecological approaches on how to use the World Wide Web to share their views and promote their intentions in a more effective way.

4. Internet waves, social waves

Deep ecology is a social and philosophical movement founded by the Norwegian philosopher Arne Næss in 1973 (Næss 1973). In agreement with cultural needs showed in previous sections, it is based on systemic approach and claims to recognize the interdependent nature of human and non-human life as well as the importance of the ecosystem and natural processes (Næss 1976). Furthermore, the main aim of *deep ecology* is to change the Western cultural paradigm through changing both rationally and intuitively our *anthropocentric* worldview. The relevance of this movement is shown by the fact that in the last decades it has provided foundation for most of the environmental, ecology and green movements involved in the desirable cultural change. However, I claim that *deep ecology* and the other movements still have to recognize completely, according to McLuhan's works, that cultural and worldview changes requires thinking and media changes. In the latter section I showed how today new media can promote a *networked view* of reality directly related to the *linking thinking* shift required

by the L.I.N.K. faculty as I described it. In this last section I offer ecological social movements a draft proposal of using hypertext systems not only for trivial display purposes, but also to pursue their aims in a more effective way. In short, I argue that *Internet waves* are particularly suited to encourage *social waves*.

Næss (1995b, p. 75) describes the *deep ecology movement* as 'a total view comprising many levels in contact with each other' and illustrates verbally articulated 'logical relations' between the premises and the conclusions of its ecological worldview by the so-called 'Apron Diagram' (AD). In his diagram they move down in stages, so that 'some conclusions become premises for new conclusions' (Næss 1995b, p. 75). Næss (1995b, p. 75) highlights that the cultural change promoted by *deep ecology* requires also 'genetic relations'. They refer to 'influences, motivations, inspirations, and cause-and-effect relations' which cannot be indicated in the AD: 'they may move up and down or anywhere, and they involve time' (Næss 1995b, p. 75). Using the AD as a pattern of how ecological social movements act to slowly revolutionize Western cultural paradigm and worldview – even Næss (1995b, p. 77) suggests to use it 'to illustrate the same general aspects of other international movements' too – I claim that World Wide Web systems can influence direction of genesis and reduce the time required to make the cultural change needed to resolve contemporary crises.

The Apron

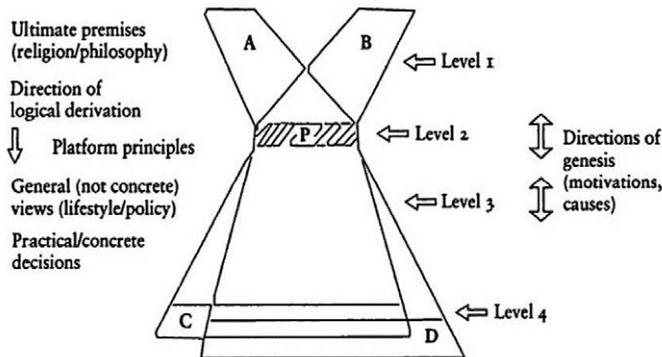


Fig. 12. Figure shows the 1995 version of the Arne Næss's Apron Diagram (Næss 1995a, p. 10).

There are four levels to take into account: (level 1) verbalized fundamental philosophical and religious ideas and intuitions; (level 2) the platform of the ecological social movements; (level 3) more or less general consequences derived from the platform (such as lifestyles and general policies of every kind); and (level 4) concrete situations and practical decisions made in these situations (Næss 1995b, pp. 75-76). Hence, Næss (1995b, p. 77) claims that the ecological social movements 'can be seen to manifest both plurality and unity: unity at level 2 (as is true for many global grassroots movements) and plurality at other levels'. In other words, the platform principles of the ecological social movements (level 2) can be *theoretically* grounded for individual supporters in many and diverse religions or philosophies, and can also bring various general and concrete *ethical* decisions. It follows that level 2 is the (*theoretical* and *ethical*) key to fulfill the systemic and ecological worldview related to the *biocentric* or

ecocentric cultural paradigm.

Given this argument, with my draft proposal of the 'Web Apron Diagram' (WAD) I (2011) suggest using hypertext not only to develop or strengthen the L.I.N.K. faculty, but also to produce an *ecological network of knowledge* and share an *ecological web of learning*. I claim that the *hypertexted platform principles* that can be realized through the use of the V.I.T.A. (Video, Image, Text, Audio) elements of the World Wide Web systems will facilitate or even embody the intuitive 'genetic relations' in the AD influencing motivations and causes, and therefore accelerating the cultural change process. In fact, I affirm that it will help global ecological social movements' *theorists, collaborators, and supporters* in many ways. Firstly, it will help all of them in using the L.I.N.K. faculty, which I showed to be related to new media and essential to fulfill the systemic and ecological worldview. Secondly, it will help *theorists and collaborators* in interactively refining and joining systemic and ecological principles, and spreading their messages all around the globe. Finally, it will help *supporters* in theoretical and ethical coordination, as well as in making practical decisions in concrete situations.

