

Media ecology. Map of a theoretical niche

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Abstract

The article introduces media ecology within the context of 20th century communication theories and reflects on its potential for understanding contemporary media mutations. The first section maps out the development of the field from its very beginnings, then continues with contributions from the founding fathers (Marshall McLuhan, Neil Postman, Walter Ong), concluding with the new generation of media ecologists. The second section analyses the basic principles of media ecology. The article concludes by briefly reflecting on the scientific possibilities of media ecology to understand the current processes that affect the media ecosystem.

Key words

Media ecology, communication, literacy, orality, technology, transmedia, convergence, McLuhan, Postman, Ong.

Resum

L'article presenta l'ecologia dels mitjans (media ecology) en el context de les teories de la comunicació del segle xx i reflexiona sobre el seu potencial per comprendre les mutacions actuals del sistema de mitjans. La primera secció en determina el desenvolupament a partir dels seus pioners, continua amb les aportacions dels pares fundadors (Marshall McLuhan, Neil Postman i Walter Ong) i acaba amb la nova generació d'ecòlegs dels mitjans. La segona secció analitza els principis bàsics de l'ecologia dels mitjans. A la part final, es reflexiona breument sobre les possibilitats científiques de l'ecologia dels mitjans per comprendre els processos actuals que viu l'ecosistema de mitjans.

Paraules clau

Ecologia dels mitjans, comunicació, escriptura, oralitat, tecnologia, transmèdia, convergència, McLuhan, Postman, Ong.

Introduction¹

What is a *theory*? According to the Spanish Royal Academy's Dictionary, a theory can be – simultaneously – speculative knowledge independent of all application, a series of laws that are related to an order or phenomenon, a hypothesis whose consequences are applied to a science (or an important part of it) and, for the Ancient Greeks, a religious process. As we can see, a theory covers anything from scientific explanations (of empiric or speculative origins, or so-called *scientific theories*) to religious practices. Etymologically, *theory* derives from the Greek for *observe* and is related to the action of *looking* or *seeing*. It comes from *theoros* (spectator), comprising both *thea* (a view) and *horar* (to see). In this article, I wish to re-examine the idea of *theory*, not so much related to seeing but closer to hearing: theory understood as a conversational field where different but more or less competent individuals talk about a specific theme. In other words, theories understood as something performed. If, as Austin (1982) said, we can make things with words, then scientists *make theories*. Within this context, analysing conversations is essential to understanding a scientific domain.²

Where are theories talked about? Universities, books and sci-

entific journals, research centres and conferences all go to make up organisational settings where scientific discourse is produced, circulated and interpreted. Scientists are not limited to exchanging words: they also discuss hypotheses; they argue; they arrive at agreements – the so-called *scientific consensus* – and make compromises. From this perspective, a scientific field is more than a space where conflicts appear and different players make their symbolic stakes (Bourdieu 1999): it is also a network of conversations, a fabric of linguistic compromises – in the sense of the theory of speaking acts (Searle 1990; Austin 1982) – where these players define what kind of interaction they wish to hold with each other, in which class of conversation they are interested in taking part and how they will carry out these conversations. If we want to understand the activity of a scientific field, we need to look at their discussions, identify the speakers and listeners that go to make up the network of conversations and understand the acts of speaking and listening that take place inside this part of the semiosphere (Lotman 1996).

Communication theories constitute a discursive field characterised by its heterogeneity. According to R.T. Craig:

“The various traditions of communication theory each offer distinct ways of conceptualizing and discussing communi-

cation problems and practices. These ways derive from and appeal to certain commonplace beliefs about communication while problematizing other beliefs. It is in the dialogue among these traditions that communication theory can fully engage with the ongoing practical discourse (or metadiscourse) about communication in society” (1999, 120).

It could also be said that communication theories have been nothing more than a long conversation aimed at clarifying the meaning of the word *communication* (Scolari 2008).

