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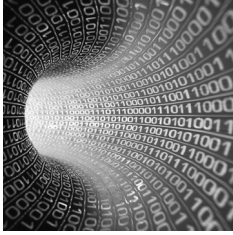
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ARTICLE

# Mapping conversations about new media: the theoretical field of digital communication

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## Abstract

This article reflects on the current state of digital communication studies in the context of mass communication research. The objectives of the article are: 1) to characterize the enunciators and the contents of scientific conversations about digital communication; and 2) to sketch a map of possible interlocutors who might enrich this new research field. After quickly exploring the paradigms of mass communication studies, the article deals with the main theoretical conversations about digital communication. The second part of the article describes the transformations that the appearance of digital technology has generated in communication processes. The article concludes with an agenda of the main issues and partners that theoretical conversations about digital communication should include. The article analyzes the constitution of a new scientific field and describes the process that may, in the future, lead to the creation of a theory of digital communication.

## Key words

communication theory • cyberculture • digital communication • mass communication theory • new media

## TALKING ABOUT THEORIES, DISCOURSES AND COMMUNICATION

Language is a basic element for the construction and survival of organizations (Flores, 1997; Winograd and Flores, 1987) and scientific institutions (Shotter, 1993). Scientific conversations emerge in an organizational environment made up of universities, research centers, journals, conferences and congresses. In these spaces, researchers exchange information, discuss ideas, litigate, arrive at agreements and take on obligations – for example to respect a scientific methodology and a series of discursive rules – inside a network of linguistic speech acts (Austin, 1999). In other words, researchers activate and hold conversations.

The concept of *scientific conversations* doesn't only refer to ideas, concepts, or theories that are based on the scientific method. These discourses must also be produced by recognized institutions (a church is a good place for the enunciation of religious discourses, but not for scientific ones) for specific receivers (scholars, scientists, etc.) who have some mastery of the main concepts and discursive rules of scientific discourse. To understand the dynamics of a scientific domain – for example the theoretical production of digital communication – it is necessary to map its discursive territory, identify the interlocutors that participate in the conversations and reconstruct their exchanges.

The spread of broadcasting in the second decade of the 20th century was followed by the development of a theoretical corpus about 'new media' such as radio and, 30 years later, television. This theoretical corpus integrated itself into a research tradition – the study of journalism, public opinion and press – and consolidated a new epistemological territory: Theories of Mass Communication (TMC). These theories constitute a conversational field in which different interlocutors discuss mass communication. For Craig (1999: 120):

> The various traditions of communication theory each offer distinct ways of conceptualizing and discussing communication problems and practices. These ways derive from and appeal to certain commonplace beliefs about communication while problematizing other beliefs. It is in this dialogue among these traditions that communication theory can fully engage with the ongoing practical discourse (or metadiscourse) about communication in society.

The arrival of a new generation of digital media that is no longer based on the broadcasting logic is challenging the knowledge about traditional mass communication. In the last decade many researchers have tried to integrate empirical data and theoretical reflections about the new media. Web theories (Burnett and Marshall, 2003), technocultural thought on electronic media (Thornton Caldwell, 2000), analysis of remediation processes (Bolter and

Grusin, 2000) and critical introductions to new media (Lister et al., 2003) are just a few examples of the very heterogeneous scientific production. In Sections 2 and 3 of this article I propose a reconstruction of the main scientific conversations about digital communication in the context of mass communication studies. The main objectives of these sections are to reflect on conversations about new media, with special attention being paid to the relationship with cybercultural discourses.

But conversations that have yet to take place are also important for constituting the field. Craig (1999: 149) proposed an agenda for future work in communication studies that included:

> *Exploring* the field to discover key issues and map the complex topography of the traditions; *creating* new traditions of communication theory and new ways of schematizing the field; and *applying* communication theory by engaging it with practical metadiscourse on communication problems.

For Craig, *exploring the field* involves 'both traversing the traditions to explore the complementarities and tensions among them and spelunking the traditions to explore their internal complexity' (1999: 149). After the retrospective exercise of the first sections of the article, where I *explore* the field, in Sections 4 and 5 I describe the *creation* of new conversations and the reconfiguration of the field since the arrival of new interlocutors that may enrich these conversations.

## NEW MEDIA AND OLD THEORIES

From a theoretical perspective it is almost impossible to continue talking about 'new media'. Is television a new medium? It used to be a new medium in the 1950s. The same may be said for radio in the 1920s or cinema at the beginning of the 20th century. Some researchers agree that the 'newness of new media is, in part, real, in that these media did not exist before now. But taking these changes into account does not mean abolishing all history because it (history) is full of similar moments of newness' (Lister et al., 2003: 3). All media were once new media (Gitelman, 2006; Gitelman and Pingree, 2003; Zielinski, 2006). Typewriters, optical telegraphs, vinyl record albums, eight-track tapes and Walkmans are (today) old media, but 'they were not always old, and studying them in terms that allow us to understand what it meant for them to be new is a timely and culturally important task' (Gitelman and Pingree, 2003: xi).