THE WEB APRON

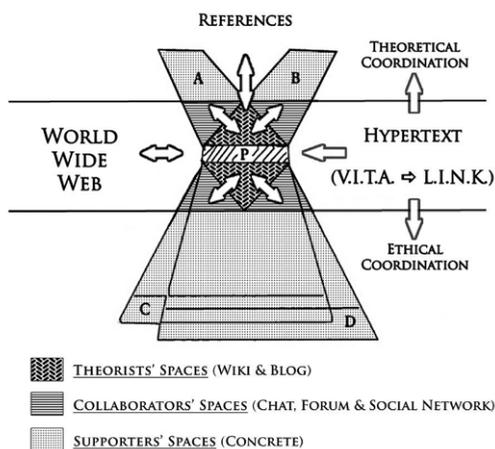


Fig. 13. Figure shows a reviewed version of the Web Apron Diagram (Andreozzi 2011, p. 226).

In my draft proposal of the WAD I suggest *theorists* to use Wiki and Blog systems to write cooperatively a web principles' platform, even thanks to reviews and suggestions from Chat, Forum, and Social Network interactions with *collaborators*. In fact, through the use of V.I.T.A. hypertext elements it is possible to build a relations' network of topics linking arguments and sorting them by tags and keywords. I argue that it can help *supporters and readers* in general in using L.I.N.K. to understand reticular non-sequential connections between several branches of knowledge now seen as disconnected and distant from each other, and therefore between nature well-being and human well-being. However, it has to be pointed out that not only peer reviews and scientific data updates are essential to guarantee rigorous information: precise references to data, books and publications in general are also necessarily required.

The web platform can be useful also to coordinate activists and global campaigns as well as to help people to make ecological decisions in daily ethical situations. On the other hand,

it has to be clarified that the last and decisive steps needed to fully develop *biocentric or ecocentric awareness* belong to individuals only, and are therefore realized in concrete spaces through the making of a personal effort. Platform principles represent an *invitation* to assume a different cultural perspective and their hypertexted version represent a further *encouragement* to transform our way of thinking and worldview – that is why I claim that the new medium offered by hypertext systems can help ecological social movements reaching their aims. However, it cannot solve all the problems of the world in one move. In fact, the main work that has to be done refers to the manner of living of individuals, and therefore to the choices of our daily life. In other words, even without setting apart all the key arguments given in this paper, the first step to do remains making a personal effort.

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The Me and the Message, a Media Ontogenesis for Today and The Future

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1. Introduction

The basic motivation of this work is to establish a common sense that might ensure the appearance of a public demand for media by users who are thoroughly aware of the tools they are using.

The thoroughness of the awareness here sought for implies a media knowledge that is functional and structural of media in such a way that users might progressively appropriate means of communication.

The phenomenological cause of this motivation is the new fact that more and more, information substitutes matter in human industriousness both as raw material and tools. Thus, the hand labourers and the users who actually operate the raw material and tools that are used in the fabrication and use of media tools are less and less the proprietors of said raw matter and tools, leave alone being the owners of the raw information contained in the finished product.

The author has a critical view of Historic Materialism as a basic principle – by which users of raw materials and tools should own these two – which becomes outdated by media and information progressively acquiring the most important commercial and labour-involved value in present and future human industriousness.

This author suggests a Media Ontogenesis as a beginning mean to communicate the users and the tools they operate.

And hopes his paper's somehow peculiar title, *The Me and the Message*, may summarily convey the natural fundaments for these concepts.

At this beginning point of this paper, the author finds it necessary to demonstrate a fundamental difference between the assertions and problems and doubts generated by what was generally called biolinguistics by many researchers, and the point of view here presented. This author understands that the general path taken by biolinguistics-associated thinkers and researchers and the discussions rising thereafter have had their starting point at an anthropo-centralized view that begins to investigate language from its anthropomorphic end product: meaning. The ensuing attempt at reverse engineering modern language has led to more doubts than clarifications, due to the expansive, or reproductive character of language and media given its physiological reproductive basic function. Research in biolinguistics has been many times based on metaphors regarding natural life forms. Indeed, language and media observation does lend itself to metaphorizing and making comparisons with nature, but only because of the permanently underlying sexual function of voice. Biolinguistical approaches have led to as many questions as answers precisely because language and media have been

considered instruments of communication and not what they fundamentally perform: reproduction and expansion of human presence on the planet. Communication is mechanically one of the subsequent and subsidiary tools to execute such reproduction. Communication and media are not elements of human labour, study or welfare for advantageous and/or comfortable survival. Rather, communication and media are tools of reproduction. That is possibly the basic reason why other, non human forms of life on the planet have normally reached an optimal level of demographical development and occupation of material space and remain there, for the duration of their phylogenetic cycles. Not so with the human species, who have occupied the planet surface, underground and atmosphere with their material and immaterial presence through the use of the expansion of their reproductive capacity given by the expansion of language, a basically reproductive implement.

