ONLINE JOURNALISM:
RESEARCH METHODS

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(eds.)

ONLINE JOURNALISM: RESEARCH METHODS
A multidisciplinary approach in comparative perspective

Contents

Introduction

Journalism on digital networks, and specifically on Internet [1], is a relatively recent phenomenon, whose spread began in approximately 1994, in parallel to that of the World Wide Web. Study of this new communicative phenomenon began simulta neously in several countries. This, in its turn, was helped by the new possibilities for communication amongst academics - electronic mail, predating the WWW, was, and is, one of the most widely used tools of the university community. The spread of these n ew forms of global communication helped to raise mutual awareness between research groups, making it possible to form increasingly broad and cohesive net - works.

Brazil and Spain are two countries where a determined effort has been made to understand the phenomenon of online journalism and its many di - mensions. The paths followed by the research groups of the two countries ran in parallel until, at a certain point, they came together due to the in - creasingly evident need for transnational collaboration. Ther e is a key date in both Brazil and Spain that marks the start of studies of Internet journalism: 1996. That was the year when two lecturers at the Federal University of Bahía (Brazil), Marcos Palacios and Elias Machado, published their pioneering work *Manual de jornalismo na Internet* [Manual of Journalism on Internet]. In the same year, several lecturers at the University of the Basque Country (Spain), including Koldo Meso and Javier Díaz Noci, published a work with similar characteristics *El periodismo electrónico. Información y servicios en la era del ciberespacio* [Electronic Journalism. News and Services in the Age of Cyberspace]. These authors are being joined by others, and there has been a steady production of many articles and books on digital journa lism.

Undertakings that were initially scattered and cautious are now being combined in the two countries and networks are being formed that are de - veloping different research projects covering different aspects of the study of this phenomenon, which is be coming increasingly familiar. In the belief that unity brings strength, and out of the need to make their existence and work known internationally, an agreement to consolidate the research networks was signed in 2006 with the support of the Ministries of E ducation of both

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[1] This is known by different names. In English the customary term is *onlne journalism*. In Spanish the most widely used terms are *periodismo digital* (*digital journalism*) and *ciberperiodismo* (*cyberjournalism*), with the latter preferred by Spanish researchers. In Portuguese the term employed is *webjornalismo* (*webjournalism*).

countries[2]. This agreement includes a total of fifty researchers, coordinated by Marcos Palacios, of the Federal University of Bahía (Brazil), and Javier Díaz Noci, of the University of the Basque Country (Spain). The network has a permanent character and its aim is to expand by means of different initiatives in both Europe and Latin America. In fact, there has been collaboration between universities of the two continents through initiatives like the European COST and Alfa actions. We are thus endorsed by our experience and by works that have received recognition from different institutions.

One of the first concerns of this network, and its different members, is to identify the most important questions that can be detected in the study of journalism on Internet and, consequently, to apply suitable methodologies for their research. We believe that this is the first step in building a solid and coherent field of study. And we are thus dedicating our initial efforts to this, with the aim, once we have consolidated this essential starting point, of carrying out comparative studies. Only through knowledge of what has already been achieved internationally, and the application of standardised methods and techniques, will it become possible to realise works of similar quality, in order to establish a dialogue with our colleagues of the international scientific community.

That is the reason for this book. It is intended as a letter of introduction, and also as the first link in what we hope will be a long chain, the cornerstone of a building that will be able to withstand the winds of academic fashion. We believe that this new form of expression, digital journalism, is here to stay and that its future development must be accompanied by appropriate academic monitoring.

This book is also an invitation. An invitation to dialogue and discussion, essentially with students, professionals and researchers. We are conscious that we are far from having exhausted the possible questions and areas of activity - not even the methodological points of view. Nor is that our intention. On the other hand, we present a series of questions that we consider to be preferential for our research, relevant questions with an international wealth of bibliography and methodology that should be born carefully in mind. This is also a series of questions that have already been dealt with to a

[2] This was the project CAPES/DGU 140/07 in Brazil, and the program PHB2006-0004-PC in Spain, titled *Periodismo en internet: estudio comparativo de los cibermedios España-Brasil* [Journalism on Internet: Comparative Study of the Online Media Spain-Brazil]. As a result of this, the I Brazil-Spain International Symposium on Online Media (Spanish Ministry of Science and Education code PHB2006-0005) was held from 3rd to 7th December 2007 in the Communications Faculty of the Federal University of Bahía in Brazil, dealing with research methodology in online journalism. Similarly, as a corollary to the Symposium, the course on *Tendências e cenários futuros no jornalismo digital* [Tendencies and Future Scenarios of Digital Journalism] was held at the same centre from 10th to 14th December 2007.

greater or lesser extent in the international scientific community. They are thus questions where dialogue is clearly possible and desirable .

It is not our intention to have the final say. Rather, to give an account of efforts made and others yet to be made, of a work in progress. To this end, the first seminar-symposium on research methodologies in online journalism was held at the Federal University of Bahía in December 2007. The complete proceedings have been published in Portuguese and Spanish by that university. This common proposal has emerged from that first meeting.

The book opens with a chapter dedicated to media typology written by Guillermo López, Jaime Alonso and Marcos Palacios. The next chapter, on genre typology in digital journalism, is the work of Lia Seixas, Javier Díaz Noci, Xosé López, Concepción Edo, Ainara Larrondo and Tattiana Teixeira, who wrote the section on infographics. Luciana Mielniczuk, Javier Díaz Noci and Ramón Salaverría prepared the chapter dedicated to narrativity. The chapter on participatory journalism was written by Claudia Cuadros, Koldo Meso, André Holanda, Marcos Palacios, Jan Alyne Barbosa, Bella Palomo and David Domingo. The authors of the chapter on database architecture and are Xosé Pereira, Manuel Gago, Suzana Barbosa, Beatriz Ribas and Carla Schwingle. The part dealing with design is the work of Bella Palomo and María Ángeles Cabrera, and that dealing with reading is by Graciela Natansohn and Javier Díaz Noci. Pere Masip, María Á. Cabrera, David Domingo, José Larrañaga, Xosé López, Xosé Pereira, Koldo Meso, Zélia Leal Adghirni, Thaïs de Mendonça Jorge and Fábio Henrique Pereira worked on the methodologies applicable to the study of production routines. The chapter concerning research in the processes of media convergence, which is of such importance for the digital media, was written by José Alberto García Avilés, Pere Masip, Ramón Salaverría, Charo Sádaba, Idoia Portilla and Beth Saad. The perspective on information flows on digital networks, and the methodological approach to this, is the work of José Afonso da Silva Junior. Elias Machado, Diego Kerber, Elaine Manini, Xosé López, Xosé Pereira, Moisés Limia Fernández, Carlos Toural and Pere Masip are responsible for the chapter on the teaching of online journalism and for proposing study methodologies.

The editors, Javier Díaz Noci and Marcos Palacios, were helped by Pere Masip, Koldo Meso and Guillermo López in the tasks of editing the book. The necessary process of refining and standardising very diverse texts, all of them interesting and containing relevant contributions, has resulted in these chapters that while brief are very dense. Proof of this is the abundance of citations and the bibliography, which we have chosen to place at the end of the book. It seemed essential to try and give an account not only of what is being done by the authors of the book, but also by those who have worked on this question internationally. Our contributions have been built on theirs, and we hope that using our modest proposals as a foundation, others will develop further contributions. The editors of the book assume responsibility for all the mistakes and shortcomings the book might contain. Its possible attainments are due to the dedicated work of all the authors, to whom are owed the merits this book might contain.

Javier Díaz Noci
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Salvador de Bahía,
December 2007

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Typology of Online Media

1. INTRODUCTION

There is already consensus, both academic and professional, that Internet publications have acquired a journalistic status at least equivalent to that of other conventional media, such as the press, the radio and the television (Flores Vivar and Miguel Arruti, 2001; Estévez, 2002; Álvarez and Parra, 2004; Meso, 2006). More significant than the increase in the number of digital publications is their qualitative consolidation on the media market. The communication companies now consider Internet as a strategic factor for their future (Cornella, 2002; Cerezo and Zafra, 2003; Aguado, 2004).

The first catalogue of the media present on Internet in Spain was compiled by Armañanzas, Díaz Noci and Meso (1996), who employed the methodological scheme that Jacques Kayser (Kayser, 1974) had established for the analysis of French newspapers, with the introduction of some adjustments. The book *Medios de comunicación en internet* [Mass Media on Internet] (Meso y Díaz, 1997), rather than a catalogue with scientific characteristics, was intended as a repertory, as complete as possible, of the first generation of Spanish online media, or cybermedia. It has been followed by other works of a more local scope (Meso, 2004).

The first database of the Spanish cybermedia was compiled as part of the coordinated project of the Ministry of Science and Technology entitled "The impact of Internet on the mass media in Spain" (the methodological criteria can be found in Salaverría, 2005).

In the Brazilian case, there has been no process of systematic classification of journalistic production on Internet, only fragmentary and barely systematic processes can be found. The *Jornal do Commercio Online*, of the city of Recife (Pernambuco), was the first Brazilian journalistic publication to appear on Internet. Created in 1994, it was distributed through the Gopher of the municipal computer company of Recife. The edition was totally transpositional, consisting of the daily distribution of the first page of the printed edition of this journal and the weekly distribution of the *Cadernos de Informática e Meio Ambiente* [Notebooks on Computing and the Environment].

Internet was still a system that could only be accessed through academic and government institutions, which were linked to the world network through the RNP (*Rede Nacional de Pesquisa* – National Research Network), as a backbone for connecting Brazilian researchers nationally to

Internet. Initially established in only a few Brazilian cities, the RNP had close to five thousand registered users in 1991. The year 1994, a period of marked expansion when close to 400 teaching and research institutions of the country joined the network, saw the inclusion of the majority of universities and government research institutions and the registration of close to 60,000 users.

The exponential growth in the number of users and, in parallel, of newspapers available on Internet occurred from 1995 onwards, with the establishment of commercial Internet networks in Brazil. At the end of 1996, there were 740,000 registered Internet users on the commercial network, a figure which reached 10 million users with home access to Internet in 2000. A master's dissertation, defended by Marcelo Sávio de Carvalho (2006) on the post-graduate engineering program of the Federal University of Río de Janeiro, offers details of the first years of the Web's implementation and growth.

The first attempt to draw up a balance of the situation concerning journalism on Internet took place following the commercial implantation of Internet in the country, as a chapter of a work produced as a manual for journalism students (Machado and Palacios, 1996). The census was not intended to be an exhaustive one, it simply reported on the most important publications. Fourteen newspapers and five weeklies were listed. The publications were described according to the following parameters: 1) historical summary of the project; 2) system of production of the news items; 3) originality of the project; and 4) interactivity with the public.

The following year, André Manta (1997), as part of a work specialising in journalism, carried out at the Federal University of Bahía, prepared a guide to Internet journalism, in which he sought, amongst other things, to list and describe the Brazilian periodical publications. Twenty-nine newspapers were listed.

It was only in 2001 that a more systematic effort was made to create a catalogue and describe the state of the question in online journalism (Mielniczuk, Palacios *et alii*, 2002). By means of a prior approximation taking the form of a census, carried out between August 2001 and August 2002, followed by observations through a unified questionnaire, 44 publications were examined and catalogued. They were identified on the basis of two criteria:

a) Daily editions, freely accessible on Internet, with a prior printed edition.

b) Control of the print run of the printed version by the IVC (*Instituto Verificador de Circulação* – Institute for the Verification of Circulation), the body that checks the volume of circulation of Brazilian newspapers.

As a referential parameter, the system of research employed the work carried out in 1998 in the University of Indiana (United States) by Tanjev Schultz (Schultz, 1999), which had taken a census of 100 American online daily vehicles of a commercial type. While Schultz's research was only centred on the aspect of interactivity, the Brazilian initiative widened the scope of study to include other characteristics identified as specific to online journalism: multimediality, hypertextuality, personalisation and memory. The work was republished in a second version that included seven Portuguese newspapers besides the 44 Brazilian ones (Palacios *et alii*, 2002b).

2. RELEVANCE OF THE TYPOLOGIES

Online media can be classified according to: the objective or aim pursued (Alonso and Martínez, 2003); the public to which they are directed; the application of the professional, structural, editorial and ethical criteria of journalistic activity; the use made of the possibilities offered by cyberspace (López, Gago and Pereira, 2002); and even by the constant renovation or updating of contents.

The University of Santiago has been one of the first to make a classificatory proposal for cybermedia, taking as a reference their level of dynamism, and to this end proposing the design of a test based on a scaled calculation of the "degree of adaptation of hypertextuality, multimediality, interactivity and frequency of updating" (López, Limia, Isasi, Pereira, Gago and Calvo, 2005). This proposal of categorisation responds to an interest in asserting the autonomy of the online media as independent entities with respect to the traditional mass media. A similar concern can be found in the respective research works of the academics Meso (2004) and Díaz Noci, Meso, Larrañaga and Larrondo (2007).

The typologies of cybermedia aim to show taxonomies or classifications of a new communicational reality (the cybermedia) that has arisen under the cover of the Information and Communication Technologies. The relevance of elaborating typologies principally resides in the fact that they serve to structure/organise/understand a reality that, due to its novelty, is dispersed and/or little defined. The present discourse on cybermedia requires the study of typologies since, at present, some of these media are to be found in a more or less consolidated state, while others are still in a phase of definition or conceptualisation.

Sketching typologies of the cybermedia is also useful insofar as they cover three levels of knowledge: firstly, *the initial state of the question* (that is: what those structures that we refer to as cybermedia are); secondly, *what characteristics they possess* (defining/identifying features); and, thirdly, the *dynamics* that are to be found amongst them, that is, what type of relation, influence and interaction predominates amongst them.