Therefore, 'new media' is a relative concept: in 30 or 20 years' time weblogs and online journals will be considered 'old media'. Then how can the new forms of communication in the digital age be defined? How can researchers speak about them? Should the 'new thing' be called 'interactive communication'? Or is it better to define it as just 'digital communication'?

What about 'hypermedia'? Why not 'networked' or 'collaborative communication'?

It is not easy to talk about these new forms of communication. Each researcher may adopt one or more characteristics to describe them: digitalization, interactivity, virtuality, dispersion, hypertextuality (Lister et al., 2003), numerical representation, modularity, automation, variability, transcoding (Manovich, 2001), digitalization, hypertextuality, networking, convergence, interactivity (Scolari, 2008), etc. This semantic confusion should be put into perspective: as a new research field is born semantic chaos is a necessary part of this process. Nevertheless, the chaos surrounding the definition of a scientific object could be useful for redesigning the limits of its conversations (i.e. research into 'interactive communication' should include exchanges with Human–Computer Interaction (HCI) and usability studies, etc.). In this context I consider that digitalization – understood as the technological process that reduces the text to something that can be easily fragmented, handled, linked and distributed – is what allows networking, multimedia, collaborative and interactive communication. This is why in this article I prefer to employ, although provisionally and in an operative way, the concept of 'digital communication'.

## Mass communication conversations

The territory of mass communication research is a complex network of theoretical paradigms, methodologies, techniques and specific dictionaries. From agenda-setting to the functional approach, from the spiral of silence to uses and gratification or cultural imperialism, it is almost impossible to concentrate all this theoretical production into one consistent scientific discourse. Therefore, TMC constitute a particular conversational space where different scientific practices and discourses confront each other.

Theories of communication have been classified according to their disciplinary origin (sociology, psychology, etc.), explanation (cognitive, system–theoretic, etc.), level of organization (group, mass, etc.), epistemological premises (empirical, critical, etc.) and underlying conceptions of communicative practice (rhetorical, phenomenological, etc.) (Craig, 1999: 134–5). In this article I describe the TMC according to the traditional division into three paradigms based on the underlying epistemology:

1  *Critical paradigm*: based on the Frankfurt School (Theodor Adorno, Mark Horkheimer, Walter Benjamin) and cultural imperialism (Armand Mattelart) studies, this paradigm focuses on the cultural industry and the rationalization of domination in contemporary capitalist societies. The critical approach has been one of the most important partners in mass communication conversations.

Researchers like Herbert Marcuse and Jürgen Habermas kept Frankfurt's tradition alive after the crisis of the original school just before the Second World War.

2  *Empirical paradigm*: based on traditional Mass Communication Research, the empirical paradigm has been the most important counterpoint of the critical approach to mass communication conversations. This opposition can also be seen as the confrontation between a European way of communication research and the North American way of analyzing mass media. Researchers such as Robert Merton, Harold Lasswell, Paul Lazarsfeld and Wilbur Schramm are considered the fathers of this approach and their names have already entered the official history of mass media research.

3  *Interpretative/cultural paradigm*: inspired by anthropological research, this paradigm goes beyond the field of mass communication studies. The interpretative/cultural paradigm considers mass communication to be a social construction and therefore analyzes newsmaking, social discourses, cultural conflicts and reception processes by applying a mix of semiology and ethnography. Even if their approaches are not the same, it can be said that this paradigm has been developed mostly by British (Raymond Williams, Stuart Hall) and Latin-American (Jesús Martín Barbero, Néstor García Canclini) researchers over the last 40 years. While British research has focused on subcultures and textual and audience analyses, Latin-American studies have focused on popular cultures, mediation and consumption practices.

This three-paradigm description is just a draft to start thinking about the digital challenge to TMC. For example, it is almost impossible to find a place for Marshall McLuhan in this description (which is not a minor drawback as McLuhan is one of the most quoted authors of digital communication discourses). The real conversations of TMC are more complex and involve many other interlocutors, from semioticians to psychologists, economists, historians, etc. In any case, the arrival of new forms of digital communication has further increased the complexity of this territory and redefined the old conversations about mass media.

## TALKING ABOUT THE (CYBER)REVOLUTION

In the 1980s it was clear that the traditional TMC were becoming obsolete. In 1983 Rogers and Chaffee suggested that 'scholars are going to have to shift toward models that accommodate interactivity for most of the new communication technologies. New paradigms are needed, based on new intellectual technology' (1983: 25). A year later Rice and Williams confirmed that 'a new media may, in fact, necessitate a considerable reassessment of communication research. Intellectual changes may occur to match the

growing changes in communication behavior' (1984: 80). The traditional TMC founded on the one-to-many broadcast model didn't have answers to these challenges.