Communication theories have been classified in different ways, based on their original discipline (sociology, psychology, anthropology, etc.); their explanatory system (cognitive, systemic, etc.); their organisational level (interpersonal, group, institutional, mass, etc.); their epistemological premise (empirical, critical, etc.) or their implicit conception of communicational practice (rhetoric, semiotic, phenomenological, etc.) (Craig 1999). In addition to considering theories as conversation, this article also proposes a new classification: *generalist* theories and *specialised* theories.

Generalist theories propose building integrating or global tables for all the processes that affect the communication world. Although a theory *that explains everything* is unimaginable, it is obvious that some theoretical constructions tend towards integration and generate an explanatory model of greater scope. Amongst the generalist theories, the Political Economy of Communication and Culture covers communication production, distribution and consumption processes without ignoring an analysis of cultural goods (Mosco 2009; Golding and Murdock 1997). In its own way and time, Shannon and Weaver’s Information Theory also proposed a very simple explanatory generalist model, while including all communication process elements (transmitter, channel, message, receiver, etc.).

Specialised theories focus on one particular aspect or process of communication and leave others outside their explanatory model. Theories of limited effects, of news-making, agenda-setting or semiotic-textual models are a type of theoretical construction that attempts to explain a smaller area of the communication universe. On the other hand, scientific discourses on communication have always shown a tendency towards speaking about the mediums in an isolated way: studying “television”, “radio”, “cinema”, etc. Semiotics have also followed the same route; this is why a “semiotics of television”, a “semiotics of cinema”, etc, exists.³

If we base ourselves on this opposition between generalist and specialised theories, it will not take us long to find media ecology amongst the former: this is an expanded theory that covers, depending on the theory-statesperson of choice, almost all aspects of communication processes, from relationships between the media and the economy to the perceptive and cognitive transformations undergone by individuals after being exposed to communication technologies. On the other hand, media ecology does not focus on one medium in particular – it

is a theory that covers all media in all aspects. Nor is it limited in time: its reflection starts with the transition from orality to literacy and stretches into our agitated days of digital life.

1. Media ecology: McLuhan and his predecessors

Generally, when one talks of the “invisible university” one is thinking of the group organised around George Bateson, Paul Watzlawick, Ray Birdwhistell and Edward Hall in the 1970s. However, media ecology also suffered a period of academic ostracism, which condemned it to invisibility for some years. The famous monograph

Ferment in the Field in the *Journal of Communication* (1983) about the state of the sector ignored it completely, and something similar happened a decade later in *The Future of the Field I and II* (1993). Corseted between empirical-administrative research and critical approaches, there was somewhat of a delay in media ecology finding its place under the academic spotlight. However, little by little, media ecologists were gaining territory and nowadays have their own organisation (the *Media Ecology Association*), a scientific publication (*Explorations in Media Ecology*) and a space in organisations such as the *International Communication Association*. In this section, we will take a quick look back over the history of this trend of communicational thinking.

The consolidation of an ecological vision for media and communication ran parallel to the diffusion of ecologist ideas from the 1960s. Although the concept of media ecology was officially introduced by Neil Postman in a talk for the National Council of Teachers of English in 1968, Postman himself recognized that Marshall McLuhan had used it at the beginning of that decade, when the Canadian’s brilliance was at its brightest (*The Gutenberg Galaxy* is from 1962 and *Understanding Media* from 1964). However, other researchers prefer to award the distinction of semantic coining to Postman (Lum 2006, 9). Whatever the case, during his talk, Postman defined media ecology as “the study of media as environments”. It can be said that Postman brought about the shift from metaphor to theory or, better, the journey from a purely metaphoric use of the term media ecology to the start of the delimitation of a specific scientific field. Postman fought hard for the new concept: in 1971 he created the first degree in media ecology at New York University, thereby providing media ecology with its first step towards academic institutionalisation.

Beyond the semantic origin of media ecology, it’s clear that this conception, which aims to integrate different components and processes from the techno-social-communicational sphere, did not arise from spontaneous generation nor from a stroke of genius from McLuhan or Postman. As Borges maintained about Kafka and his predecessors (how many writers were unwittingly Kafkaesque before Kafka was born?), we can also identify a series of researchers who were ‘McLuhanesque’ before McLuhan himself.