And that, amongst other reasons, is because in the scenario we are analysing, characterised as it is by a plurality of forms and levels of communication, the attention traditionally paid to mass communication must necessarily be extended to encompass other proposals that have an increasing presence in the new media.

The mass media extended the frame of reference, frequently separating it into two: the direct cognitive framework, provided by the immediate setting, and corresponding to the sphere of interpersonal communication; and the indirect cognitive framework, mediated technologically and characteristic of mass communication. This is complementary to, and perhaps competes with the preceding framework on the occasions when the two enter into conflict. It should therefore come as no surprise that the science of communication has turned to the analysis of mass communication, and in particular the study of its effects (McQuail and Windahl, 1997).

Nonetheless, in spite of the emphasis on the study of mass communication, the latter is no more than the most visible level of reference of a plurality of communicative forms, which Denis McQuail summarises as the processes of global, institutional/organisational, intergroup, interpersonal and intrapersonal communication (1999: 35-38). Additionally, Enric Saperas (1998: 111-117) underlines the need for the analysis of communication to be widened. He extends it to include the communicative forms that have traditionally been overlooked by research that has concentrated on the effects of mass communication, and he redefines the field of study due to the close interrelation of the different levels and forms of communication in the configuration of communicative processes.

This is exactly the same diagnosis as that made by Josep Gifreu (1996: 60-68), for whom "the social phenomena experienced and known as communicative phenomena cover a great quantity and a very wide variety of situations", which Gifreu divides into four categories: interpersonal communication, group communication, organisational communication and mass communication. Finally, this state of things has led authors like Rodrigo (1989, 2001) and Valbuena (1997) to confirm the previous hypotheses and to configure a framework of study of the Theory of Communication that covers the plurality of communication and does so, besides, starting out from the interrelation amongst the different levels of communication.

This framework of study can only be strengthened, and also made considerably more complex, on the Internet, given that the technological medium includes both those communicative forms characteristic of mass communication and those that belong to the immediate setting (which in their turn can be diversified in several senses). The abovementioned plurality of forms and levels of communication might pose a substantial problem when considered from the perspective of their categorisation within a minimally operative typology (López García, 2005b).

Facing an object of study such as we are analysing here (the typologies of cybermedia), we believe that there should be no pretension or vocation towards closure (that is, any attempt to offer a definitive and conclusive classification). Instead, it is necessary to understand that the greater the number of taxonomies covered, the greater the possibilities of perceiving the global and complex reality of the cybermedia (classified in certain more or less defined categories), as well as their characteristics and the dynamics established amongst them.

3. PROPOSALS FOR A CYBERMEDIA TYPOLOGY

As can easily be intuited, cybermedia typologies vary according to the concept or idea we hold of these media. In a panorama as open, rich and diverse as Internet communication, approaches and definitions concerning what exactly the cybermedia are succeed and – far from causing confusion – complement each other, giving rise to a profuse range of typologies that serve to understand the phenomenon of online communication from different viewpoints.

Below we present a list of some of the main typological proposals of cybermedia that have emerged to date. From our point of view, and without attempting to be exhaustive, it can be said that there are four outstanding lines:

a) Typologies centred on the actions or development of the cybermedia.
b) Typologies centred on models of communication.
c) Typologies centred on the elements that make up the cybermedia.
d) Typologies centred on the aim of the cybermedia.

3.1. Typologies Centred on the Actions or Development of the Cybermedia

By a typology that classifies the cybermedia *according to the actions or development of the cybermedia*, we are referring to those initiatives that classify such media according to how they employ the elements (potentials) that are inherent to them. In this sense, it is highly relevant to consider the proposal made by López García *et al.* (2005), since they carry out a classification according to what they understand as "the level of dynamism of the online media" (2005: 45). They explain this as follows:

> The concept of dynamism, inherent to the very definition of a cybermedium, alludes to the degree of use that the new media make of the possibilities offered by the online format – application of hypertextual, multimedia and interactive techniques and frequent updating.
>
> It is thus practical to determine the level of dynamism of an online medium on the basis of the "degree of adaptation" achieved in the following indicators:
>
> a) Hypertextuality.
> b) Multimediality.
> c) Interactivity.
> d) Frequency of updating (2005: 45).

Finally, the authors explain the relationship between the degree of adaptation and the level of dynamism of the cybermedium:

> The expression "degree of adaptation" refers to the degree to which the potential parts of cyberspace – multimediality, hypertextuality, interactivity and frequency of updating - are adapted to the mould configured by the contents and user of a specific online medium. The greater the "degree of adaptation" achieved by each of the four indicators, the greater the resulting degree of dynamism of the cybermedium (2005: 45).

Besides this typology with its classification according to the level of dynamism, these authors contribute another typology that, in our opinion, is also susceptible to inclusion in what we have established as typologies centred on the actions or development of the cybermedia. In reality, this is a double typology: on the one hand, a typology of cybermedia containing specialist information, and another of cybermedia containing general information.

As the authors point out, Internet has changed the proposals on which the discipline dealing with journalistic specialisation was traditionally based, which divided the object of study into four broad themes: politics, economics, society and culture. It has now become necessary to introduce new categories, such as, amongst others: cybermedia containing economic information, political information, social information, scientific information, health and technical cybermedia, cybermedia containing information on new technologies, etcetera. The authors also explain that another typology that could be applied to the cybermedia containing specialist information would be a generic taxonomy based on the level of dynamism, which we have explained.

With respect to cybermedia containing general information, the authors opt either for a classification based on the degree of dynamism (such as the case of the specialist cybermedia) or for a typology according to geographical criteria, in line with what has traditionally been done with the general press and audiovisual media: "Traditionally, the general press (and not only the printed press, also the audiovisual media) has been classified according to a geographical criterion. So that we can speak about the general press at four levels: national, regional, provincial and local" (López García *et alii*, 2005: 62).

3.2. Typologies Centred on Communication Models

The proposals for classifying cybermedia situated in the study of the communication models found on Internet are highly relevant when the aim is to offer a clarifying perspective on the global working of all the elements (including the cybermedia and other forms of communication) of the World Wide Web. There is a double difficulty: in the first place, the cybermedia and other forms of communication must be identified; and then they must be grouped within the different communication logics or meanings (the different models). Guillermo López García, the author of a typology of this kind, explains this difficulty:

> Offering a clear and systematic compendium of the very diverse forms of communication made possible by the Web … is extremely difficult, if we bear in mind not only the abundance of communicative forms existing on the Web, many of them complementary and interchangeable, but also the fact that this field (the theorisation of the types of content and of the different communication models on the Web) is one of the least studied amongst all of those covered by the subject (López García, 2005a: 16).

Starting from the hypotheses advanced several decades ago by Marshall McLuhan (1996) about the systematic spread of communication technologies and media in everyday life, and taking account of the early typologies concerning communication on Internet devised by Slevin (2002) and Morris and Ogan (2002), the taxonomy of López Escobar distinguishes between interpersonal communication media and collective communication media (López Escobar, 1997: 18-19). Hence, within the first group, he distinguishes between "synchronic communication (chat rooms, P2P networks and network games) and asynchronic communication: e-mail, distribution lists, newsgroups, forums of debate, wikis, surveys and virtual communities" (2005b:79). And within the collective communication media, the author distinguishes between "means of representation: personal pages, weblogs, web pages of associations, institutions and companies" (2005b:80); and "global media: portals and cybermedia" (2005b:81).

Within this general classification, the cybermedia are those websites whose essential aim is the development and transmission of news contents, that is, those websites that play the role of the social mass media on Internet. Their differential characteristics would essentially be: a) primacy of properly journalistic contents (facing other types of offer, such as, for example, the sale of products, discussion spaces, etc.); b) subjugation to current news in their subject matter; and c) use of journalistic and professional criteria in the generation of contents (López García, 2005a: 169-170).

In turn, this author (López García, 2005a: 176-182) establishes several differentiations within the field of the cybermedia:

- On the one hand, a distinction is made between cybermedia that are *the representation on Internet of the "conventional media"* (printed newspapers, radio stations and television channels), which gradually began, as we have seen, to deploy their contents on Internet as well, and those *media exclusively developed on Internet*.

- On the other hand, attention is also paid to the distinction between *general* and *specialist* cybermedia.

- Finally, a differentiation is made according to whether or not the contents of the cybermedium are professional. This difference, which in principle contradicts the third of the specific characteristics of cybermedia that we saw above, arises on Internet with the parallel development of two types of practice: on the one hand, there are the so-called "counter-information" or "alternative communication" media. Such cybermedia not only renounce the criteria of newsworthiness that is traditional in journalism, but also in their management and configuration they work as communities of users – not as media companies – who are nearly always responsible for generating their contents. This happens in media such as Nodo50.org or the different versions of Indymedia. On the other hand, mention should be made of the different practices related to what has come to be called "citizen journalism", which in its most extreme version involves the development of journalistic media through the collaboration of the public. In Spain we do not find any big citizen media apart from the "alternative communication" media we mentioned. Furthermore, some of the experiments carried out in this respect (such as *Reportero Digital* [Digital Reporter] which emerged from *Periodista Digital* [Digital Journalist]) had shortcomings in terms of their success with the public, audience involvement and quality of content. However, it is increasingly normal for the big media to involve the public in generating a part of their content (as occurs, for example, with the "*Yo, periodista* [I, journalist]" section of the newspaper *Elpaís.com*), as well as the use of participatory tools (for example, the possibility of the public commenting on the news) and systems proceeding from Web 2.0 (such as the insertion of videos from YouTube and similar systems) as part of the news offer of the principal cybermedia.

3.3. Typologies Centred on the Elements that Make Up the Cybermedia

A characteristic example of the typology centred on the elements that make up the cybermedia is that which classifies them according to the type of contents that, in a more or less dominant way, they contain. Thus, for example, the *Teléfonica* report for the year 2000 established a classification of contents that could well serve, at present, for establishing a taxonomy concerning their use, that is, indicating which media employ them and how they employ them. Thus, the typology proposed by this report refers to intangible, tangible, service and infomediation contents.

Another example of the typology centred on the elements that make up the cybermedia is proposed by Alonso (2005), who distinguishes between the different degrees of participation/involvement of the subjects who participate in the cybermedia. A double level is presented: on the one hand, a basic distinction is made between the types of agent: manager or user. In the second place, he goes further into each of these: the manager can be a producer or a presenter (of contents); while the user can be passive, active or determinant.

3.4. Typologies Centred on the Aim of the Cybermedia

A typology centred on the aim, or finality, involves classifying cybermedia according to *why they have been developed or elaborated*. Such a finality can acquire many dimensions, but the concrete examples given in the proposal of Alonso and Martínez (2003) are: cybermedia with a predominantly news orientated aim; with a communicational or relational aim; with a service aim; and cybermedia whose aim is infomediation or intermediation.

2
Genres in Online Journalism: a Typological Proposal

1. CRITERIA FOR THE CLASSIFICATION OF JOURNALISTIC GENRES

To date, the examinations made of the genres in the online media have had a descriptive, exploratory and conservative character; while no more than an initial approach to the study of these particular species, they have been valid and effective. These analyses consider the principal expressive forms on the basis of their similarities to, and differences from, the traditional genological model of the printed press. They thus pursue characteristic aims of comparing the printed with the digital press. The conceptual definition of the object of study sets out from the theory of genres in journalism consolidated in recent years, to which is added theoretical futurology regarding the new expressive forms and tendencies in the construction of messages.

Genres are models that make it possible to present the contents of the mass media in an adequate and comprehensible form. Researchers start from the supposition that the media are a criterion defining discursive units, which are not even put into question. That separation by media resulted in an absence of dialogue between researchers within the same field, influenced by the adoption of methodologies for better explaining the characteristics of the medium under analysis - on the basis of structuralist semiology (Stuart Hall), for example, or cultural studies and the theories of interaction (Erving Goffman). On the other hand, the studies of journalistic genres in the printed format placed the theories of journalism in the foreground and favoured the analysis of objects of social activity in relation to their products. In the majority of cases, these are classification criteria that act on the purpose of discursive production. As Marques de Melo says, "first, grouping the genres in categories that correspond to the determinant purpose of the narratives (…), and second, seeking to identify the genres on the basis of the structural nature of the observable narratives in journalistic processes" (Marques de Melo, 1994: 62).

Today, the field of journalistic research is still striving to resolve a false paradigm of journalistic activity: the limit between news and opinion. The initial typologies have an Anglophone origin and the most widespread of these are based on the distinction between story and comment, between the fact and the commentaries it gives rise to. For example, José Marques de Melo set out from criteria that strengthen the difference of purpose between “reproduction of the real” (informing) and “reading of the real” (commenting), basing himself for this purpose on the systematisation of Luiz Beltrão. Other typologies have been proposed that do not depend on the purpose behind the writing, but on the function of each text (Gomis, 1989). Other proposals have been accepted and recognised that take account of criteria that are more or less linguistic, pragmatic and rhetorical (Borrat, 1989; Casasús and Núñez Ladevéze, 1991; Núñez Ladevéze, 1995). There are also other subsequent typologies, elaborated in the 1990s, that diverge from the first model cited (Sánchez, 1992; Sánchez and López Pan, 1998). The exhaustion of the classical categorical paradigm of genres referred to by some critical authors is reflected in the inability of this system to render the new species that have emerged in recent years in the printed press and, more recently, in the digital media. For the latter, a provisional proposal has been elaborated (Díaz Noci and Salaverría, 2003) .

Genres of online journalism(Díaz Noci and Salaverría, 2003)	
News genres	- News item
Interpretative genres	- Reportage (Reportage of current events, special reports, documentary dossier) - Chronicle
Dialogical genres	- Interview - Forum or Debate
	- Chat (Online interview, interaction with personalities, interaction amongst users) - Survey
Opinion genres	- Traditional: editorial, comment, criticism, letters to the editor, article, column, cartoons, etc. - Networked debates: forums, chat.
Infographics	- Individual and collective infographics

2. THEORETICAL AND METHODOLOGICAL FRAMEWORK OF RESEARCH IN GENRES ON INTERNET

The need to rigorously consider methodologies and to propose new procedures for observing the online journalistic phenomenon (Kopper *et al*., 2000: 501) is a further symptom of the changes undergone by the traditional theoretical and practical paradigm of the discipline.