## First conversations about new media

When digital media arrived the researchers' first response was to apply what they already knew: mass media theories.

> We have seen a series of first encounters in which established theoretical traditions with their existing conceptual frameworks are applied, more or less directly, to the new digital artifacts, their users and influences. These undertakings have been important and necessary. Despite their limitations in the long run, they have demonstrated the variety and complexity of digital domains and indicated the need to move beyond the immediacy and naiveté of such procedures. (Liestøl et al., 2003: 1)

George Landow (2003: 35–6) also reflects on this first encounter between the new (media) and the old (theories):

> At first tends to be (mis)understood in terms of older technologies. We often approach an innovation, particularly an innovative technology, in terms of an analogy or paradigm that at first seems appropriate but later turns out to block much of the power of the innovation (...) Our tendency of putting new wine in old bottles, so common in early stages of technological innovation, can come at a high cost: it can render points of beneficial difference almost impossible to discern and encourage us to conceptualize new phenomena in inappropriate ways.

Landow's description of first encounters between the new and old is still impregnated with a *rhetoric of newness* that emphasizes the 'new wine' and practically neutralizes any reflection on the continuity of a tradition. Jay David Bolter (2003: 22) remarks that:

> When cultural studies critics now approach digital media, they often assume that these new media must follow the same pattern of hegemonic production and resistant reception. They look for examples of new media forms that can be characterized as mass media, because they are comfortable with the broadcast model in which the control of the media form is centralized.

Many scientists consider that this first phase of new media research has already been completed and that the findings should be integrated into a second order theoretical corpus. Even Bolter believes that this new research field should be 'a combination of strategies established for understanding earlier media' (2003: 15).

The confrontation between new digital technologies and the old theoretical corpus created the conditions for the emergence of the new media theories.

## Old theories for new media?

How did communication researchers react to digital media diffusion in the 1990s? Two opposing positions can be identified:

- Critics of digital media often deny that there has been any substantial change at all, either in the media or in the cultures of which they form a part. Such critical accounts of new media 'frequently stress the continuity in economic interests, political imperatives and cultural values that drive and shape the "new" as much as the "old" media' (Lister et al., 2003: 3). For the critical continuity supporters there is no 'new thing' in the 'new media'.
- Supporters of digital media often insist that everything has changed and that society is moving forward to a new digital world. From this point of view, which is sustained by a network of authors and successful publications such as *Wired* magazine, digital technology will create a more democratic and equal society (Negroponte, 1995). For the supporters of uncritical discontinuity there is only 'new media'.

Lister et al. formulate this opposition by means of a metaphor: 'the critical critics are so deep underwater that they don't see the wave. Meanwhile, the uncritical utopians are so focused on the crest of the wave itself that they cannot see the ocean of which it is part' (2003: 4). This opposition between a critical approach, which considers 'new media' to be just a phase of the media systems evolution, and an uncritical approach, which characterizes these media as a revolution, may be useful for didactical purposes but scientific conversations are usually more complex. It is important to point out that both critics and supporters of digital media have revived concepts, methodologies and hypotheses from old communication paradigms. Critics of digital revolution, like Maldonado (1997), have built their approach mostly on the Frankfurt School's tradition. Other researchers like Bolter and Grusin (2000) have revived McLuhan's ideas and have applied them to digital communication. It could be said that these researchers apply the 'old theories' to a 'new scientific object': digital media and, more broadly, digital society.

Many digital communication researchers, or rather their respective discourses about 'new media', can be placed into the three epistemological containers of the TMC:

1  *Critical paradigm*: it is possible to reconstruct a coherent discourse that starts with Adorno's and Horkheimer's condemnation of cultural industry in the 1940s, continues with Marcuse's and Habermas' reflections on late capitalism domination devices in the 1960s and concludes with Maldonado's demolishing analysis of 'informatic reason' in the last decade of the last century (1997).

2 *Empirical paradigm*: studies of online audiences and internet diffusion, sociological research of the network society (Castells, 1996–8) or the more specific research on HCI (Shneiderman, 1998) and usability (Nielsen, 1993, 2000) could be considered methodologically closer to the empirical tradition of mass communication research. Applications of the uses and gratifications theory to digital media audiences should also be included in this paradigm.

3 *Interpretative paradigm*: the broad bibliography on ethnographic research into MUD and virtual communities or the studies of digital media consumption in everyday life (Miller and Slater, 2000) may be integrated into the cultural studies tradition. In addition, the 'active audience' tradition has been revived within digital media studies: the web 'has irredeemably built itself into mass culture and vice versa. It must therefore follow that web uses and users have some relation to the audience subjectivities constructed in existing theories of mass culture' (Lister et al., 2003: 185).