The reasons why of all other mammals and birds only humans have exploded their reproductive use of voice, language and communication is fodder for wide interdisciplinary studies which will be centralized, according to this author, on physical anthropology and human zoology and will possibly theorize and research on phylogenetical-trauma compensations linked to abrupt environment changes among specific groups of primates. These studies – on how human communicational capacity came to be expanded as compared to other mammals and birds – will require a different type of study and would be a digression here. By anchoring language, communication and media to Physiology, the author intends to launch a fresh and realistic form of analysis of language, communication and media and their extraordinary expansion. In order to approach the mechanics of media expansion, the author has made use, Marshall McLuhan's ideas on identity and enveloping.

2. The Me and the Message

The mother of all media is the voice of mammals and birds. The voice has a quality that, differently from other noises occurring through air provides indispensable identification and localization for recently brooding mothers of mammal and bird species. For this phenomenon to occur, the voice transmits a "sound DNA", so to speak, which carries the required identification individual or family code. Additionally, sound dispersion and expansion being straight-lined, it permits localization. Both elements are indispensable to bird and mammal species' procreative means and can rightfully be addressed as the fountainhead of consequential animal and human communication and information.

By anchoring language, communication and media to Physiology, the author intends to launch a totally renewed form of analysis

In the human appropriation of voice and consequent expansion through information and communication, the basic physiology of this reproductive character of voice is the driving force in generating social identity for individuals and for collectivities.

It is precisely this identity-generating function of information that boosts the information and media expansion and chain-reaction that has been called the Global Big-Bang.

The mechanical and physiological operation by which identity generates reproduction in organic life is quasi-self-explanatory: there is no continuation or reproduction of any organic entity if such entity has not been established. And once an entity has been established, it can encounter another form, which simultaneously is similar, say within an animal species, and

different, individually. Below, the author will call this encounter of identities an encounter between similar/different entities.

In other words, when I affirm myself as an individual or social entity, I can interact with another individual or social entity who also calls itself "Me". The first thing I would do is call myself a name or identity in order to state my point or demand that will be commensurate with that identity. Such is the identifying nature of language and communication as directly sustained by the reproductive character of the voice. No identity terminally means no communication, and of course, no media.

Further, when communication between two entities happens, given the reproductive character of language, third, fourth and then, multiple entities are generated. Yet, while this natural multiplication, when happening in physical sexual reproduction is constrained by conditions of food, space and the force of gravity, when it happens through voice or human media it has no such constraints because voice and media expansion follows the patterns of air, which is the structural inheritance bequeathed by the means of transport of the voice.

And, for air-form expansion, the sky is the limit.

The objective in this explanation is to initially establish a causal and structural link between, on one hand, identity-formation and, on the other hand, expansion, in media. The threefold fundament for this linking comes firstly from the fact that the voice is initially not a means of communication but a means of identification that is heavily empowered by the critical mechanisms of the reproduction and survival; secondly, from the fact that robust identification is the fundamental and sine-qua-non condition for interaction which includes reproductive interaction and, thirdly, from the fact that the air admits voice and media code variation to a booming extent.

Not intended here to prove this proposed (but yet to be researched and reviewed) link, but corroborating the aforementioned fundament for linking, in media, its identity-forming character and its expansive character, is the fact that some of the most voluminous media expressions are based on self-identification of individuals (social networks, for example), and sexually-related upsurges (such as romantic popular music, or internet pornography).

But indeed proving the expansive character of media and approaching an exam of this expansion, is a Marshall McLuhan proposal – the Enveloping provoked by media. The proposition of Enveloping takes the author to infer that Identity, generated through each organically joined group of media-induced signs produces the Enveloping in order for reproduction and expansion to take place, alias the Global Big Bang, by leading to the interaction between each separate media-formed identities. As an example, the author mentions non-PC users struggling to state their point against PC users (and each separately identified industry competing and rushing for technological-development news doled out identifiable consumers' hearts and minds).

Of course, Enveloping is a natural tool for Identification, but only so that media reproduction and expansion might take place.