1.1. The predecessors

All texts dedicated to media ecology almost unanimously recognise the existence of a first generation of predecessors. By the beginning of the 1970s, the mathematician Harold William Kuhns (not to be confused with the epistemologist Thomas Kuhn) had already defended the legacies of Lewis Mumford, Jacques Ellul, Siegfried Giedion, Norbert Wiener, Harold Innis, Marshall McLuhan and Richard Buckminster Fuller in *The Post-Industrial Prophets: Interpretations of Technology* (1971). This list could be completed with other predecessors such as Eric Havelock. We will continue by summarising some of the most noteworthy contributions.

- **Lewis Mumford (1895-1990):** Media ecologists do not hesitate to consider Lewis Mumford's *Technics and Civilization* (1934) as the great founding work in the field. Throughout his life, Mumford developed an investigative, inspirational, ecological programme based on the following points: urbanisation / mass communication / technology. *Technics and Civilization* provided an integrated picture of humanity's technological evolution, beginning with the *eotechnical* phase (craft traditions), continuing with the *paleotechnical* (industrial society based on steam machines) and the *neotechnical* (society based on electricity). Mumford suggested a parallelism between the organic and the technical, making him a pioneer in proposing an ecological vision of technological culture based on the concepts of life, survival and reproduction. This supersedes mechanical focuses based on concepts such as order, control, efficiency and power. But Mumford's *technorganic* idea was nothing if not ingenuous, especially since, after the Second World War, he questioned the growing distance between the biological and the technological due to savage mechanization and industrialization processes (Strate and Lum 2006).

- **Jacques Ellul (1912-1994):** Better known for his sociological contributions than for his work on communications, Jacques Ellul tried to combine Marxism and Christianity in the same theoretical vessel. His preoccupation with dehumanisation places him amongst the founding fathers of media ecology. Two works go to make up key references for media ecology researchers: *La technique ou l'enjeu du siècle* (1954) and *Propagandes* (1962). Rather than being an anti-technological luddite, Ellul questioned replacing lifelong moral values with technical ones; with regard to propaganda, he was worried by the persuasive power of images against the more traditional forms of communication based on words and debate. It could be said that Ellul preferred *the power of the word over the power of the image*, as the latter was charged with negative connotations. Despite some discrepancies – Ellul considered that McLuhan insisted too much on the media while leaving social aspects to one side, while McLuhan and other researchers such as Walter Ong did not promote image over word but orality over writing – Ellul's eclectic and interdiscipli-

nary work became an essential reference for media ecologists (Kluver 2006; Christians 2006).

- **Harold Innis (1894-1952):** Together with Marshall McLuhan, Harold Innis is considered the other great representative of the Toronto School. Some well-known media ecology researchers such as Neil Postman or James Carey readily consider Innis the true revolutionary that gave the discipline its definitive form. Trained in political economics – his first works are dedicated to an analysis of the railway system (*A History of the Canadian Pacific Railroad*, 1923) and the fur trade (*The Fur Trade in Canada*, 1930) – as time passed, he gradually shifted his integrating, systemic gaze towards the field of communication (*Empire and Communications*, 1950; *The Bias of Communication*, 1951). The importance of Innis' contribution to media ecology is undeniable: the Canadian was the first to put communication processes at the centre of history. In other words, Innis moved from analysing the economy of the railways and fur trade to concentrating on technologies that allowed the flow of information and knowledge. His perspective helped to link, for example, the development of the telegraph with the press in the 19th century and the growing demand for new information, an analysis that McLuhan brought to its utmost consequences. In *Empire and Communications*, Innis relates the stories of Babylon, Egypt, Greece, Rome and the Middle Ages from the viewpoint of their communication systems, covering the development from clay tablets and papyrus to the printed book.

Eclipsed by the international fame of fellow Canadian Marshall McLuhan, Harold Innis's fundamental consideration gradually acquired warranted recognition within and outside the confines of media ecology. One could say that their approaches were complementary to a certain extent: while Innis's vision linked communication technology to social and economic organisation, McLuhan's connected the media with sensory organisation and individual thought (Heyer 2006).