Once more, it should be remembered that scientific conversations are very complex and cannot be reduced to a single opposition (critical/uncritical, pessimistic/optimistic, continuity/discontinuity, etc.). For example, HCI research – which is mostly based on cognitive sciences and psychology (Shneiderman, 1998) – is a long way from Castells' sociology of networked societies. If HCI researchers are interested in micro aspects of interaction processes, large events, like the configuration of a new society based on digital networks, are covered by the sociological approach. Nevertheless, it is sometimes possible to recognize echoes of the critical tradition in Castells' reflections (for example, in his analysis of the digital divide).

What can be recovered from the traditional TMC? May considers that 'there are sufficient analytical tools to hand without the continual invention of new paradigms to understand the current stage of technological advance' (2000: 241). May's program includes recovering intellectuals like Walter Benjamin, Murray Edelman, Jacques Ellul, Harold Innis, Lewis Mumford and Raymond Williams (May, 2000). The return of the once anathematized theories of Marshall McLuhan should be included in this recuperation of tradition. Although mass communication theoreticians have criticized the Canadian researcher for years for the absence of scientific status in his works, digital media theorists have rediscovered McLuhan and adopted him as the new *guru* of new media. However, to understand new media McLuhan is not enough.

All these rejections and regenerations are basic elements of the contemporary scientific conversations about digital communication. These conversations are still going on and define a territory that is still affected by epistemological earthquakes and discursive tremors.

## New theories for the new media?

This description of the conversations between the traditional TMC and digital media research must be complemented with new discourses that have emerged from the digital culture environment; for example, about hypertext (Bolter, 1991; Landow, 1991, 1994), interfaces (Laurel, 1989), virtual reality (Rheingold, 1993) or CMC (Turkle, 1995). Most of these discourses could be included under the umbrella of *cyberculture*, another critical concept for describing digital communication theories.

### From the cyberculture to internet studies
The term *cyberculture* brackets together a relatively diverse range of approaches to new communication technologies. The cybercultural tone 'is by and large optimistic (...) and can fall into utopian assumptions about the emancipatory possibilities of digital media, such as virtual reality and certain Internet media' (Lister et al., 2003: 228). Cybercultural discourses integrate narrative fictions, theoretical constructions, contracultural practices, utopic perspectives, post–modern anxieties and marketing strategies within a unique conversational territory. Over recent years a series of essential questions and theoretical challenges has emerged from this heterogeneous discursive space. A theoretical reflection on digital communication should recognize and integrate these inputs from the cybercultural conversational territory.

The first conversations about digital devices and communication networks took place in parallel to the development of computers in the post–war period and, by the end of the 1960s, to the expansion of digital networks. The pioneering works of researchers like Bush (2001), Licklider (2001), Engelbart (2001) and Nelson (1982) outlined the new territory. At the beginning of the 1980s new personal computers, graphic interfaces, videogames, interaction devices and applications contributed to creating a new (hyper)media system. This big bang of devices occurred in parallel to the explosion of narratives about digital culture, from cyberpunk romances like Gibson's *Neuromancer* (1984) to theoretical reflections. The cybercultural conversational field emerged out of this sudden wave of new technologies and discourses.

Silver (2000) considers that cyberculture reflections and theoretical production have crossed through different stages:

> The first stage, popular cyberculture, is marked by its journalistic origins and characterized by its descriptive nature, limited dualism, and use of the Internet-as-frontier metaphor. The second stage, cyberculture studies, focuses largely on virtual communities and online identities and benefits from an influx of academic scholars. The third stage, critical cyberculture studies, expands the notion of cyberculture to include four areas of study – online interactions, digital discourses, access and denial to the Internet, and interface design of cyberspace – and explores the intersections and interdependencies between any and all four domains.

Popular cyberculture was descriptive and often suffered from a limited dualism between dystopic visions and utopic celebrations. For the partisans of apocalypse like Sale (1995) the World Wide Web deteriorated culture and generated political alienation and social fragmentation. The discussion about the 'end of the book' was at the center of this imaginary (Coover, 1992). Conversely, a group of researchers and digital prophets like Negroponte (1995) declared cyberspace to be a new frontier of civilization, a digital domain that could and would bring down big business, foster democratic participation, and end economic and social inequities. It could be said that Howard Rheingold's *The Virtual Community. Homesteading on the Electronic Frontier* (1993) synthesizes and, at the same time, closes the first stage of the cybercultural conversation.