In the field of communication there are qualitative, quantitative and experimental techniques of proven validity that can be applied within a renovated perspective to the study of genres on Internet, starting in the first place with the development of a *content analysis* of the news items. This type of examination enables recognition of the formal and textual characteristics or elements inherent to the online media and is valid for effecting an initial approach to the state of the question of the species.

The determination of the larger and generalizable configurative structures associated with functional typologies (García Berrio and Huerta, 1992: 143) thus proves to be a valid linguistic criterion for the empirical observation of these features in order develop a taxonomy of online journalistic texts and, consequently, a theory of online journalistic genres.

Since 1995, the area of linguistics has paid considerable attention to the theories of genre. With the exceptions of David Bolter and Marshall McLuhan, linguists have favoured documentation and the computer sciences - principally the North Americans Thomas Erickson, Shepherd and Watters, Yates and Sumner, Ryan *et al*., Crowston and Kwasnik and Tom and Campbell. These researchers, concerned about the role of the characteristic technologies in configuring the digital genres [1], take as a basis for Genre Theory scholars such as Carolyn Miller, Charles Bazerman, Carol Berkenkotter, Devitt, Huckin, Freedman and Medway, of the North American Genre School (NAGS), John Swales and Vijay Bhatia, interested in the pedagogical implications of the academic genres, and Michael Halliday, interested in the application of the genres in language teaching. For its part, the New Rhetoric (Toulmin, Perelman and Olbrechts-Tyteca) has foregrounded the notions of purpose and context, and the focus on the communication situation created by the new media to the point of consolidating what is today the chief con-

[1] "As genre theory is applied to digital media rather than speech or writing, a couple of differences in emphasis have emerged. One of the chief differences is that those studying the digital medium are paying more attention to the role of technical features in shaping the evolution of digital genres. [...]" ERICKSON, Tom (1999). "Rhyme and Punishment: The Creation and Enforcement of Conventions in an On-Line Participatory Limerick Genre", *Proceedings of the Thirty-second Hawaii International Conference on System Sciences*, January, Maui, Hawaii <http://www.visi.com/~snowfall/limerick.html#anchor3302129>.

cern of the theories of genres, whether in linguistics, semiotics or discourse analysis: the situation of communicative exchange. As summarized by Irene Machado:

> Classification was replaced by interactive relations. The concept of genre abandons the hierarchical scale and moves on to evaluate interaction. The consideration of genres in the age of digital culture involves checking not only the way in which messages are organized and articulated from the viewpoint of their production, but also their action on communicative exchange, that is, their process of reorganization by the devices of mediation (Machado, 2001: 13).

The strength of socio-rhetoric thus resides in certain key notions: the *rhetorical situation*, the *typified rhetorical action*, the *rhetorical community* (Miller, 1984), the *discursive community* (Swales, 1990) and *recurrence* (Bazerman, 1994). The fact that these situations are recurrent is what makes possible their classification by analogies and similarities, extracting similarities and differences, in this way constructing types (Machado, 2001: 13). The regularity in the properties of those situations gives rise to recurrences in form and in content. For Bazerman, the notion of recurrence is linked to recognition. The *discursive community* is today understood as "a group that works together. It upholds its repertoire of genres, with evident rhetorical traces and the strength that validates the activity of the community" (Hemas; Biais-Rodrigues, 2005: 127). Genre as social action provides us with a less technical and more socio-historical perspective (Marcuschi, 2004: 17). One of the present challenges of linguistics is to relate the notions of discursive community and rhetorical community with the notion of virtual community (VC) to reach a more operative definition in studies on the digital genres. The *context*, meanwhile, does not appear in the research of the linguists, perhaps because communicative exchange was conceived in a sphere where the limits of space and time dissolve, permitting a synchronic or asynchronic exchange, in a network of any size, without defined geographical limits.

For its part, semiotics, incited by the multimediality of these new media, by the hybridization of the communicative systems, moved on to defend and investigate the notion of genre in an environment where it appeared anachronistic. Irene Machado drew attention to the North American researchers in the field of documentation (especially Ericsson), but also to Mikail Bakhtin. Bakhtin began the discussion of genres, previously restricted to the field of literature, in other areas. His concept of dialogism seduced all of those who wished to work with everyday discourse, or who needed to understand the sphere of recognition, and even to analyze hybridization and plurality. Revised, reinterpreted, placed in relation, the concept of genre accepted by the majority of researchers is that of Bakhtin: "Relatively stable types of enunciations".

The principal research methods are the pragmatics of communication, discourse analysis, (with Charaudeau and Maingueneau as the main references), critical analysis of discourse (Van Dijk), cultural studies, the theory of interaction (Goffman), and the classificatory theories. In linguistics, the most studied methodologies are linguistics of the text, conversational analysis, socio-discursive methodology (Bakhtin, Adam, Bronckart), socio-semiotic methodology for the studies of textual and discursive genres, and socio-rhetorical methodology (Miller, Bazerman y Swales) also used for the digital genres.

Analysis of the changes in newsmaking in the digital media is a question of interest to journalism. The parameters are constituted by aspects such as time (instantaneity/continuous updating), the number and type of interlocutors (interactivity), the textual format and its extension (hypertextuality), the degree of automatization of the operations, the method of storing, searching for and handling texts (memory), and the wealth and variety of signals, that is, of text, audio and image (multimediality).

Except for style, subject and function, all of the other criteria are common to the two fields. Style, subject and function follow the tradition of linguistics, and have also been elements in the analysis of journalistic genres since the 1960s. Both these and the other parameters are composed of more than one aspect, such as for example, the textual format (continuous text, independent sequences, fixed structures) and the relation between participants (known, anonymous and hierarchized). The aspects of each parameter are covered by four levels: presence, absence, irrelevance for the definition of genre and lack of definition with respect to presence and relevance. The similarity of the method resides in its analysing the properties of the new medium. For its part, linguistics places an emphasis on the levels of relevance and is concerned with the "emergent genres".

The basic methodological approach set out takes account of the characteristics determining the configuration of digital texts and their classification. The scientific community has pronounced itself on these, pointing to hypertextuality, multimediality and interactivity as basic characteristics (Kerckhove, 1999: 114; Deuze, 2001). However, it is possible to add some others: a) the temporal dimension, which includes phenomena such as synchrony and asynchrony (Bardoel, 2002); b) the continuous renovation of information – through replacement or accumulation; c) the period of time for which it is opportune for the news to remain on the Web, or when it is linked to other subsequent news; d) memory and personalization (Machado *et al.*, 2004). Memory is an especially important characteristic for Marcos Palacios, with its multiple, instantaneous and accumulative form; although this is also an enhanced feature, it is not completely new with respect to other media.

Memory, combined with instantaneity, hypertextuality and interactivity, are what represent a break with the previous media formats[2].

This section proposes a series of characteristics based, firstly, on the predominance of certain rhetorical or other techniques; secondly, on the potentials of the hypertext, especially in the typical resulting structures, which are measurable; thirdly; on the potentials of multimediality; and fourthly, on interactivity.

3. ANALYTICAL PROPOSAL

3.1. Rhetorical Criteria

The rhetorical criteria take up proposals of journalism and editing in which the science of the text has had a notable echo, basic postulates based on the operations proposed by Quintilian (*inventio – multilineality and poly-acroasis; dispositio – hypertextual structures; elocutio – multimedia resources; action – interactivity; memoria - memory*).

Criteria of rhetorical dassification	
Topoi	***Parts of the discourse***
Narrative genres Interpretative genres Dialogic genres Argumentative genres	*Inventio*: Multilineality and polyacroasis *Dispositio*: Hypertextual structures *Actio*: Interactivity *Elocutio*: Multimedia resources *Memoria*: Memory

[2] Other authors propose other parameters, which are always similar, for characterising the emergent genres. Thus, in his book *Hipertexto e gêneros digitais*, Luiz Antônio Marcuschi (2005) proposes a classification that sets out from a linguistic viewpoint, and from the postulates of, for example, David Crystal (2001), above all the viewpoint of pragmatics, the linguistics of the text, conversational analysis and discourse analysis. Kevin Kawamoto (2003: 4) speaks of hypertextuality, interactivity, non-linearity, multimediality, convergence and the personalization of contents. In reality, it seems to us that non-linearity is a feature of hypertext, that personalization could be considered a form of interactivity and that convergence refers more to work routines than to the real object of study, that is, the informative digital text. And Nora Paul and Christina Fiebich (2002), of the University of Minnesota, propose certain *Elements of Digital Storytelling* that, in reality, talk of the same things using different names.

The criteria of predominance of certain *topoi* in each text (narrative, interpretative, dialogic and argumentative genres) are completed with an analysis of the hypertextual structures of each item analyzed and the employment of the multimedia, interactive and temporal possibilities. In this way, the inherent characteristics of digital texts, which are distinctive of the new model, represent the basic variables of their analysis and of the genres linked to them. There are similar procedures linked to the characteristics of the digital media that are of proven efficacy for determining the degree to which they meet the criteria of cybermediality – the extent to which a medium can be considered a cybermedium (López *et al*., 2005). The analytical-descriptive methodologies proposed, linked to the examination of hypertextuality, multimediality, interactivity and temporality, prove to be well-founded and hence justify their operational use.

3.2. Hypertextuality

The study of hypertextuality is one of the priorities of research in the genres and their techniques of discursive construction. This research is aimed at the exploration of digital texts on the basis of the new prototypical structures with which they are related. The empirical study of the hypertextual genres requires an adapted and operative method that makes it possible to determine in what way these online journalistic forms are provided with a coherent superstructure and how this, assembled through content nodes and links, manages to guarantee fulfillment of the basic traditional functions of these forms, their meaning and communicative efficacy. Commensurate with these aspects, it is appropriate to propose procedures based on the integration of inductive focuses, on the one hand, directed at the analysis of the hypertextual structures that the cybermedia prototypes currently present, and inductive focuses, on the other, based on the reflection of an ideal model of structuring for Internet.

To this end, the design of methods of observation centered on the functionality of the hypertext as an organizational structure of contents seems to be the most appropriate. In this respect, the hypertextual models have a theoretical and formal foundation that indicates what basic elements are to be analyzed within the hypertextual system contained by each prototype. Hence, analysis should be focused on its simple dimensions, on the basis of two conceptual categories of analysis: the *composition* and the *structure* of the hypertext.

Composition refers to the level of use of links and nodes; it represents a parameter of the hypertext that can be evaluated through a quantitative and qualitative analysis of these classic elements. The *node*, whatever its type – textual, sonorous, visual, audiovisual, graphic – represents a unit of information that is shown on the screen when a link is activated, and is identifiable through words, groups of words or icons that, when clicked, lead to another, different content (node).Through the use of nodes – understood as units of information – and coherently organized links one obtains the digital text, in this case an informative one, as the expression or form of the hyper-document. This is not so much a long product as a deep one.

Thanks to this capacity for creating structures of nodes, links become the basic nucleus of hypertextual systems; hence analysis of the latter requires a taxonomy of links that is as exhaustive as possible, drawn up on the basis of different criteria that can be combined, and adjusted in each case to the concrete aims of analysis posed by the research. In this respect, it is convenient to propose a taxonomy based on typologies that are sufficiently recognized and that consider the finality, purpose and mode of exploration of hyperlinks (Cantos *et al*., 1994; Codina, 1997; 2000: 119-128), as well as the documentary and narrative function fulfilled by the links (Salaverría, 2005a: 124) and, in all cases, the particular characteristics presented by the item of analysis.

With respect to the analysis of hypertextual *structure*, its typologies have been sufficiently identified and classified (Díaz Noci and Salaverría, 2003: 125-132; Powell, 2001: 100-111; Orihuela and Santos, 1999: 39-42; Codina (2003: 156-157), and are basically divided into axial-structured and network-structured hypertexts. The axial-structured hypertexts, in their turn, divide into lineal structures and arboreal structures, with a third class, that of parallel structures, which are often a combination of several lineal structures arranged on the basis of an arboreal axis. Based on of all of these, uniting all of the levels amongst themselves (and at times all of the nodes), the graticule structures are obtained. This type of analysis is useful for determining the degree and type of coherence established between the nodes - *intranodal, internodal* and *structural* (Engebretsen, 1999; 2001). It also makes it possible to determine the breadth and depth of the superstructure of the genre and the scope of its macrostructure of contents, which clarifies the rhetorical aspects of the genre, not only the merely formal ones. Different tools are proposed for describing these structures, such as the design of graphic schemes that enable visualization of the navigational possibilities in their totality and the type of relations of content that the linkages between nodes offer for each form.

3.3. Multimediality

Both the researchers and the professionals of communication unanimously refer to multimediality as an inherent characteristic of online journalism. This quality, which consists of combining different communicative codes – text, image, sound – in one informative discourse, is indeed a key concept for investigating the characteristics of online journalistic contents and genres. These elements can be arranged in mere juxtaposition or in an integrated way.

Multimedia language	
Elements employed: 1. Text 2. Sound 3. Image a. Still b. In movement 4. Infographics 5. Autoexecuting scripts (*applets* Java, Flash...)	Combination of elements: Juxtaposition Integration

The first contributions concentrated on theoretically defining the concept in the field of communication (Feldman, 1994; Dahlgren, 1996; Jankowski and Hanssen, 1996; Tannenbaum, 1998; Cuenca, 1998; Salaverría, 2001; Deuze, 2004). On these foundations, research has been carried out in recent years that has applied the concept through different research methods.