Below, the author here reinstates the organic character of language as presented in the peer-reviewed abstract, to help understanding of his position and to substantiate research proposals that will then follow.

"The voice of mammals and birds has always been a sine-qua-non condition for their sexual reproduction (*). Thus, the communication of information is a secondary role of voice, its primary function being the critical assertion of the physical presence of an individual in the form of a sound, a loud "me" which, information-wise, is initially aimless. No intention

here of "calling mother"; natural evolution selected those who cried for up to some twelve hours before dying of starvation. Neither is that newborn powerful voice a classical piece of information for the mother, say, a mother-bird, because her phenomenal capacity of precisely recognizing and locating her specific nest among a multitude of extremely varied other chirps, lies in the fact that her offspring's "voice genetic profile" intricate mechanism will be her own, also "me-mother", which constitutes a part of herself or any genetically identical physical part of herself, (such as a naturally very pertaining limb) given the offspring's recent pertaining inside her womb. So, in a way, she is also asserting her self while she demodulates her offspring's sound and zeroes onto their nest. Correspondingly, it may well be that today's baby visceral Ma (supposedly, for Mother) really means Me.

The plasticity of air (and that of the voice sound modifying and uncurvingly reverberating through it in order to bridge critical distances) lends itself to form and host a "sound genetic profile" of great precision albeit even more multitudinal, in ordered repeatable elements, than the physical genetic DNA profile. This particular reproductive component - the intricate individual and phylogenetic specificity of mammal/bird voice mechanism, with its critical reproductive role - suffered an ancestral and ongoing explosion in one and/or more species of primates. The original big bang.

But while physical reproductive capacities in mammals and birds are restrained by available food/water, space, the force of gravity and time, the sky is the limit for the voice component of reproduction if it unbridledly proliferates to physically constitute individuals and their extensions - their tools and their habitat. The extraordinary expansion of human species habitats reinforces the theory of language evolution used as a spontaneous reaction to critical demographic rearrangements and the consequential identification difficulties posed by changes that were critical - but not fatal - in the optimal distances among individuals.

The ideas expounded above can be taken into the analysis of media behaviour, due to what is here understood as bridging towards the principles governing an element as fundamentally and intrinsically reproductive as human language and its direct consequences: information and its tools for human extension: the media. If voice has bridged points in space for tens of thousands of years, originally to serve our survival, it will inevitably bridge time, and nowadays serve the same purpose, under the same reproductive stigma. Moreover, all substantial analysis of language and media is done, today, by using intelligent language and media, which we are inevitably surrounded and suspended by. Thus, the intricate media technological and content explosion today is bound to be analyzed from an equally exploding point of view. The fact that both analyst and analyzed object are inside the same explosion might yield plenty of observations, but few analytical- quality filters or few macroscopic views of why and how media grows, and how it does so in direct relation to an increasing focus on individual users of media saying "Me". Media technology development and expansion point to some primordial conditions, among which is that they must identify Me and establish distance-bridging access to Me and my extensions.

Mean and message have always been Me, but the multitudinal paths and directions that dynamically coordinate this identity may require an analytical standpoint grounded on non-metaphorical physiological models and projections. Present and imminent technology and content unfolding will still take analysts by surprise, but on grounds more solid if we are supported by a macroscopic endorsement.

This paper proposes a view of media today that is anchored onto a profusely light-shedding field of research: Media Ontogenesis.

The two research proposals are 1. A Comparative Study on Media Development and Demographic Patterns, and 2. The Establishment of a Genetic Profile-based Analysis of Voice for a National Voice-profile Data Bank among Brazil's Digital Inclusion Programs Users.

The first of these research proposals, *A Comparative Study on Media Development and Demographic Patterns*, involves a couple of separate sub-studies regarding a. Voice and Sexual Development in Primates, which is presently being planned by and negotiated between the author's base institution, The Speaking Organ, São Paulo, and The University of Sydney; and b. Demography and Digital Inclusion, which is presently being prepared by and negotiated between the author's base institution, The Speaking Organ, São Paulo, and GESAC at the Secretary of Telecommunications, Ministry of Communications, Brazil.

The second of these research proposals, *The Establishment of a Genetic Profile-based Analysis of Voice for a National Voice-profile Data Bank among Brazil's Digital Inclusion Programs Users*, also requires a previous large scope study regarding Comparative Studies between DNA-based Loci Determinants and Determining Vocal Sounds Loci for the Identification of Voice Profiles, and is planned and prepared with a base in previously made studies made at GESAC at the Secretary of Telecommunications, Ministry of Communications, Brazil, and the National Institute of Criminalistics, Federal Police, Brazil.

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