Sherry Turkle's *Life on the Screen. Identity in the Age of the Internet* (1995) may be considered one of the most representative texts of the second phase. By the mid 1990s:

> Cyberculture studies was well underway, focused primarily on virtual communities and online identities. Further, as a result of the enthusiasm found in the work of Rheingold and Turkle, cyberculture was often articulated as a site of empowerment, an online space reserved for construction, creativity, and community. Fortunately, however, this simplification was matched by the richness found in the nascent field's welcoming of interdisciplinarity. (Silver, 2000)

Researchers newly arrived to the territory of digital communication have brought about a renewal of methods and theories. Some sociologists consider virtual communities social networks (Wellman et al., 1996), whereas others have revived the interactionist approach (Smith and Kollock, 1999). From the anthropological point of view, a new field called *cyborg anthropology* has appeared which studies the intersections between individuals, digital society and networks (Downey and Dumit, 1998). Researchers such as Hayles (1999) and Haraway (2004) must be included in this theoretical production about cyborgs, virtual bodies, cyberfeminism and post–human life. Hayles' *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (1999) should be considered a cornerstone of the theoretical reflection on cybernetics, information and post–humanism. Haraway (1991), by means of the cyborg metaphor, also situates the body at the center of her critiques on traditional feminism. Ethnography has also been employed in this phase to analyze users, identities and behaviors in virtual environments (Baym, 1995). Scientific journalists like Kelly (1995) or scholars like Piscitelli (1995, 2005), Logan (2000), Lévy (2000, 2001) and De Kerkhove (1995, 1997) have explored the ecological dimension of digital networks.

Critical cyberculture studies (the third stage for Silver) arrived in the second half of the 1990s, when 'many academic and popular presses have

published dozens of monographs, edited volumes, and anthologies devoted to the growing field of cyberculture' (Silver, 2000). By the end of the century the huge amount of scientific production had covered areas like the exploration of the social, cultural, and economic interactions which take place online, the analysis of design processes and the digital divide.

The transformations of the World Wide Web in the beginning of the century generated new conversations that must be included in any description of cyberculture territory. Social practices like blogging, peer-to-peer distribution, collaborative phenomena like Wikipedia or YouTube and content syndication are the emergent properties of the 'web 2.0' (O'Reilly, 2005; Piscitelli, 2005) that have already been integrated into digital communication conversations.

**Internet studies**   For Gurak (2004) the latest scientific production about digital communication and the World Wide Web – also known as *Internet Studies* – has abandoned the basic cybercultural approaches that were sometimes chaotic and frequently impregnated with ideological assumptions. Internet studies are basically interdisciplinary because many researchers began to explore outside their own area. Media convergence is also transforming communication researcher's skills and profiles:

> Many of the 'original' internet researchers were trained to study text and conversation, but few have expertise in computer science, interface design, usability and visual analysis. A new group of researchers, raised in the dot.com age and emerging from their graduate studies, will lead the way for this new era of internet studies. (Gurak, 2004: 29)

This last reflection is particularly important from my point of view. The pioneer generation of media researchers, including scholars like Harold Lasswell and Paul Lazarsfeld, was not specialized in mass communication or broadcasting: they were just sociologists or political scientists analyzing mass media. It took about 20 years before the first generation of 'full time' media researchers came along. Wilbur Schramm, a well-known researcher in the 1960s and 1970s, was considered the first expert in sociology of mass communication. The same situation may be found in the evolution of digital communication research: the first generation was composed of experts in cinema (Manovich, 2001), literature and narrative (Bolter, 1991; Landow, 1991, 1994; Murray, 1997) and many other fields (computer science, HCI, etc.).

A final reflection on cyberculture and internet studies: even if this description of digital communication research is linear and chronological, different approaches that are more or less scientific, more or less popular, exist simultaneously in the current conversational territory (Table 1).

• Table 1  Theoretical cybercultural reflections

| PHASE | AGENDA | CHARACTERISTICS | ENUNCIATORS | THEORETICAL MATRIX | KEYWORDS |
|---|---|---|---|---|---|
| **1960–1984** | | | | | |
| **Founding fathers** | HC Symbiosis Hypertext Interfaces | First theoretical speculations about computing, communication and networks Prototype production | Bush Engelbart Licklider Nelson | Information theory Cybernetics Systems theory | *Memex Xanadu Arpanet TCP/IP* |
| **1984–1993** | | | | | |
| **Origins** | Hypertext Interfaces Usability Virtual reality AI | Production about hypertext, interfaces, HCI and CMC | Bolter Joyce Landow Laurel Moulthrop Shneiderman | Deconstruc-tionism Cognitive sciences Psychology | *User interface Hypertext Storyspace Intermedia Hypercard Cd-rom Internet* |
| **1993–2000** | | | | | |
| **Popular cyber cultures** | Internet Cyberspace Info highway Cyborg Vivisystem Virtual communities | Reflections about digital society  Unsystematic description of processes, actors and events | Haraway Hayles Kelly Negroponte Nielsen Rheingold | Cognitive sciences Psychology Complexity theory Economy Biology Feminism | *Internet WWW Wired Mosaic* |
| **Academic cyber cultures** | Virtual communities Identities Hypermedia | Systematic description of processes, actors and events | Berners Lee Castells De Kerkhove Lévy | TMC Narratology Political science Sociology | *Netscape Explorer Yahoo!* |
| **Critical cyber cultures** | Interactive fiction Collective intelligence Network society | Critical and deeper approach | Logan Manovich Murray Nielsen Piscitelli Turkle Ryan | Cultural Studies Science technology studies | |
| **2000–2008** | | | | | |
| **Internet studies** | Open source P2P Blogs Wiki RSS Semantic web | Reconfiguration of digital communication theories and methodologies | Barabasi Gauntlett Gillmor Huberman Liestøl Marshall O'Reilly | Previous theoretical matrix (1993–2000) Ludology Network theory Actor-network theory | *Linux Flash Google Blogs Wiki P2P Web 2.0 Open source* |