The most common methodology employed to date for the analysis of multimediality has been content analysis, that is, study of the communicative formats employed by the cybermedia, with the aim of calibrating the degree of use of each of the textual, iconic and sonorous codes. In short, these studies have been directed towards identifying "levels of multimediality".

Although there is other research that has employed these techniques of content analysis to evaluate multimedia resources (Beyers, 2006), the most influential work in this field has probably been the study made by the European network COST A20, under whose auspices a vast analysis of multimedia formats and content was carried out on the main digital newspapers of no less than 16 European countries (Van der Wurff and Lauff, 2005). The validity and applicability of this methodology was subsequently tested in other analogous research in the digital press in Spain (Salaverría, 2005b), Peru (Yezers'ka, 2007) and even smaller geographical regional areas such as the Basque Country (Díaz Noci *et al.*, 2007). Other research has studied the degree of development of multimediality in certain genres characterized by their multimedia development. Outstanding amongst these genres are interactive infographics (Schroeder, 2004; Cores, 2004) and multimedia reportage (Larrondo, 2004).

Another methodological approach to the study of multimediality in the cybermedia that has been much less explored is the theory of uses and gratifications, which analyses the reasons motivating people to select certain options instead of others. Work has been carried out that identifies the motives for which users of the cybermedia feel more or less inclined to explore certain multimedia elements rather than others (Zerba, 2003). Not far from this focus, we find the successive Eyetrack studies (Adam *et al*., 2007), which have identified the patterns of ocular movement when facing the web pages of journalistic publications.

3.4. Interactivity and Participation

Analysis of this variable is focused on the study of its different dimensions. The first of these concerns the *type of interactivity* permitted, inclusive (open code journalism) or authorial (user participation is permitted but not to the extent of intervening in the production of the news item) (Light, 1998). This can be further extended since, depending on the type and degree of interactivity applied, the resulting *structures* can be classified in the following way:

- Random: The user has no prior knowledge of where he will be led by the proposed links, which add surprise and ludic elements.
- Fixed: Can only be altered (through replacement) by the author.
- Relational: Gathers information on the users and organizes the information displayed accordingly.
- Contributive: Permits the user to intervene in the contents (generally by adding things, as in forums).

The *degree of dialogism* promoted by the item must also be taken into consideration. Interactivity has taken different forms, some of them multiple (a forum, a chat room) that in their turn might, or might not, have a moderator, and also forms of one to one communication. There are also forms of asymmetric communication, between one interlocutor on one side, and numerous interlocutors on the other (for example, an interview with readers). Similarly, consideration must be given to the form of *temporality* of the interactive communication established, bearing in mind that this might take place in synchronic or asynchronic form.

The way this interactivity is carried out is another aspect to be considered. This *technique* might be dialogic (electronic mail, forum, chat room, SMS) or it might be based on the personalization of its different forms: search systems or systems for adapting the user's interface to his needs (Paul and Fiebich, 2002). With all of these variables we can draw up the following table:

Interactivity and participation				
Type of interactivity - Inclusive (open code journalism) - Authorial <u>Resulting structures</u> - Random - Fixed - Relational - Contributive	*Degree of dialogism* - Symmetric - *One to one* - *Many to many* - Asymmetric - *One to many* - Many to many	*Temporality* - Synchronicity - Asynchronicity	*Technique* a) Dialogic - Electronic mail - Forum - Chat room - SMS b) Personalisation - Database search - Interface configuration	*Intervention of the medium* - Moderation - Absence of moderation

3.5. Temporality

The characteristics of the new medium have brought a substantial change in the times of production and reception. Ev ents can be reflected in cybermedia discourse in a more agile way and without concern for restrictions of space. The density of events, a measurable variable that is defined by the number of events per unit of time, is much greater, due to digital technology, because there is less discrimination over what events are to become news items.

To start with, the distinction between synchronism and asynchronism that divided the printed media and audiovisuals has faded. Audiovisual news productions no longer only involve synchronous reception, instead they can proceed from the news archive, to be downloaded and consumed by the user when he feels like it. This results in a ubiquity of information. All of this adds a new element: tempestivity, that is, the period of continuance of a news product, its relevance – the time for which we can make it available without its becoming obsolete, either considered as a discreet unit in itself (one of the day's news items, for example), or because it is then included as contextual information for another more recent news item.

Information can be subjected, on the other hand, to continuous updating, either by accumulation, the addition of new data, references, documentation or news linked to the main story; or by replacement, tha t is, a new (digital) text replaces the earlier text, which has become obsolete; this often occurs with the latest news (the "palimpsest effect"). The characteristics noted give us the following table:

Temporality and tempestivity	
<u>Temporality</u> - Synchronism - Asynchronism	<u>Tempestivity</u> - Permanence *Period* - Continuous updating By *accumulation* By *replacement*

4. INFOGRAPHICS

A particular case requiring research is digital infographics. While authors like Peltzer (2001) indicate that the first example of graphics journalism, or infographics, in the world press was published in 1806 by *The Times* of London, the use of this discursive form became really significant in the 1980s, especially with the graphic revolution promoted by the newspaper *USA Today*. According to Stovall (2004: 132), other printed vehicles had already used graphics journalism before, for example the *Chicago Tribune*, but it was *USA Today* that effectively made the innovation by giving value to editorial design, and doing so on the basis of the successive opinion surveys that sought its public-type, above all through quality graphic resources, which included the famous weather maps. According to Stovall,

> Graphics journalism combines words and images to present ideas and information in ways that cannot be accomplished by text or illustrations alone. The best graphics journalism helps viewers understand – and picture – the information. It gives insights into the topic. And it opens up the possibility that viewers will find meanings and interpretations beyond those intended by the journalists (Stovall, 2004:130).

In spite of the passage of more than twenty years since the start of the systematic use of infographics by the press, we can affirm that research with this news resource as its object is still rare and dispersed. If this observation is valid for the printed media, the same can be said of so-called multimedia infographics or animated infographics. This can be explained by the novelty of the phenomenon; it should be recalled that the *Society of News Design* (SND) only began to award prizes for infographics of this nature in the late 1990s (Salaverria and Cores, 2005: 158).

The volume of bibliography on printed infographics can be considered reasonable, above all with respect to the number of titles published in the United States, France, Portugal and Spain. Multimedia infographics is usually mentioned in broader studies on digital journalism, especially in chapters dedicated to discussions on the journalistic media in cyberspace, but there are no specific works on this question, except for those of a technical character, that is, explaining the use of tools and programs for the production of infographics of this nature.

The books and chapters on infographics, especially those by Peltzer (2001), Valero Sancho (2001), De Pablos (1999), Salaverría (2005a and 2005b) and Stovall (1997 and 2004), have an exploratory character. In the work by Valero, for example, there is also a clear descriptive chapter, which leads him to propose a typological classification of infographics on the basis of the elements that constitute it (interactivity, movement, hypertext and design), both with respect to the form and to what he calls *qualitative characteristics*. Just as he had done for infographics published in the printed vehicles (2001), he proposes a typological separation into collective and individual infographics. He presents a range of characteristics that can transform digital infographics into a visual journalistic genre on the basis of (1) usefulness (informative, meaningful, functional and concurrent) and (2) visuality (comprehensible, aesthetic, iconic, rheologic – the study of its dynamism – and verbal typographic). Salaverría and Cores (2005a: 150-151) classify infographics as a form of the news genre. However, they prefer the term "multimedia infographics" and argue that "in itself, it supposes a hypertext, independent of the structure in which it appears embodied" (2005a: 157).

We would argue that a suitable form for constructing a theory of this object – and even of providing a more efficient and less empirical practice in editorial offices – is through the case study, applied in all its complexity, because it favors two principal focuses: understanding *how* infographics is used, on the basis of the study of the quality press, and, consequently, *why* this resource is adopted.

The typology that we propose is as follows:

We divide infographics into two groups. *Encyclopedic* infographics, which is centered on explanations of a more universal character, such as, for example, details of the workings of the human body. It usually has a generalist character. This is not the case with *journalistic* infographics, on the other hand. This is concerned with aspects that are closer to singularities, and is fairly common in such cases as accidents, elections, etc.

Both groups are divided into *independent* and *complementary*. The latter is infographics directly linked to a specific news item or reportage, acting, in this case, more as a mechanism for improving the reader's understanding. *Independent encyclopedic* infographics is characterized by its not accompanying any material in particular, and by its dealing with broad issues. *Complementary specific* infographics attempts to set out, or narrate, the event in a differentiated or singular way (singular aspects), complementing a news story or reportage.

Independent infographic journalism is more unusual. It appears as a totally differentiated form of narrating an event, normally through a combination of complex resources. Infographic reportage is one of its variants. We base ourselves on the supposition (Teixeira, 2005) that reportage can be defined as a text that is able to provide in-depth contextualisation to an event, or to specific aspects of a current issue.

Besides these broad groups and subgroups, it is important to specify that any of the categories can be individual or composite, when they bring together two or more cases of infographics to form another single case of greater complexity.

Finally, prior even to infographics, there is what we call proto-infographics, that is, embryonic forms of infographics that are characterized by the absence, or the insufficient presence, of one or another of its essential elements, such as the front page, which serves to situate the reader, and other complementary elements that are essential in aiding understanding. In this case, we would be speaking of first generation infographics.

Empirical research must provide validation of this typology of infographics on Internet and, at the same time, make it possible to understand the reason for such uses and functions. As a procedure, it seems to us essential to adopt as a procedure the realization of a structured interview.

3
Information and Database Architecture

1. SEARCH METHODOLOGIES FOR INFORMATION ARCHITECTURE

1.1. Theoretical Context and State of the Question

Systems of information management are the great technical advance that has been applied to journalism in the first decade of this new century. The creation of a structure that enables information storage on database protocols has made it possible to establish a new scenario in the relationship between news, publishers, editors, journalists and users. This technological advance involving the use of databases for contents management has already progressed beyond the first models, which were based on web archives that resulted in the processing of an enormous quantity of documents that, depending on the case, could become unmanageable (Díaz Noci and Salaverría, 2003: 196).

On the basis of this advance the so-called Content Management Systems were created, known by the acronym CMS. The definition of a CMS is a computer application that solves the problems of relations between the elements requested by users and the products created by journalists. In spite of the existence of high quality publishing systems (OpenCMS, Joomla, Wordpress), the majority of the online media have opted to create their own tools, making it possible to adapt the medium's production routines to the new tool. Programmers, designers and journalists participate in this process, and it is here that it becomes essential to draw attention to a new profile of the journalist, that of "information architect", someone combining the methodologies of news archivists and journalists, and even the development methodologies of computer systems managers (Díaz Noci and Salaverría, 2003: 199).

These new tools, essentially based on information mechanisms of creation and storage, make it possible to establish a new value for information, contributing new production mechanisms, much simpler than those existing a mere five years ago. Above all, they make it possible to set up the relations between the different elements that make up a news product, whether drawing on the documentary foundations of the medium itself, or calling for information from other external sources.

Analysis of the work of the managers will enable researchers to recognise their efficacy in news production and in the recovery of data, whether requested by the journalist or by users.

Information architecture thus researches the organisation, labelling, representation and organisation of contents. It is a very wide framework that necessarily connects the study of the conception, production and distribution of the cybermedium, and makes it necessary to know, at the same time, its internal structure and the public and external organisation of that information. The need to methodologically connect the *back-end*, the editorial system of the cybermedium, with the *front-end*, its visible face, seems essential in much research due to the nature of the object of study: in an editorial system, the registers of databases store, along with the public news fields (headline, introduction, body of text…), a fair number of private fields that label and relate that content to its setting.

We cannot determine the scale and dimension of those relations in the public part of a cybermedium without knowing the medium's internal structure and the processes of labelling, placing in relation and storage of its content, which only take place in the back-end, or in intermediate zones, prior to its general publication. The public area is thus the final end of a more complex system that has a direct bearing on everything represented in the public area.

Now, in recent years the cybermedia have added to the complexity of, and greatly diversified, the formats and containers holding the information that is presented to the user. This point has been reached where the totality of the online quality media are multi-channel publications, which have differentiated versions depending on the technological formats for visualising that data or the differentiated uses made by the consumer of the latter. In this way, unlike earlier formats, where the object of study was limited by a determinate appearance, more or less coherent in all of its parts, the cybermedia are becoming populated by a heterogeneous structure of content representation, with numerous extensions, exceptions to the common rule and differentiated spaces of representation.

Versions adapted to mobile phones or PDAs with reduced viewing surfaces, RSS channels, versions for television, message services by telephone or electronic mail, user-generated printed newspapers, personalised front pages and interfaces, etc., are making the object of study more complicated, insofar as an intermediate layer is added to this, making it necessary to take decisions that restrict or widen the research methodology. Alongside research in the area of production, or research in the final product, Internet has produced an intermediate zone in the last seven years, where the content is emancipated from its container in an abstract way. This intermediate zone, exemplified in the XML, represents the most abstract level at which the information is found in a "pure state", obtained from the user's demands on the database, but without having obtained a final output format.

With the immaterial technologies of content production and consumption, growing quantities of information were available and had to be understandable to the user for it to be minimally apprehended. The map of the websites, the page links and the possibility of using an integrated database system with ever more information led the North Americans to systematise the information architecture for the World Wide Web. Concern with this area, which was becoming consolidated and that was left largely under the control of whoever produced the information, always took the form of composing maps, so that the data could be recovered easily. At present, information architecture has come to form part of both the international flows (organisation, navigation, levels of information, search systems) and the integration of managerial and communicational aspects (mission, video, content, functionality, growth, expansion of a product); or as Schwingel (2003) proposes in structural terms as a) the structure of information and b) the navigational structure of a specific product.