- **Eric Havelock (1903-1988):** The link between Harold Innis and Marshall McLuhan would not be complete without mentioning the work of Eric Havelock, a British researcher and expert in classical culture who also often visited the University of Toronto between 1927 and 1947. In every way, Havelock should be considered the leading expert in the transition from orality to literacy in Greek society; his book on the transformations of Greek culture since the consolidation of literacy (*Preface to Plato*, 1963) profoundly influenced Harold Innis, Marshall McLuhan and Walter Ong.

1.2. The Founding Fathers

The boundary between predecessors and founding fathers is made clear by the explicit application of ecological metaphor to the media. However, there are researchers who, for a series of chronological, scientific and discursive reasons, are located at a frontier zone between the predecessors and founding fathers.

For example, Walter Ong – a key player in media ecology for having developed, amongst other things, the concept of *secondary orality* – did not speak directly about “ecology” in his texts about the contrasts between orality and literacy. So why not place him among the predecessors? For two reasons. First, because although he had published some works of great relevance in the 1960s, the most noticeable contribution by Walter Ong was *Orality and Literacy* in 1982. On the other hand, his doctoral thesis, dedicated to the poetry of Gerard Manley Hopkins, was supervised at St. Louis University by a young, studious Canadian called Marshall McLuhan in the 1940s.

It's obviously not easy to differentiate or distinguish between academic generations: rather than a lineal flow of scientific debates, they go to make up a semiotic network of continuous and often simultaneous appropriations, deviations and reinterpretations. Next we will consider the founding fathers of media ecology.

- **Marshall McLuhan (1911-1980):** What can be said about Marshall McLuhan that has not already been said? McLuhan had a double effect on media ecology: on one hand he presented an ecological viewpoint of contemporary media processes both inside and outside the scientific arena; on the other hand, his fame was also counterproductive as it eclipsed other media researchers (not only in media ecology) who worked in silence and rejected the Canadian's effervescent declarations. Within the context of 1960s mass culture McLuhan was, undoubtedly, the paradigm of media researchers and enjoyed media fame similar to other popular icons such as Andy Warhol or Bob Dylan. This gained him no small number of enemies in academia. Such was the envy of some University of Toronto colleagues that McLuhan asked his students not to cite him in theses and dissertations to avoid reprisals (Morrison 2006, 169).

As has already been mentioned, the concept of media ecology was born out of a conversation with his colleagues (Morrison 2006). However, from a more general perspective we should also acknowledge the fact that it was McLuhan who updated and integrated within one approach the ideas of some of his predecessors such as Lewis Mumford, Sigfried Giedion, Harold Innis and Eric Havelock. McLuhan never tired of insisting that the media together form a sensory atmosphere or environment (a *medium*) in which we all move; like a fish in water, we do not realise their existence until we stop perceiving them for some reason. His ecology is totally biased towards the perceptions of subjects: we humans model communication instruments but they, at the same time, remodel us.

Marshall McLuhan's other noticeable trait concerned his explosive forms of expression: his writing in mosaics, his ability to create unforgettable slogans and concepts – such as *the medium is the message* or *global village* – and the permanent inter-textual jump between the media, the literary and the technological make him an indispensable figure in the study of twentieth-century mass communication. Some of his works have become essential references, even for those who do not

share his view, from *The Gutenberg Galaxy: The Making of Typographic Man* (1962) to *Understanding Media: The Extensions of Man* (1964), *The Medium is the Message: An Inventory of Effects* (1967, with Quentin Fiore) and *Laws of Media: The New Science* (1988, with Eric McLuhan).

At the beginning of the 1990s, when his detractors had forgotten about him, the appearance of the World Wide Web and the global consolidation of television channels such as MTV and CNN brought about a revival of Marshall McLuhan's ideas, a process which culminated in his canonisation by *Wired* magazine (which voted him *Patron Saint* in its first edition in 1993). From then on McLuhan's works have initiated a process of re-appropriation in digital format, which we will discuss in the third section of this article.