Thus, in cybercultural conversations it is possible to find discourses founded on highly empirical research (Castells, 1996–98; Nielsen, 1993, 2000), philosophical speculations (Lévy, 2000, 2001), journalistic analysis (Kelly, 1995; Rheingold, 1993), apocalyptic visions (Virilio, 1997), optimistic forecasts (Negroponte, 1995), literary criticism (Haraway, 2004; Hayles, 1999) and cyberpunk literature (Gibson, 1984). Cybercultural conversations have happily accepted partners of any kind. But should theoretical conversations about digital communication involve all of these interlocutors? Does such a heterogeneous cybercultural discursive production help in the construction of a new set of theories about digital communication? Or should the conversations about new media be limited to only 'scientific' interlocutors? I think it is important not to throw the baby out with the bath water. Many concepts, hypotheses, ideas and proposals from cybercultural conversations should be integrated into a theoretical construction about digital communication. For example, CMC research into virtual communities has developed a solid theoretical corpus about digital exchanges between partners (Thurlow et al., 2004).

Another argument that encourages the recuperation of cybercultural conversations is the influence of technology on human culture. Most mass communication research has been highly skeptical about this influence. This has led both 'to a general blindness concerning the history and philosophy of technology in general, and a relative absence of studies that seek to understand technology's role within cultural and media studies' (Lister et al., 2003: 289). For many years, to criticize Marshall McLuhan was the only recognized approach to technology in the TMC. Including the cybercultural agenda in a theoretical reflection about digital communication may help to eradicate any kind of technological taboo.

However, theoretical thinking about digital communications should be discerning and keep its distance from certain journalistic reflections and optimistic/apocalyptic predictions that are propounded in cybercultural conversations. For example, the theoretical contribution of the analysis of scattered virtual communities founded on personal experiences and a set of random interviews (like Rheingold, 1993) cannot be compared to empirical sociological or ethnographic studies of these communities (Beckers, 1998; Paccagnella, 1997). Although there is much interest in virtual communities, researchers like Beckers consider that:

> The overall quality and depth of the research can be questioned. One reason for this is time. It takes time to build research projects, to ask the right kind of questions and to adapt research methods to this new field of study (…) In the meantime, the small amount of empirical research leaves space for both utopian and dystopian views. (Beckers, 1998)

In the same way, widespread conversations about cyborgs or virtual realities, which took place in the popular cyberculture phase and which still continue, are useful for opening up new perspectives for digital communication research. It should be remembered, however, that these conversations are mostly based on speculation, rather than empirical data, and are often impregnated with ideological assumptions about the 'digital future'.

Therefore, this miscellaneous cybercultural discourse is a good source of new questions and challenges but sometimes a weak foundation on which to build theories about digital communication. In other words:

- Digital media research cannot be limited to the old TMC models. The new forms of collaborative communication are challenging traditional broadcasting systems and theories, so new categories and methodologies are needed,
- Research into digital communication should not, however, be diluted into a discursive melting pot of conjectures, speculations and utopian/dystopian views which may sound fashionable but are difficult to articulate into a coherent theoretical corpus.

## THEORIZING DIGITAL COMMUNICATIONS

In this section I briefly analyze some of the new ways of producing communication, the current characteristics of digital communication contents and the consumption processes that they activate. This description may be useful for: 1) organizing the research territory; 2) identifying collateral scientific fields for exchanging concepts, methodologies and hypotheses; and 3) enriching theoretical conversations. In other words, by analyzing how digital communication is produced and consumed, I identify a new set of partners to be included in the theoretical conversations.

### Production

Digital technology has transformed the way communication is produced. This mutation includes spreading an innovative production logic (as, for example, open sourcing or citizen journalism) and the appearance of new professional routines and profiles.