Employing the concepts of Manuel Castells, Beth Saad Corrêa (1999) discusses the context of digital media at that time and the role of the journalist, as well as the new skills the latter would have to develop. She identifies two routes for the professionalisation of journalists in the information society: 1) the news architect; 2) the manager and his abilities. Finally, she also identifies him as an agent of relationships and knowledge.

Prepared between 2000 and 2002, the master's thesis of Schwingel (2002) systematised the responsibilities, qualities and training needed by members of teams developing products and services for the Web. Similarly, she identified and structured the form of working of such professionals.

In a form specifically applied to the area of online journalism, the concept of artificial intelligence (AI) came into use, based on the narrative of the experience of preparing the Panopticon contents publication system of the Communication Faculty of the Federal University of Bahía. At that time, information architecture was understood as: a) the flow of information, the hierarchy of contents arranged in an online journalistic product; and b) the flow of navigation, that is, how the readers could "construct" a specific narrative.

Elias Machado (2004a and 2004b) discusses the function of artificial intelligence in the creation of narratives in cyberspace. Basing himself on the discussion on digital journalism in databases, promoted by the Portuguese Professor Antonio Fidalgo (2004), the work of the Spanish researchers López, Gago and Pereira (2003) on information architecture and the clarifications of Raymond Colle (2002), referring to the databank and databases, Machado proposes a "lengthening" of the concept to also include the "screenplay function". He insists that this function has so far been little explored in the studies of information architecture, in spite of its being "what most conditions the work of the creator" (Machado, 2004), in this case, the journalists.

1.2. Structure in the Cybermedia

In the organisation of the elements of an editorial system of an online medium, we can distinguish three broad areas that represent different functions within the system and that have become indispensable in recent years, inasmuch as the possibilities of the cybermedia are expanding, with an orientation towards the construction of informative communities that establish relations between the contents generated by journalists and users.

The *organisation of production* is centred on all those elements needed for the system to function and that enable the contents to be placed within the system, to be represented and recovered. Its main function is to situate a specific content within the database and make it possible to classify and organise it. Formally, this architecture includes the system of categorisation and labelling, that of chronological annotation, that of delimitation of the graphic position of the element in the front-end, and the relational tables that make it possible to connect one element with a finite or infinite number of other elements. Robertson (Robertson, 2002) defined the basic requisites of a system of this type: the *separation of content and presentation*, *multiple authorship* (and thus the need to share a structure by all the producers), the *reuse of the content* and the *use of metadata*.

The *organisation of distribution* corresponds to the design of the structure of that content which is to be shown to the public. It segments and typifies the classical elements of journalistic content (headlines, introductions, credits, photographic captions, videos, etc.), as well as any other element of the system which is to be shown to the public within a surface, according to the relevance that that informative element might have in a specific context.

The *organisation of participation* designs structures to streamline the interaction of users with the product and, where necessary, the interactions between users. It attempts to connect the organisation of distribution established by the medium with the users' uses and consumption. The organisation of participation designs typified containers to hold the content created by the user and formulas for this content to be represented on the cybermedium, in a relationship that is more or less close to the content of the editing.

1.3. Analysis of the Hierarchy of Elements

Traditionally, decision-making concerning hierarchy has been in the hands of those responsible for editing (Armentia *et al.*, 2000: 188), but it is now necessary to contribute a new perspective to the concept. It is not only a question of ordering elements on a page following the relevant journalistic criteria, but also of structuring the workings of a tool to increase the value of the published information. For that reason, a correct methodological analysis of the hierarchies of a cybermedium will help the researcher to discover the efficacy in the transmission of information.

In order to analyse the hierarchy of a medium, we set out from the conception of Campbell and Goodman dating from 1988, which was made known as the HAM (Hypertext Abstract Machine) model. These two authors based themselves on the existence of three levels, or layers, in the architecture of a website: the upper layer, which is the presentation level where the user interface is found; the second layer, known as the intermediate level, or HAM level, which is where relations are generated and the format of the hypertextual system is determined. Finally, they define a third level, called the bottom layer, which is where the database with the stored information is located.

The researcher should study both the hierarchization of elements in the graphic presentation (upper layer) and the level of relations established with the intermediate layer, the site of connection between information recovery and the databases where this is stored. A computer analysis of the structure of databases underlying any dynamic system is of less use in research focused on the field of communication, since we would be venturing onto ground that corresponds to engineering.

The most efficient methodology for determining the degree of success of the intermediate level is to study the logical relations between the informative contents. In this deductive logic, the researcher should analyse the system's efficacy in enabling the user to localise the information sought: either through guided models (such as the case of a cybermedium that establishes a protocol to sell a service); or through tree models (in which the user seeks information and the system establishes mechanisms for providing the informative contents sought, such as the case of information related to the main news item); or, finally, by analysis of the process of hierarchization from the logic of the superimposition of hierarchies. In this case, the cybermedium recovers for the user the connections arising in the places where there is a coincidence between the user's interest and the information stored by the cybermedium.

1.4. Applied Model for a Case Study

Following the precepts of the *Grupo de Pesquisa en Jornalismo On-line* [On-line Journalism Research Group – GJOL], the methodology to be adopted for the proposed research is a hybrid one, and its principal aspect will be conceptual discussion of the practice of online journalism, which must be complemented by case studies in journalistic newsrooms and organisations (Machado and Palacios, 2007). Thus, the proposal of a methodology for the study of information architecture will have as a first stage:

1.4.1. Bibliographical Review of the Object of Study

What is sought at this initial stage is to make a review of the bibliography, relating not only to the definitions of information architecture (Würman, Rosenfeld and Morville; Hurst; Garret; López, Gago and Pereira; Schwingel; Gago), but also to its applicability to online journalism (Díaz Noci and Salaverría; Salaverría; Gago), and to how specific points of problematisation can be chosen, bearing in mind questions of the product's usability, visual appropriateness and technological options (which would lead to specific definitions and the drawing up of a specific bibliography). Finally, it is necessary to analyse some concepts that can be understood as "advances" in information architecture through the appearance of other factors (interactive factors, community formation, automatized publication of contents, management systems), such as gatewatching (Bruns, 2006) and findability (Morville, 2006).

Parallel to this, the object of study must be delimited: which products have a referential character (the big media, with influence on a specific social group) or have an innovative or experimental character (Machado and Palacios, 2007). Criteria can also be observed such as originality, representativeness and diversity (Barbosa, 2007).

It is recommended that this research should be centred on the interface of the message with its mode of production, which, following Santaella (2001), represents the form in which the media determine the constitution of the languages they carry, the possibilities these open up and the limits they set, as well as the specificity of the communication process and the resulting genres. The use of a mixed methodology, as described by Palacio and Machado (2007), leads us to the study of cases that, following Gil (1991), present the following advantages: a) stimulation of new discoveries; b) emphasis on totality; and c) simplicity of procedures.

Once the choice has been made, an asystematic observation of four to six months is recommended, in order to elaborate the techniques for obtaining data, as well the working premises and hypotheses.

1.4.2. Description of the Information Architecture of the Object

Observation of the information architecture employed by the journalistic product can be undertaken for a period of at least fifteen days. It is suggested that the architecture of the product be analysed, both as a whole and in each subject, in order to form an idea of the dimension of the work of each journalist individually, or even to view the subject itself. Therefore, thinking about the product can be done in macro terms (the screens that serve as a model to demonstrate the AI solution adopted and the navigation flow) (Melqui Jr., 2007). However, in line with what was developed for the Panopticon (Schwingle, 2003), that is, the macro and micro analysis of the product itself, it will perhaps be interesting to observe each subject as if it were a micro-site, with its own flow diagram composing a narrative structure, as well to observe the interactive and multimedia resources employed.

The following is a summary of the online journalistic product:

Macroarchitecture

A) Description of the product's macroarchitecture;

B) Sketch of the flow diagram of the macroarchitecture;

C) Description of the interactive resources used in the macroarchitecture;

D) Description of the multimedia resources used in the macroarchitecture.

Microarchitecture

E) Definition of the area of the product to be described. This might be a genre, a section or even the daily edition;

F) Daily capture of the chosen area, with an attempt to identify the subject's narrative structure;

G) Sketch of the flow diagram of the subject;

H) Description of the interactive resources used in the subjects;

I) Description of the multimedia resources used in the subjects.

- Elaboration of the categories of analysis, processing of the material

Comparison and analysis of the flow diagrams and the interactive and multimedia resources employed. In accordance with the aims of the research and with the aid of the bibliograph y, definition of the categories of analysis.

- Conceptual definition of the particularities of the AI product

Description of the AI of the online journalistic product according to its editorial position, genres, sections, market position, seeking to adva nce conceptually in accordance with the bibliography employed.

2. METHODOLOGIES OF DATABASE ANALYSIS IN ONLINE JOURNALISM

2.1. Theoretical Context and State of the Question

In general terms, the studies related to databases that conform to the perspective presented here are aligned with an evolutionary phase of online journalism classified as third generation (Mielniczuk, 2003; Pryor, 2002), or even on the developmental edges of what is perceived as a fourth generation (Barbosa, 2005a, 2005b, 2006a, 2006b, 200 7a, 2007b; Schwingle, 2005).

Alongside information architecture and the systems of contents management, databases are a primordial element of what we consider to be a basic triad in the construction and administration of cybermedia. The three elements mak e up the internal structure of a cybermedium and condition its administration, organisation, the recovery and presentation of its contents, and even its diffusion, circulation and the way in which users interact with the online digital journalistic product .

Starting in the early years of the XXI century, we can find the works of researchers who widened the conceptual dimension of databases in journalism and online journalism. Specifically in the work of the following authors - Colle, 2002, 2005a, 2005b; Fid algo, 2003, 2004, 2007a, 2007b; López, Gago, Pereira, 2003a; López, Gago, Pereira, 2003b; Machado, 2004a; 2004b, 2004c; 2006; Lima Júnior, 2004, 2006a, 2006b, 2007; Quadros, 2004, 2005; Barbosa, 2004a, 2004b, 2004c, 2005a, 2005b, 2006a, 2006b, 2007a, 2007b; García *et al*, 2005; Holovaty, 2005, 2006a, 2006b; Gago, 2006, 2007; Pereira, 2006; 2007 - we find a conceptual approach that proceeds to the consideration of databases as a specificity of online journalism, widening their meaning and attributing them wit h their own status. This is in opposition to the approach that considered them as sources for the production of journalistic material, that is as tools, according to some systematised studies in the 1990s (Koch, 1991; Meyer, 1993; Garrison, 1998; Paul, 1999).

Raymond Colle (2000) analyses (and also applies) the method of data mining and KDD (Knowledge Discovery in Databases) for the implementation of a journalistic product in cyberspace, also including the notions of content organisation for visualisation and publication. His study details terms and explains the processes for carrying out data mining, discovering useful information hidden amongst the registers inserted in a journalistic database, generating online statistics by means of systems of meta-information and showing the ways in which that content can be visualised.

António Fidalgo (2003, 2004, 2007a) was one of the first to analyse the specificity of databases in the structuring and organisation of information in a digital product. One of the concepts introduced by this researcher was that of *semantic resolution*. According to Fidalgo, this concept rightly seeks to determine the contribution of databases to journalism, collaborating in the construction of a theoretical reference table. He explains that just as the quality of a digital image increases with an increase in its graphic resolution, that is, the number of pixels per square centimetre, so does a plurality and diversity of online news about an event increase the information concerning it, thus raising its semantic resolution (Fidalgo, 2007a: 93).

The researchers of the *Novos Medios* (New Media) group of the University of Santiago de Compostela (USC) in Galicia, Spain – Xosé López García, Manuel Gago and Xosé Pereira – are also pioneers in the study and realisation of projects that place an emphasis on databases, associated with the other two elements of the basic triad: information architecture and systems of content management. Since 2003, in the series of publications they have produced, these authors (López; Gago; Pereira, 2003a; López; Gago; Pereira, 2003b; López García *et al*, 2005; López, Gago, Pereira, 2006; Gago, 2006, 2007; Pereira, 2006, 2007) have analysed the applicability of what they consider to be the technical format (databases, DB) and the conceptual format (AI) for the creation of content management systems (CMS) as distinctive features of the new dynamic pattern for cybermedia. Employing their own models of analysis of information architecture, such as diagrams, practical navigation tests and use of the Web, the researchers from Galicia have proposed characteristic technical definitions of the dynamic, rather than static, sites.

In a dynamic system, the ensemble of databases that store all of the journalistic information is the primordial component (Pereira, 2007: 194). The researchers of the *Novos Medios* group, in their articles and books of 2006 and 2007, extended their respective analyses – centred on the methodology of information architecture – in order to verify in greater depth how the cybermedia are evolving in the environment of continuous and frenetic change represented by the Internet.

They examine the resources of what is known as Web 2.0, such as *RSS* (Really Simple Syndication) or the social markers for the distribution and sharing of contents (for example, *Menéame*, *Del.icio.us*, etc); the growing use of free software in the newsrooms of journalistic websites; the participation and more intensive interaction of the users of cybermedia (participatory journalism); the phenomenon of blogs. In addition, they consider how Flash technology collaborated in the creation of specific genres in online journalism (for example, interactive computer graphics) and how it at present carries all types of application for geolocation, for multimedia, for audio, video and photography reproduction and for advertising; and how new concepts, such as mash-up (programming adapted from an external site which is made to interact with a database), are delineating new paths for the treatment and presentation of journalistic contents. As Manuel Gago (2007) points out, in a scenario of constant evolution and change, a cybermedium increasingly involves more software and less hardware, since, converted into a platform, it is capable of relating journalistic news, analysis and interpretation with databases whose content is flat, administrative, meteorological or commercial, amongst others (Gago, 2007: 110).