- **Neil Postman (1931-2003):** Although he is a well-known academic heavyweight in the Anglo-Saxon academic world, Neil Postman never had the media presence achieved by Marshall McLuhan. As I have already mentioned, McLuhan's overexposure in some ways eclipsed researchers of undoubted importance such as Postman himself.

Coming from an education background (more specifically, English language teaching), Neil Postman was one of the great thinkers in the media from 1970 to 2000. In such works as *Amusing Ourselves to Death: Public Discourse in the Age of Show Business* (1985), *Technopoly: the Surrender of Culture to Technology* (1992) or *The End of Education: Redefining the Value of School* (1995) Postman developed an ecological, critical and ethical view of the American media system (Gencarelli, 2006). According to Postman, technological change was not additive but ecological, and he explained this by using the following example: if we leave a drop of red ink in a glass of water it will dissolve into the liquid, colouring each of the molecules. That is what Postman understands by *ecological change*. The arrival of a new medium is not limited to just being added to what already exists: it changes everything. In 1500, after the invention of the printing press, there was not an 'Old Europe' with a press: there was a different Europe. After the arrival of television, the United States was not the USA plus television. The new medium gave a new colour to each political campaign, home, school, church, industry, etc, of the country (Postman 1998).

The figure of Postman is fundamental to media ecology, not only for his theoretical ideas but also for having created, in 1971, the first degree course in media ecology at the Steinhardt School of Education (New York University). Postman trained, inspired and worked with distinguished researchers such as Paul Levinson, Joshua Meyrowitz, Jay Rosen, Lance Strate and Dennis Smith.

- **Walter Ong (1912 – 2003):** As we have already indicated, *Orality and Literacy: The Technologizing of the Word* (1982) is a key reference in media ecology. Together with Eric Havelock, the Jesuit priest Walter Ong is a great expert on the

transition from orality to literacy; his half a century of research analysed this transition in its different dimensions: literary, theoretical, social, cultural, historical and even biblical. Some of his works before *Orality and Literacy* included *The Presence of the Word* (1967), *Rhetoric, Romance, and Technology* (1971) and *Interfaces of the Word* (1977) (Soukup 2005).

The generation of media ecology's founding fathers is made up of many researchers and obviously the list does not end with Marshall McLuhan, Neil Postman and Walter Ong. A more detailed study than the present article would, for example, include **Edmund Snow Carpenter (1922-)**, co-editor, together with McLuhan, of the magazine *Explorations*, whose best articles were published as a collection in *Explorations in Communications* (1960), or **James W. Carey (1934-2006)**, a researcher who can be considered the bridge between North American media ecology and British Cultural Studies. Carey rejected the dominance of quantitative methods but at the same time distanced himself (albeit recognising the value of his contributions) from the sometimes speculative ideas of Marshall McLuhan (Wasser 2006; Vannini et al 2009).

1.3. The new generation

In June 2000, the first *Media Ecology Association (MEA)* convention took place at Fordham University (New York) and, two years later, the first volume of *Explorations in Media Ecology* appeared – the Association's scientific publication. The conventions continued: the last one occurred in St. Louis (Missouri) in 2009 and the 2010 event will be hosted by the University of Maine. Behind this feverish institutional activity is a new generation of researchers trained, when they were young, by the founding fathers McLuhan, Neil Postman and Walter Ong.

Among the most prominent exponents of the new generation is **Lance Strate**, professor of Communication and Media Studies at New York's Fordham University. Strate was the first president of MEA and one of its most active militants. His field of research covers many areas, from epistemology and the historic roots of media ecology to the impact of new information technologies and popular forms of mass communication.

Another distinguished member of the new generation is **Joshua Meyrowitz**. His book *No Sense of Place: The Impact of Electronic Media on Social Behaviour* (1985) is still an invaluable reference to reflect on mass media and communications. Sadly never translated into Spanish or Catalan, *No Sense of Place* is a text that has not lost its validity in spite of the transformations media ecology has undergone since the World Wide Web.