For Weber the open source is an 'experiment in building a political economy – that is, a system of sustainable valued creation and a set of governance mechanisms' (2004: 1) based on the right to distribute a product freely. These experiences challenge 'some conventional theories about the organization of production, and how it affects and is affected by society' (2004: 8). Many digital journalists, webloggers and free information partisans have adopted this philosophy and adapted it to digital content (Gillmor, 2004; Hewitt, 2005). Weblogs are founded on the free distribution of information.

Wikis empower user modification and distribution of digital texts. Even if traditional broadcasting is still the core activity of media systems, the combination of open source philosophy and many-to-many distribution is introducing changes that are transforming the foundations of established mass communication production logic. The analysis of social networking has found in network theory (Barabasi, 2003; Huberman, 2001) a good interlocutor that must be integrated into the conversations about a theory of digital communication.

A new production logic needs a new workforce. Since communication has become more interactive, new profiles have enriched the media staff, from interaction designers to system managers and online advertisement experts. Another characteristic of the digital work force is reskilling. The previous model in which a person learned one skill and used it until retirement 'is obsolete in environments that depend on information technology' (Kotamraju, 2002: 4).

Digital communication workers must keep up to date if they want to survive in a high tech production environment. Another important characteristic of new media workers is multiskilling. The same professional should be able to produce information for different media; for example, the journalist must 'translate' the same information into different languages (audiovisual, audio, written) (ICOD Network, 2006).

The communication production process is changing. A theoretical reflection about digital communications should take into account these transformations in the media system. The dialogue with a political economy of digital communication (still to be developed) and a sociology of work and organization, especially those scholars interested in the post-fordist mode of production (Berardi, 2001), should be one of the most important issues on a digital communication research agenda.

## Content

New media have promoted the development of meta-products that combine traditional mass communication languages in an interactive environment. Digitalization processes have introduced different mutations into traditional communication contents: hypertextuality, multimediality, and interactivity seem to be the basic features of this transformation. From this perspective the theoretical production about hypertext (Berners Lee, 2000; Bolter, 1991; Landow, 1991, 1994; Nelson, 1982; Ryan, 2001), the experience of the humanities computing tradition (McCarty, 2005; Schreibman et al., 2005), the semiotics of new media (Cosenza, 2004; Scolari, 2004) and research into media convergence (Jenkins, 2006) must be considered privileged interlocutors of a theory of digital communication.

The new digital communication products also challenge Walter Benjamin's classical opposition between original work and technical reproduction. If an MP3 audio file may be copied and distributed an infinite amount of times without losing quality and challenging the laws on author's rights, where is the original artwork with its corresponding aura? Many scholars, like Davis (1995) or May (2003), have revisited Benjamin's mechanical reproduction from a digital perspective; these contributions should also be integrated into any theoretical reflection about digital communications.

## Consumption

New interactive media are making researchers reflect on their traditional conception of mass media interaction. It seems clear that digital media interactive user experience is not the same as flicking from channel to channel or turning a page: the sense of immersion and the consequences of interaction are radically different in digital environments. Theoretical production about digital communication should improve the dialogue with HCI, a consolidated and multidisciplinary research field, and should revisit, from an 'interactive' point of view, traditional approaches to audiences and mass media consumption (Burnett and Marshall, 2003; Marshall, 2004).

Another important issue of media consumption is political: many hypertext theoreticians agree that the division between author and reader (producer-consumer) should be erased. Landow sustained that 'hypertext blurs the boundaries between reader and writer' (1991: 5). If first generation hypertexts transferred power from the author to the reader, current forms of digital communication (like weblogs) are definitely socializing the production and distribution of contents.

These new consumption practices may be analyzed from different perspectives. Cultural studies have a long tradition of studying the consumption of technologies in households (Mackay, 1997) as well as traditional media audience research – for example, the uses and gratifications theory – and should be readapted to digital media consumption. Finally, in the last 20 years the knowledge about digital communication consumption has been increased by theories proposing a social construction of technology approach (Bijker et al., 1987; Oudshoorn and Pinch, 2003) and Bruno Latour's actor-network theory (2005).

## CONCLUSIONS: INTERLOCUTORS FOR THE NEW CONVERSATIONS

The conversations that define the field of digital communication theory can be arranged in a map and organized according to a *continuity–discontinuity* axis. Around the continuity pole (upper left) it is possible to find the conversations with the tradition of mass media research: theories of mass communication,

cultural studies, etc. Around the discontinuity pole (lower right) it is possible to identify the dialogues with the new scientific fields: hypertext theory, ludology, network theory, etc.