The Brazilian researcher Elias Machado, lecturer at the Federal University of Santa Catarina (UFSC), in articles produced in 2004, sets out the conception that confers a particular status on databases in online journalism, through the identification of three simultaneous and complementary functions: a) as a format for structuring information; b) as a medium for models of multimedia narrative; and c) as a memory for the published contents. It is in keeping with the conception of databases as a contemporary symbolic cultural form, which structures the majority of the products of the new mass media (Manovich, 2001), that Machado should announce the status of the DB as a cultural form with its own status. In support of his hypothesis, he employs the principle of transcodification – described by Manovich as what permits all the objects of the new mass media to be translated into other formats. Elias Machado argues that the future of journalistic organisations on the Web is conditioned by their ability to transfer the skills, boosted by databases, of automatically storing, classifying, indexing, connecting, gathering and recovering huge quantities of data in creative types of narration.

Walter Teixeira Lima Júnior developed part of an applied research project in conceptualising a framework for the production of intelligent software for searching in journalistic sources (Lima Júnior, 2006a, 2006b, 2007). The methodology employed is based on intersecting the areas of social communication (journalism), computing, cognitive psychology and anthropology. Taking the formation of the conceptual base as a starting point, he made use of the UML (Unified Modelling Language) method, from the computer sciences, to define the programs to be used in the production of the software. According to Lima Júnior, the decision to use UML models was taken since it is a model containing flexibility, and in order to be able to guarantee a better adaptation of the conceptual flow in some programming languages, such as Java or Labview.

2.2. Databases as Paradigm and Metaphor

Suzana Barbosa (2007) characterises databases as a key aspect in inspiring the designation of a paradigm in the transitional stage between the third generation (Mielniczuk, 2003; Pryor, 2002) and a fourth phase of evolution towards cyberjournalism. Her work, whose empirical *corpus* involved 22 cybermedia, also coined a new metaphor (the aesthetic of the database) for the presentation of journalistic contents in the cybermedia.

This author conceptualises the Online Journalism Database (OJDB) as the model followed by databases for defining structure and organisation, as well as for presenting contents of a journalistic nature, in accordance with specific functionalities and categories, which will enable the creation, maintenance, updating, availability and circulation of dynamic digital journalistic products. The OJDB Model possesses a set of 18 functions, and seven categories: dynamism; automatisation; interrelation/hyperlinking; flexibility; informative density; thematic diversity; visualisation.

The research, which had an exploratory character, employed multidisciplinary theoretical-conceptual bases – from journalism to the new mass media, from diffusionist theory to computer sciences – adopting the case study method as an illustration (Machado, Palacios, 2007) to found its arguments, demonstrating its validity and proving or refuting hypotheses. This procedure, used in research developed in the area of the *Grupo de Investigación en Periodismo On-line* (On-line Journalism Research Group - GJOL), enables the reality of the concept to be contrasted with the diversified reality of the objects studied in the cases, making it possible, when necessary, for the concept being tested to be reformulated to incorporate aspects that had been rejected until then. In the research of the GJOL, a case study therefore supports arguments in order to advance working hypotheses pointing to a much wider reality, making it possible to identify concepts and variables that can be studied quantitatively. It thus differs from more traditional case studies, which have as their result descriptive studies of highly delimited objects, without many wider conceptual ambitions.

Machado (2000) indicated tendencies of a new modality of journalism that included users in the process of production, exploited the potential for storing and recovering information instantaneously, and exercised online control of the informational materials of the newspaper. For the researcher, skill in recovering information from databases became essential for the operations in the chain of production of the news item and was incorporated as a basic function of journalists, adding complexity to the work that had always been done by the professionals of the area. Subsequently, Machado stressed that there was a tendency for the archive to cease to be "dead" and for it to become part of the production process of online journalism, becoming "alive" and decentralised. "In the space of the networks the main function of journalistic archives is both to encourage and to direct the exchange of data for the production of news items, reportages or commentaries" (Machado, 2001).

2.3. From the Syntactic Web to the Semantic Web

At present, studies on the indexing and recovery of information on the Web include a new tendency: the semantic web. In accordance with the researchers in the fields of Information Systems and Information, the semantic web will mean an evolution of the Web as we know it (Hyvönen, 2002; Feitosa, 2006). Beyond permitting searches for textual documents, images, sounds and videos on web pages, beyond permitting the incorporation of the user's production into the system of circulation of networked digital contents and a facilitated use of free software, the great promise of the semantic web is to permit a more efficient and intelligent use of the networks. With the support of ontologies (Feitosa, 2006), computers will be able to manipulate the terms much more effectively, enabling the information to become more useful and significant to the user.

In 2001, the Web's creator, Tim Berners-Lee, started the debate on a new concept, the semantic web. The concept, which he coined together with James Hendler and Ora Lassila, had a great impact in the academic world, as it offered an ambitious vision of the future of the World Wide Web (Morville, 2005). The authors basically explained how the semantic web would structure the meanings of website contents, creating an environment that would enable the intelligent agents, which move from page to page, to gather information useful for each user, all in an automated form. To obtain efficient results, a series of rules of inference must be combined with ontologies and structured representations of the information, which to be successful must be connected to a single global system of information. The semantic web will permit machines to understand semantic documents and data. If it is suitably projected, the new Web will be able to promote the evolution of human knowledge (Berners-Lee, 2001).

The capacity for finding useful information is termed *findability* by Peter Morville (2005); this is the quality that systems possess of being localisable and navigable. Setting out from the concept of the ubiquity of machines, Morville presents a potential world where everything can be easily found through intelligent systems. He recognises that we are still not there yet, but there are many indications that we are close to an age marked by really efficient and useful answers.

With the achievement of the semantic web, the cybermedia will advance from a phase in which the automatization of processes still requires interpretation and establishment of relations by professionals, to a phase in which it really will be possible to trust in results obtained on the basis of generic or specific searches, with greater or lesser degrees of control by users. Data-checking will be done by automatised systems and the answers given to the user will have a significant relevance in the processes of production of informative material.

2.4. Methodology of Analysis

An outstanding characteristic of the works researching the subject under review here is the plurality of the theoretical and methodological universe on which their analyses and analytical foundations are based. Multidisciplinarity in their conceptual and theoretical framework is consequently reflected in different methodological options concerning the forms of exposition, discovery and justification in approaching the object of research. Thus, we note that research limited to databases in online journalism, in general terms, is more attuned to the methodological triangle (Conde, Galera, 2005), since it manages different perspectives, techniques and types of method. The origin of the term "triangulation" as it is used in the social sciences is to be found in the proposal of multiple operationalism made by Campbell and Fiske (1959). But Denzin (2003) subsequently widened the concept by identifying four types of triangulation with a broader meaning, simultaneously utilised in a single research project in different types of method and data, and even disciplines.

Although research in databases has not yet employed the Delphi method, we believe that this strategy could be used in order, for example, to evaluate the system of production in the cybermedia, the level of use of databases in cybermedia newsrooms and the degree of skill of professionals with respect to their understanding and use of interrelating links in the informative pieces. Additionally, this method examines how databases are used in processes of indexing and recovery of journalistic contents, and how content management systems in fact assure the industrialisation of the productive process in online journalism. Created in the 1950s, Delphi is a qualitative estimative technique with a broad scope that extracts and refines the collective opinion and experience of a panel of specialists. Its main characteristics are:

- *Iteration*: several rounds are made, whose number can be established beforehand or determined in accordance with a criterion of consensus amongst the participants or of stability of individual opinions.
- *Return*: before the second and subsequent rounds, the results of the previous round are sent to all the participants.
- *Anonymity*: the participants are approached by mail.

Finally, it should be noted that the case study method is considered the most suitable for researching contemporary phenomena within their real context, according to Robert Yin (2005). Besides this, the case study is amongst the most widely employed methods in research in communication (Lopes, 2001), being the most suitable for exploratory research and particularly useful for generating hypotheses (Machado, Palacios, 2007).

4
Research Methodologies in Journalistic Design on Internet

Scientific research in the field of the design of cybermedia in general, and of more concrete aspects such as infographics in particular, is scarce and therefore necessary. The small number of experts who theorise on this question, the volatility of the tendencies and the fact that the close relationship between design and the news message itself is frequently overlooked hinder the development of specific research methodologies for this area of knowledge in the specific field of journalism. Other lesser, but no less important, difficulties in research in cybermedia design are the absence of graphic manuals in the newsrooms, the constant formal updating of the cybermedia and the non-existence of a single design model to imitate, amongst others. Specific literature on the question is also scarce, although attention should be drawn to the recent appearance of the work *Diseño periodístico en Internet* [Journalistic Design on Internet] (Larrondo and Serrano, 2007).

A valid research methodology in this question requires a commonly accepted concept of design as a starting point. In this respect, it should be borne in mind that the concept of design on Internet includes new areas of study directly related to design that did not exist in the traditional mass media, such as accessibility, interactivity, usability, navegation and the personalisation of contents, amongst others (Cabrera, 2000: 45).

Before the appearance of Internet, the concept of design was already extremely broad, including its constituent elements as well as the structure and the basic principles governing it. Now, the new resources that permit the projection of news messages in cyberspace must be added to those elements, structure and basic principles or norms.

Before approaching any research in the design of cybermedia, it should be recalled that the evolution of technology directly affects news design, which is why the results of research in this question and the methodologies applied in its attainment will require constant updating.

The possible studies of design range from the most general to other more specific perspectives and, depending on this, different research typologies can be established according to the object studied in each case . In this respect, we make a distinction between those that study design in the most general way and those that approach it with a more specialised gaze. In our understanding, research centred on the study of design in general considers amongst its analytical variables the structure and all the news elements, as well as the principles relating to design. Compared to this research, more specific studies are centred on in-depth research into a particular element or a concrete part of design, infographics for example, or also photography (Yuste, Sandoval and Franco, 2006), slide shows (Paul and Ruel, 2007:b), usability (Schumacher, 2005), multimediality (Ruel and Paul, 2007:a), etc.

In the work methods employed there is a predomiance of quantitative over qualitative methods, and of arithmetic over semantics. Even in the latter case, the results do not capture the level of efficacy of the graphic presentation. The combination of quantitative and qualitative methods renders the reasons for design efficacy, which is why a mixed or combined methodology helps to complete the results of research in cybermedia design.

1. ORIGINS OF RESEARCH AND METHODOLOGIES IN CYBERMEDIA DESIGN

In spite of the small number of scientific studies on this quesiton, we can find research of a general and of a specialised type. The first type of study was needed for the creation of a theoretical corpus on the question that would compensate for the scarcity of specific literature. On the other hand, the latter – the specific studies – favour specialisation and deeper research within the discipline itself. It is advisable that both types be developed, but, without any doubt, the general studies help in the comprehension, contextualisation and justification of the specialised studies.

In this respect, the first thesis defended in Spain on the design of newspapers on Internet (Cabrera, 1998) facilitated understanding of the characteristics that are specific to the design of cybernewspapers compared to those inherited from traditional newspaper design. The results were obtained from an analysis of 30 newspapers from around the world present on Internet, on the basis of a common file. In this case, interviews with experts (persons in charge of the digital editions) completed the results. This first study was followed by another doctoral thesis that analysed design in general in the Spanish cybermedia (Castaños, 1999).

Up to the year 2007, sixty doctoral theses related to Internet had been defended in the Communication Faculties of Spain. Sixteen percent of these were linked to design, in some cases centred on more specific aspects, such as hypertextuality (Batista, 2000; Pérez, 2002), multimediality (Canet, 2001), usability (Ramos, 2002; Lerma 2004), personalisation (Ramírez, 2003) and interactivity (Cebrián, 2005).

The qualitative focus within the methodology applied in those studies proceeded from reviewing the different paradigms established for research, such as positivism (or objectivism), the interpretative paradigm and the critical paradigm, suggested by Neuman (1997), Blaikie (1993) and cited by Wimmer and Dominick (2001). The majority of those studies set out from an interpretative perspective, using the methods of the theory based on the case study to carry out data collection, classification and analysis.

The case study method is an efficient tool of qualitative research that consists in empirical investigation, utilising numerous sources of evidence to study a contemporary phenomenon within its real life context, where the limits between the phenomenon and its context are not clearly apparent (Yin, 1994).

To date, the majority of the methodologies employed have been based on descriptive methods for the observation of the medium based on an analytical file, which can be completed by means of surveys or interviews with other experts (persons in charge of cybermedia) as a method of heuristic evaluation, and with users as a method of investigation; or by means of the focus group technique, which is defended by Nielsen (1993), Rubin (1994), Dumas and Redish (1999) or Scheneiderman and Plaisant (2006) to consolidate the results of the evaluation.

There are research studies based on analysis of the contents of the cybermedia where interesting results have been obtained concerning the subject of design on Internet. This is the case with the international study coordinated from Holland by Van der Wuff and Lauf in 2005, in which certain design characteristics of online European newspapers were analysed in comparison with the traditional press. Concretely, the insertion of photographs, multimedia and advertising elements were observed. However, this comparative content analysis did not have design as its exclusive object of study.

Other research studies, such as those of Nielsen, Paul and Ruel on usability, or those of the Poynter Institute on the user's eye movement facing the screen, help in understanding design efficacy starting from a concern with the user.

In spite of the contribution of these types of study, shortcomings can be detected in the methods employed when it comes to answering the motivations for the user's interest in the design elements or characteristics that have most attracted his attention. Thus, the merits of the methodologies employed could be improved by techniques of analysis that would help in determining what motivated the user's interest in the different presentations of the information. Complementary methodologies are considered in order to achieve those results: focus groups with users, interviews and questionnaires or surveys.

At present, new research studies related to design are underway, concretely on the design of interfaces for mobile formats, the use of digital photography in the cybermedia, or the relation between the design and consumption of cybermedia by young people (Larrondo and Serrano, 2007: 70).

Other studies that have a bearing on design, although not as direct as the above, proceed from the confluence of different disciplines for undertaking research centred on design: the relation of typography with structuralism, the influence of the theory of deconstruction on journalistic design or the study of software as the space where the theory of design is put into practice.