While Strate and Meyrowitz come from Neil Postman's American circle, **Robert Logan** studied, in Toronto, the effects of literacy alongside Marshall McLuhan at the end of the 1970s. The fruit of that investigation was *The Alphabet Effect* (1986), a text that was followed by several other works in the spirit of McLuhan, such as *The Sixth Language: Learning a*

Living in the Internet Age (2000) and *The Extended Mind: The Emergence of Language, the Human Mind and Culture* (2007). These days Logan is one of the most faithful interpreters of this multifaceted, across the board view that characterised Marshall McLuhan's intellectual production.

Finally, another fundamental reference in post-McLuhan studies is **Derrick de Kerkhove**, Director of the McLuhan Program in Culture & Technology at the University of Toronto since 1983 and recognised moderniser of the Canadian's work. We will not dig deeper into Derrick de Kerkhove's contributions here, although he is perhaps the best known media ecologist in Latin America out of all the new-generation researchers (de Kerkhove 1999a, 1999b), because he did not play an active role in the academic institutionalisation of media ecology (although from an epistemological perspective his work fits perfectly within this theoretical field).

This brief reference to the third generation is incomplete and unjust since it does not take into account many researchers who participated in the academic community built around the *Media Ecology Association*. On the other hand, a fourth generation of young researchers will not delay in achieving academic visibility and continue exploring the possible paths opened up by media ecology.

2. Media ecology: an intertextual mosaic

In this section we will provide a brief synthesis of the fundamental concepts and postulates of media ecology. Following a methodology inspired by McLuhan, we will build this section from a mosaic of ideas, phrases and expression from the principal exponents of media ecology:

- “Media ecology is the study of media as environments” (Postman, *The Reformed English Curriculum*, 1970).
- “Plato was thinking of writing as an external, alien technology, as many people today think of the computer” (Ong, *Orality and Literacy*, 1982).
- “One such perspective, or emerging metadiscipline, is media ecology” (Nystrom, *Towards a Science of Media Ecology*, 1973).
- “We put the word “media” in the front of the word “ecology” to suggest that we were not simply interested in media, but in the ways in which the interaction between media and human beings give a culture its character and, one might say, help a culture to maintain symbolic balance” (Postman, *The Humanism of Media Ecology*, 2000).
- “Any technology tends to create a new human environment. Script and papyrus created the social environment we think of in connection with the empires of the ancient world (...) Printing from movable types created a quite unexpected new environment: it created the public” (McLuhan, *The Gutenberg Galaxy*, 1962).
- “The surge of modern science undoubtedly depended, to a

great extent, on the joint effect of the technique of the Indo-Arab system of numeration and the technique of the Greek alphabet, multiplied by the introduction of the printing press" (Havelock, *Origins of Western Literacy*, 1976).

- "Technologies are not mere exterior aids, but also interior transformations of consciousness, and never more than when they affect the word" (Ong, *Orality and Literacy*, 1982).

- "The medium is the message" (McLuhan, *Understanding Media*, 1964)

- "(An environment) structures what we can see and say and, therefore, do. It assigns roles to us and insists on our playing them. It specifies what we are permitted to do and what we are not. Sometimes, as in the case of a courtroom, or classroom, or business office, the specifications are explicit and formal. In the case of media environments (e.g., books, radio, film, television, etc.), the specifications are more often implicit and informal, half concealed by our assumption that what we are dealing with is not an environment but merely a machine. Media ecology tries to make these specifications explicit" (Postman, *The Reformed English Curriculum*, 1970).

- "One thing we can never see is the element in which we move" (McLuhan, *The Marfleet Lectures*, 1967).

- "Every technology has a philosophy which is given expression in how technology makes people use their minds, in what it makes us do with our bodies, in how it codifies the world, in which our senses it amplifies, in which of our emotional and intellectual tendencies it disregards" (Postman, *Five Things We Need to Know About Technological Change*, 1998).