It can be considered that TMC in the 1940s were mainly related to information theory and sociology, in the 1970s the cognitive sciences became involved, but from the 1980s until the present day the main interlocutor has been cultural studies. Clearly these traditional partners should not be discarded but rather enriched with other interlocutors. Scientific conversations about computer-mediated communication, humanities computing or human-computer interaction hold an important position in contemporary conversations about digital media and therefore another sector of the map includes conversational partners like the political economy of communication and related disciplines (sociology of work, social construction of technology, etc.). This map is obviously an initial look at the field: many future or contemporary ongoing conversations about digital communications may be added to improve this epistemological cartography (Figure 1).

In a field crossed by utopian and pseudo-scientific discourses, a theory of digital communication should delimit a discourse territory and construct a clear set of definitions. In other words, it should define what to talk about, how to talk about it and who the interlocutors should be. Like traditional communication theory, digital communication theory can also be considered a 'metadiscourse' or a 'dialogical-dialectical disciplinary matrix' (Craig, 1999) composed of different interlocutors and approaches. Theoretical reflections about digital communication should be interdisciplinary and open to different kinds of contributions in the same way that the 'old' TMC were.

Past and present conversations about new media and cybercultures show that scientific dialogues about digital communication should pay more attention to their interlocutors. In other words, researchers should activate careful 'theoretical listening' when they participate in certain conversations. The cyberculture melting pot has been a good source of questions and challenges for scholars but a weak basis for the construction of theoretical reflection about digital communication. The only way to reach the second step of Craig's agenda for future work – the *creation* of new theories – is to maintain high quality conversations with a broad range of interlocutors.

In this context the scientific conversations about digital communication should pay attention to incorporating new interlocutors, such as social networking (Newman et al., 2006) and mobile media (Groebel et al., 2006), which have probably been the most active areas of the socio-technological system since the beginning of the century. The explosion of social networks definitively broke the hegemony of the one-to-many system, and mobile communication is changing the dynamics of content production, distribution and consumption. Theoretical and empirical research about these two subjects
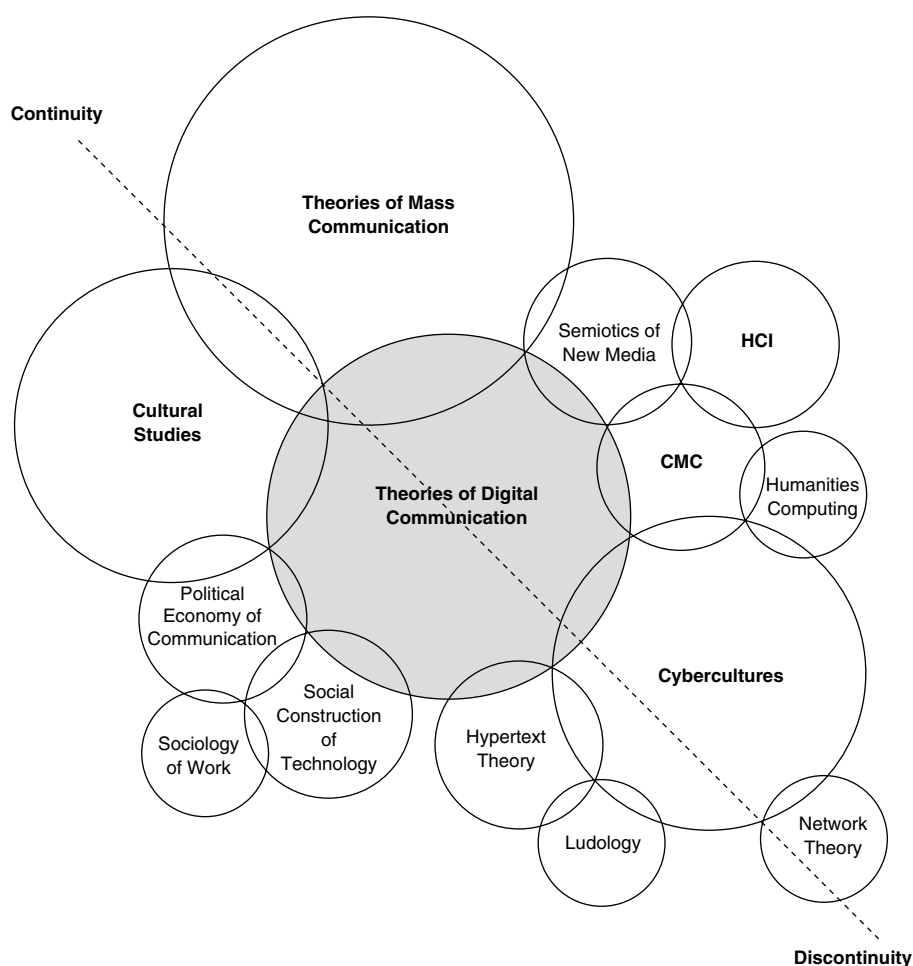
• Figure 1   Map of digital communication theoretical conversations

would be necessary for upgrading the map proposed in this article, identifying new interlocutors and consolidating the scientific conversations about digital communication.

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