2. PROPOSAL FOR COMBINING TRADITIONAL AND INNOVATIVE METHODOLOGIES

As in any research, the establishment of a conceptual theoretical framework in the first phase is an essential starting point in order, in this case, to analyse the evolution of design from an historical perspective or, simply, to contextualise the object of study and generate the state of the question. The scant existing bibliography in print makes it necessary to have recourse to Internet as the main source of information for completing this first phase.

The theoretical approach to design as a research object requires knowledge of the essential characteristics of online communication, as well as of the repercussions of the systems of production, distribution and reception in the final presentation of the informative message. The continuous technological changes affect those systems and design, hence the methodologies employed in the few existing studies require constant revision.

2.1. Descriptive Methods

The descriptive methodology, based on observation of the medium, is the most widely extended amongst the scholars who, in the field of Communication, centre their object of study on design. It is applied both to analyse the complete structure of the web page and to study the inclusion of more specific elements, such as images, multimedia elements or interactive services. The starting point, once the object of study has been delimited, is designing the analytical file. A proposal is presented below of the fields to be included on this file, divided into two blocs , the head and the body:

a) Head of the file

? Name of the cybermedium

? Place of publication

? URL

? Date of analysis

b) Body of the file

? Frequency of updating

? Correspondence between the name of the cybermedium and URL

? Existence of a prior register

? Possibility of subscription

1) Contents:
   - Includes pages of the printed version
   - Access to archives
   - Breaking news section
   - Scrolling of real time information
   - Language applied in news contents
   - Language applied in advertising
   - Multimedia elements (audio/vídeo/Flash)
   - Personalisation of contents (newsletters, headlines sent to electronic mail, PDA, RSS)
   - Promotions
   - Static and dynamic image, in colour/black and white, on front page only or also in the interior, pod casting
   - Services (games, puzzles, obituaries, classifies advertisements, e-commerce)
2) Accessibility and research:
   - Internal/external search engine
   - FAQ
   - Site map
   - Internal/external links related within the texts
   - Special technical requirement (QuickTime, Acrobat Reader…)
   - Possibilities of feedback (email addresses of editors or sections, letters to the editor, forums, chat, blogs, surveys, commentary on articles, space assigned on the web page, sending in collaborations)
   - Application of hyperlinks (in images, texts)
   - Errors detected
3) Disposition of elements:
   - Scheme of screen structure
   - Vertical/Horizontal/Mixed menu
   - Inclusion of free tools in the design of the cybermedium (use of Youtube, Google Maps, Blogger…)
   - Option for creating different front pages (with most popular news items, news items that have received the most comment, most highly rated news items)
4) Analysis of elements:
   - Masthead (name, colour, typography, size…)
   - Headlines (link, colour, type of lettering, size…)
   - Text (number of links, type of lettering, size, number of lines, inclusion in image format…)

- Hypertext (typography, colour unvisited, colour once visited…)
- Photography (number, colour or b/w, link, animation, added commentary…)
- Photo caption (frequency, colour, extension, link…)
- Icons (number, function, size, colour…)
- Separating lines (number, function, size, colour…)
- Boxes (number, function, size, colour…)
- Advertising (quantity, placement, size, colour, animation, link…)
- Infographics (quantity, type, fixed, animated, colour or b/w…)
- Other

Descriptions can be centred on the study of a concrete case or on a selection of several media. This will make it possible to make comparisons, as in the case of studying the influence of blogs on the redesign of the cybermedia, or for comparing the presentation of the printed with the virtual media. Another sub-method can also be applied, the chronological-sequential method, which makes possible an analysis of the formal evolution of the medium from a temporal perspective.

Another exploratory technique, widely employed in recent years for describing practices related to design, is the construction of an individual or group blog. Web pages like *Visualmente, Maquetadotes, Diseño de Información, News Designer.com, Typographica* or *Infografistas* have a regular commitment to criticism of mass media design, as the following image shows.

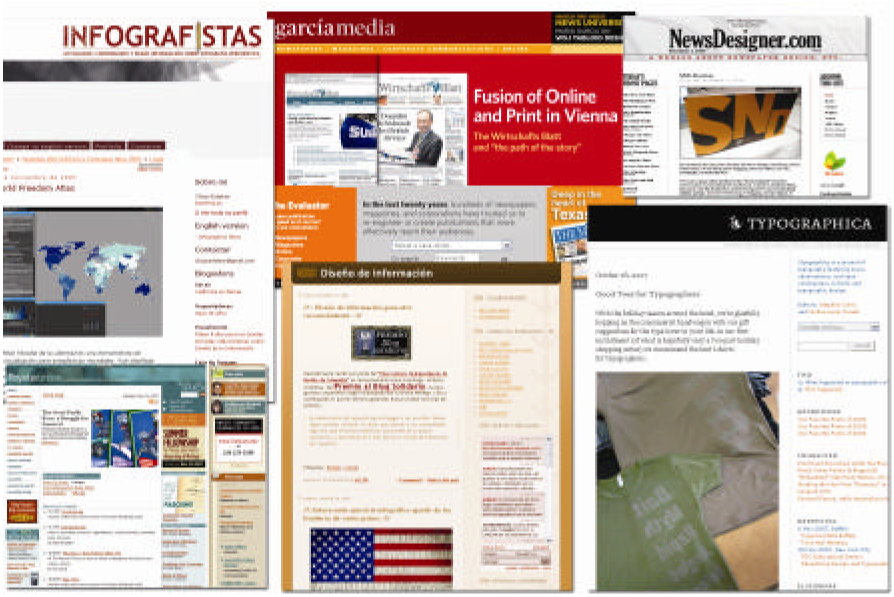

Figure 1: Blogs specialising in design are a reference point for researchers in this question

The development of networked work has made possible the emergence of new techniques applied to descriptive research. One example of a cooperative system is the construction of wikis. A project carried out on the "Media Design Research" postgraduate course of the Piet Zwrat Institute of Rotterdam, and which can be found on the website http://www.designtimeline.org/cgi-bin/archive/timeline.cgi , consisted in making an open research study on the first decade of website design. Through a pre-established chronological order, the users of the site have analysed the suitability of tools that appeared in this period; they have added images, commentaries, posed questions and, in short, constructed a collective history of Internet, summed up in 768 entries.

Wikis are not aesthetically attractive products, but they are a method of group research that is being increasingly employed.

2.2. Interview and Questionnaire Put to Experts

Interviews with experts and questionnaires put to graphic designers make it possible to analyse the degree of adaptation to the new multimedia applications and to obtain direct knowledge about the process of production (for example, to determine whether infographics are first planned for the online version and subsequently adapted for the printed version). Interviews are also the best method for establishing the existing resources, for determining the possible shortcomings in personnel dedicated to design tasks or for indicating the retraining courses in which they take part, where this is the case. The form of the interview can range from an informal conversation to a highly structured self-administered questionnaire, facilitating current qualitative and quantitative data that is obtained through annotations, the complete transcription of dialogues or the tabulation and analysis of the data.

Although in theory interviews and questionnaires can be conducted over the telephone or by email, face to face encounters are more recommendable for the study of design (Knight and Jefsioutine, 2002).

2.3. Studies Centred on the Audience

2.3.1. Analysis of Logs and Tags for Studying Navigation

The constant process of redesign of the media on Internet makes it necessary to examine the performance of each change in format using audience measurement techniques. Two of these are the systems for analysing *logs* (archives of data gathered by the web servers) and *tags* (data gathered from the user's browser by a remote system), which make it possible to evaluate page navigation and thus adapt the website to the users' habits.

Analysis through *log* files is the form traditionally used for analysing the traffic on web sites. It permits analysis of the server's log files, which gather all the page positions visited through this server. This technique emerged as a tool for the continuous evaluation of the architecture of a website.

Analysis through page markers or *tags* is more recent and is replacing analysis through logs because of its advantages. Through this technique, an HTML or Java code is introduced on each of the pages to be audited. Subsequently, the data extracted can be stored on a remote server and can be accessed online through a web interface without any need for downloading.

These two techniques make it possible to determine the number of visits made to, or the time spent on the website by users and, depending on this data, the positive or negative influence of each new aesthetic can be deduced. However, this is an essentially quantitative methodology that is used for verifying the success of redesign, but it does not provide knowledge about user behaviour and requires completion through the use of qualitative methodologies.

2.3.2. Usability Test

In recent years a current has emerged that, rather than analysing design as an end in itself, considers design as a tool for obtaining concrete goals. These goals have basically been concentrated into two: attempting to create user satisfaction and inviting participation by the reader. On his website *Useit.com*, Jakob Nielsen, an expert in usability, makes several recommendations to be applied in these tests that make it possible to determine the behaviour of the website user, to measure the impact he has on a service or a section, and to quantify his preferences. Determination of the sample is a basic starting point. To obtain quantitative results, which provide significant statistics reflecting demographic or group differences, it is necessary to test many users. However, Nielsen argues that if what is sought is the location of usability errors on a website, an analysis of fifteen users is more than sufficient, as can be seen from the following figure, although six users will come close to 90% of the total errors.

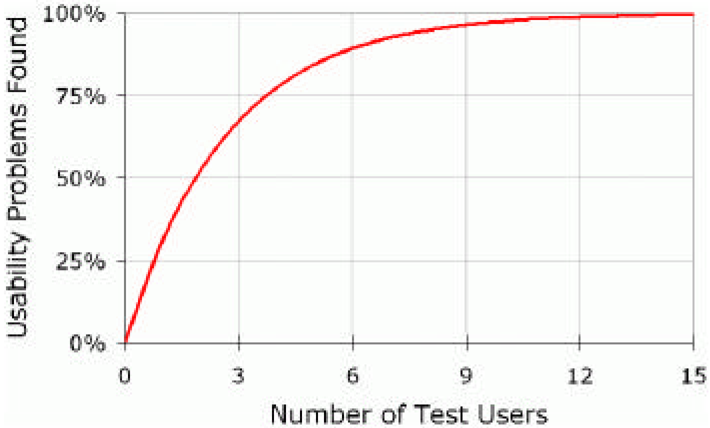

Figure 2: Source: Jakob Nielsen's chart from his March 19th, 2000 Alertbox Column.

To select a sample that will make it possible to investigate and analyse users' needs, it is also necessary to select people who have no connection at all with website design, usability or product quality measuring techniques, market research or the advertising world (Kuniavsky, 2003: p.99).

A basic usability test can be carried out in five hours, with the time distributed as follows: 30 minutes during which the members of the project determine the key questions; 30 minutes for deciding how to recruit the users; two and a half hours for testing five people; 30 minutes for analysing the data and another 30 minutes for presenting the conclusions.

In the following figure, the *Usability.gov* website reflects the complexity that these studies can achieve.

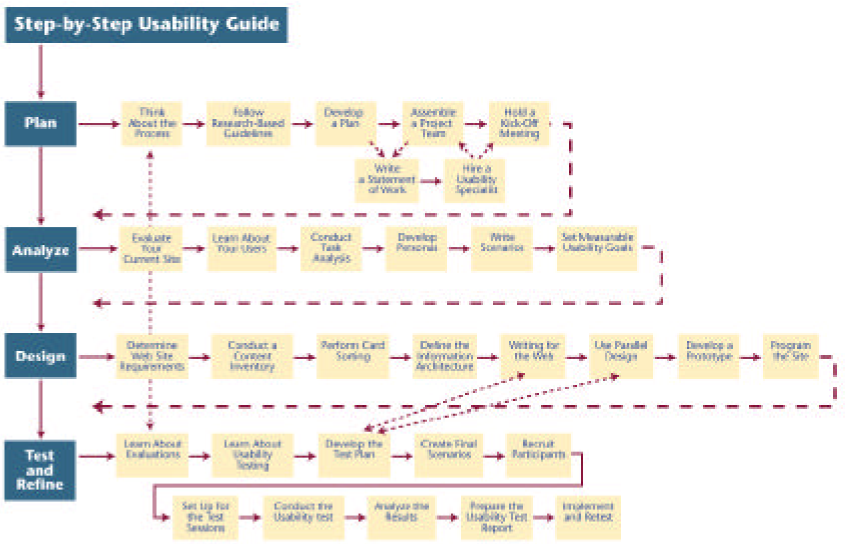

Figure 3

The object of study can be a real product or a prototype, as in the case of Newspad. The second is the preferable option, as it makes an exploratory survey possible before the product appears on the market, determining its efficacy and providing prior knowledge on the degree of acceptance generated in its potential audience.

In some cases, usability studies make use of the technique of monitoring the course of the gaze, since this not only reflects what the user sees but also where a problem has been detected. The results obtained from this methodology have a worldwide repercussion, but also require a high investment in infrastructure. Eye tracking studies require a laboratory to prevent the subjects from being distracted, and in Spain the company alt64 has used Tobii 1750 monitors and ClearView analytical software to capture eye movements precisely.