- "All technological change is a trade-off ... Technology giveth and technology taketh away. This means that for every advantage a new technology offers, there is always a corresponding disadvantage ... Culture always pays a price for technology" (Postman, *Five Things We Need to Know About Technological Change*, 1998).

- "As a general rule, textualists identify writing with printing and rarely – or never – even dare to take a look at electronic communication" (Ong, *Orality and Literacy*, 1982).

- "Whether there ever will be TV in every classroom is a small matter: the revolution has already taken place at home. Television has changed our sense-lives and our mental processes" (McLuhan, *Understanding Media*, 1964).

- "The media tend to become mythic (...) common tendency to think of our technological creations as if they were God-given, as if they were a part of the natural order of things." (Postman, *Five Things We Need to Know About Technological Change*, 1998).

- "Electronic technology has brought us into the age of 'secondary orality'. This new orality has striking similarities with the old in this participatory mystique, its foresting of a communal sense, its concentration on the present moment and even its use of formulas" (Ong, *Orality and Literacy*, 1982).

- "No medium has its meaning or existence alone, but only in constant interplay with other media" (McLuhan, *Understanding Media*, 1964).

- "Media ecology is the study of media environments: the idea that technology and techniques, modes of information and codes of communication play a leading role in human affairs. Media ecology is the Toronto School and the New York School. It is technological determinism, hard and soft, and technological evolution. It is media logic, medium theory, mediology. It is McLuhan's studies, orality-literacy studies, American cultural studies. It is grammar and rhetoric, semiotics and systems theory, the history and the philosophy of technology. It is the postindustrial and the postmodern, the preliterate and prehistoric" (Strate, *Understanding MEA*, 1999).

- "Media ecology is very much in its infancy. Media ecologists know, generally, what it is they are interested in – the interactions of communication media, technology, technique and processes with human feeling, thought, value and behavior – and they know, too, the kind of questions about those interactions they are concerned to ask. But media ecologists do not, as yet, have a coherent framework in which to organize their subject matter or their questions. Media ecology is, in short, a preparadigmatic science" (Nystrom, *Towards a Science of Media Ecology*, 1973).

- "Technologies are artificial, but – paradox again – artificiality is natural to human beings" (Ong, *Orality and Literacy*, 1982).

- "Media ecology looks into the matter of how media of communication affect human perception, understanding, feeling and values; and how our interaction with media facilitates or impedes our chances of survival. The word 'ecology' implies the study of environments: their structure, content and impact on people. An environment is, after all, a complex message system which imposes certain ways of thinking, feeling and behaving." (Postman, *The Reformed English Curriculum*, 1970).

- "Today, the ordinary child lives in an electronic environment. He lives in a world of information overload" (McLuhan, *Cybernetics and Human Culture*, 1964).

"Media ecology tries to find out what roles media force us to play, how media structure what we are seeing, why media make us feel and act as we do" (Postman, *The Reformed English Curriculum*, 1970).

In brief, what do media ecologists talk about? The following diagram – composed from a series of classic articles on media ecology written by Marshall McLuhan, Neil Postman, Walter Ong and other representatives of the new generation – serves to visualise the major themes of theoretical conversation for this field of communication knowledge.

Media ecology can be synthesised into one basic idea: technologies (in this case communication technologies, from writing to digital media) generate environments that affect those who use them. Some ecologists such as Neil Postman developed a moral interpretation of the new forms of communication, for example criticising the advance of television over the practices of writing, while others such as Marshall McLuhan

out the academic prejudices that isolated him from some colleagues in the 1960s, rediscovering Postman's analysis of education and communication in the midst of a crisis in schooling, or going back to the astute reflections of Ong or Havelock on the transition from orality to literacy can offer us new key interpretations for the understanding of the shape being adopted by the media ecosystem in the 21st century.

Notes

- 1 The first part of the Introduction is based on Scolari (2009, 2008).
- 2 A brilliant semiotic reflection on conversations between scientists (and between scientists and the rest of society) can be found in Verón (1999).
- 3 Some indispensable bibliographic references in the field of communication theories: Rodrigo and Estrada, 2009; Wolf, 1987, 1994; Moragas, 1981.

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