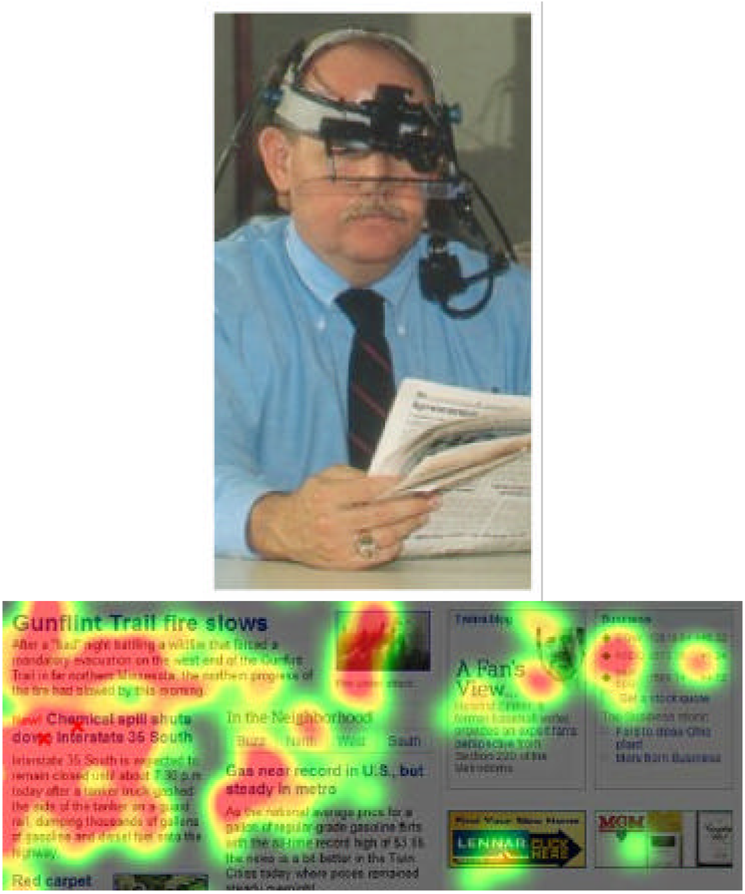

Figure 4: Representative image of Eyetracking. Source: http://disel-project.org/

This system includes a camera camouflaged in the monitor and infrared lighting that enables the confection of thermal maps with dark areas, where the pupil has not stopped, and hot areas, where the majority of users have rested their gaze. The most criticised aspects of this technique, centred on the visual behaviour of users, are that the equipment cannot measure their degree of comprehension, nor how much of their reading or scanning of the screen is retained.

2.3.3. Legibility Test

The legibility t est can be considered the direct predecessor of usability studies. Enabling comfortable reading has been a constant concern since the middle of the XX century. At present, the most widely employed technique for analysing screen reading is very similar to that used with printed media, and consists in measuring the velocity of reading in different situations, determined by differences in font size, line spacing, alignment, line breadth and typography (Richaudeau, 1987).

Other methods employed are the memorisation test and comparative tests. The latter consist in presenting pairs of screens so that the user makes a single and instantaneous choice, in this way, for example, expressing a preference for characters in upper or lower case, alignment, background colour or typography, or for determining the efficacy of enhancement through colour, the effect of blinking or the change of style in certain parts of the text.

2.3.4. Accessibility Test

Another method related to audiences is the accessibility test. The process has been automatised through the online services offered by dozens of sites such as t.a.w., Ocawa or Hera. By simply introducing the URL address and the level of analysis, it is possible to determine whether a site permits indiscriminate access to information in accordance with the universal standards contained in the document "Web Content Accessibility Guidelines 1.0" [1] prepared by the World Wide Web Consortium. There are three levels of accessibility, and the corresponding tests form part of the annexes:

? Priority 1. A web page content developer must satisfy this point of verification. This is a basic requirement. Otherwise, one or more groups of users will find it impossible to access the document's information.

? Priority 2. A web page content developer must satisfy this point of verification. Otherwise, one or more groups of users will encounter difficulties in accessing the document's information.

? Point 3. A web page content developer can satisfy this point of verification in order to improve access to the website. Otherwise, one or more groups of users will encounter some difficulty in accessing the document's information.

Other websites have specialised in offering more concrete improvements, related to the use of colour (Accessibility Color Wheel, ColorDoctor, Color Laboratory, Colour Blindness Simulator), the reproduction of mp3 files (the ccMP3Player of NCAM), cascading style sheets (CSS Analyser) or images (Image Analyser).

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[1] The norms are available at http://www.w3.org/TR/WAI-WEBCONTENT/ and the complete list of websites with online tools that evaluate accessibility can be found at http://www.w3.org/WAI/ER/tools/complete.

2.4. Complementary Methodologies

To the above methodologies can be added all those with a qualitative character that contribute new data that are not extracted from the quantitative results and that help in a better understanding of the context, the reasons for consumption of, and interest in, certain information, the impact of the design on people (sensations, influence, etc.). It would be worth considering the methods of psychology, perception, semiotics and other areas related to design, from which novel results can be obtained. Also worth considering in the design field is the Delphi method, which makes a prospective study possible.

2.5. Final Presentation of the Results

In the final presentation of design related studies there is a necessary combination of verbal and visual contents; a hybrid proposal of texts and images since, as Marshall McLuhan and Quentin Fiore reflected in *The Medium is the Massage: An Inventory of Effects*, design itself is considered to be an explanatory tool.

Due to the constant variations that are taking place on Internet, it is also advisable to include a final glossary that will help to clarify the new concepts.

5
Narrativity

1. HYPERTEXTUAL NARRATIVITY

1.1. Theoretical Bases for the Study of Hypertext

Research in the news hypertext has barely begun. The theory of hypertext dates from further back: to 1945, if reference is made to the famous article by Vannevar Bush "As We May Think" in *Atlantic Monthly*, and to 1965, if we set out from the first time the term was used, in a communication that Ted Nelson presented to that year's national conference of the Association for Computing Machinery in the United States.

The canonical, or at least foundational, definition is that of Nelson himself (1965:140): "Non-sequential writing with links controlled by the reader".

In our opinion, a good definition of hypertext is given by María Teresa Vilariño and Anxo Abuín González in the introduction to the collective book *Teoría del hipertexto. La literatura en la era electrónica* [Theory of the Hypertext. Literature in the Electronic Age]:

> The hypertext […] is a type of interactive, non-sequential, non-lineal (or multi-lineal) text, that is, one not based on a fixed sequence […] its sequentiality can vary considerably in the course of reading (Vilariño and Abuín, 2006: 20).

This of course contrasts with the concept of narratology formulated by Mieke Bal, who emphasises that "compared with other forms of art – architecture, the visual arts – a written linguistic text is lineal", while recognising the existence of a double lineality, that of the text and that of the fable. In any case, Bal also indicates that there are ways of breaking rigid lineality, such as deviations in the sequential order. This, applied to the hypertextual structure, would be a lineal with deviations. Superseding unilineality, however, does not mean a break with sequentiality.

What seems clear is that a specific narratology of the hypertext is required. A narrative that distinguishes, as David Crystal does, between the interrupted text and the non-lineal text, "which can be read in a multidimensional way". Crystal draws attention not only to the properly hypertextual, ramified structures, but also to the proliferation of lists and matrixes, and to the graphic eclecticism shown by the Web (Crystal, 2001: 196 -197).

Although the concept of hypertext dates from the 1960s, the study of hypertext as an area of scientific knowledge can be traced back above all to the 1980s. A good overview of the first twenty years of research in hypertext is provided by Daniel Cunliffe in the pioneering scientific journal in this field, *The New Review of Hypermedia and Multimedia*, which emerged from the ACM Hypertext conferences. The theory of hypertext is not sparing in its criticisms of, and warnings about, the still limited degree of hypertextual development of the World Wide Web. The latter is, obviously, an enormous global, world system of information, but it is far removed from the complexity achieved by computer hypertext programs like the pioneering Hypercard. Special criticism is directed at the fact that the semantics of the hyperlinks on the Web are excessively localised.

1.2. Superseding Lineality: Hypertext as Intertextuality

Lineality is a widespread concept, but it is not free of problems. Different authors, from different viewpoints, have placed it in question, if not to negate it, then at least to try and define what its essence is. Hence, Marcos Palacios, in a text titled "*Hipertexto, fechamento e uso do conceito de não-linearidade discursiva* [Hypertext, Dating and the Use of the Concept of Discursive Non-Linearity]", tries to overcome the conceptual confusion surrounding linearity and proposes a pattern following Gunnar Liestøl's concept of closure (Liestøl, 1987: 87-120). That is, how the openness and plurality of itineraries of a hyperdocument is conjugated with the expectation of an ending that will provide meaning and coherence – at least in traditional terms – to that narrative. This is a psychological concept, a concept of completing the reader's task. Given that the reader does not always know the structure of the document, rather than read in the traditional sense of the term, frequently he must first explore the structure, if this is not a conventional one – subject to reading pacts like the majority of the (online) newspapers, for example.

Once he is acquainted with the structure, that is, when the reader of a specific hyperdocument has become "expert", he no longer explores or scans, but searches for concrete information. Therefore in that more or less complex structure, which is more or less familiar or unknown to him, the reader establishes, or tries to establish, his own linearity or linearities. His task is not so much to seek narrative closure, as to determine the *iter* he will follow. It is thus useful to distinguish between discourse and narrative. Discourse, which is necessarily sequential, is the concrete form acquired by narrative through the process of reading, or recovery, of information; a discourse is always lineal.

In the opinion of Gérard Genette, hypertextuality is no more than a form of transtextuality, a term equivalent to intertextuality. A hypertext is the relation between a text B (hypertext) and a prior text or text A (hypotext). He thus takes up the definition of intertextuality given by Julia Kristeva, for whom this is a case of "perception by the reader of the relations between a work and others that preceded or followed it". It is thus a concept that refers more to reception (reading) than to production. In short, it is more a question of defining a relation of kinship or filiation. In our opinion, it would be interesting to proceed further and to see to what extent the hypertext, as we are defining it here, is closer to her concept of paratext, that is, "those aspects and elements that surround and envelop the text and that in some way define its intention".

From a psychological perspective, Peter Whally refers to the "myth of lineality". For this author, a hypertext is in reality more structured and hierarchical than a conventional text. In his opinion, the hyperlinks of a hyperdocument frequently do not provide a truly cohesive reference. Only selectivity is cohesive, according to Whally, when the author chooses a series of facts that are necessarily connected with others, thus giving rise to lineality (Whalley, 1993: 7-17).

The same warning is given by Eric Espéret, who points out that when this concept is used, in reality three levels are being referred to: the organisation in minimum linguistic units; the mode in which the information is stored in the medium; and the mode in which the reader controls access to that information. For Espéret, the organisation in sentences and paragraphs (nodes) is similar in texts and hypertexts. The differences begin at the level of storage, which in the case of hypertexts is not directly within the reach of the reader, but corresponds to the computer system (this is where the concept of interactivity comes into play). The systems of navigation (macrostructure of the hyperdocument) and information recovery find no comparison in the printed text. In reality, Espéret proposes to replace the opposition between lineality and non-lineality – or, better put, between unilineality and multilineality – with different degrees of flexibility in the access to information. In the final instance, he adds, the key lies in the control given to the reader in that access to information, which will always be guided by the aim of efficacy and thus of coherence. Every experiment carried out in this respect, he concludes, needs as precise a representation as possible of the structure of the hypertext, given that every reading strategy requires a mental representation (Espéret, 1996: *passim*).

On the contrary, Martin Engebretsen insists that the non-lineality of the news hypertext contributes to the characteristic of objectivity, which is similarly not free of problems. From an epistemological approach, Engebretsen asserts that the possibility of updating the content helps to take the journalistic information closer to the ideal of objectivity. Similarly, this Norwegian lecturer believes that the replacement of the narrative structures of the journalistic genres by other networked hypertextual structures also results in a gain in objectivity, almost certainly because the latter has a representation that is closer to the process of human thought. To date, however, the use of these hypertextual structures, more open than lineal ones, is far from being a widespread practice in the cybermedia, with some exceptions. As Ramón Salaverría has shown:

> After ten years of evolution of the cybermedia, the real balance is much more modest […]. The contents offered by digital publications nowadays show a notable neglect by the journalists for these new expressive possibilities […]. We find ourselves facing a professional reality of slow and gradual changes (Salaverría, 2005).

2. METHODS OF RESEARCHING THE HYPERTEXTUAL NARRATIVE

2.1. Hypertextual Structures

2.1.1. *Reticularity of the Structures*

The structure of nodes and, above all, links, is what has probably received the most attention from researchers. The non-lineal, open, arboreal structures have especially attracted the efforts of those who study the hypertext from the viewpoint of literary theory. The structure, as a cognitive and referential organisation, is indeed a very important element within the aims of research like that of Luiz Marcuschi, who refers to works on hypertextual coherence as a response to the interests of readers, and to the generation of sequences through an hierarchical arboreal distribution, a distribution in the form of a list, or in traditional lineal form.

Leão (2001) and Landow (1995) note the existence of two differentiated structures of hypertext: one that is less complex, termed arboreal, similar to trees which have a central axis; and another, with a greater degree of complexity, that is organised in a network. The first type of structure would be a digital book, while the second evokes the idea of interconnected networks.

In the arboreal hypertext, “the central text functions like a stem. The annexes (footnotes, glossary, bibliographical indications, etc.) are subordinated to this body, like the branches of a tree” (Leão, 2001, pp.60-61).

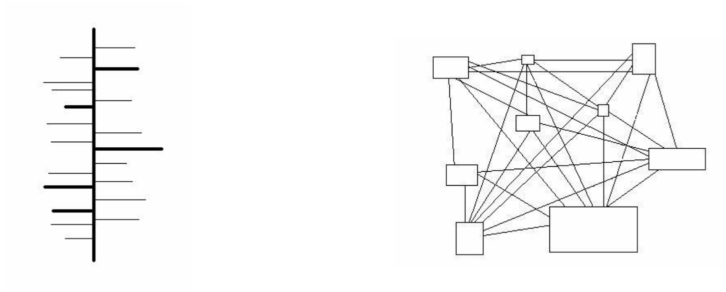

Figure 1: Hypertext in arborealt form and networked structure, according to Leão (2001)

In the networked hypertext, the idea of a central trunk is not found, and the weave of connections, which is established between the lexias, is a much more complex one, since, in theory, it does not respect any type of apparent hierarchy in the organisation of the information. This idea evokes the idea of a rhizome.

2.1.2. *Models of Hypertextual Narrative*

Salaverría and Díaz Noci (2003) present a series of models of hypertex-tual narrative that can be applied to journalism. As there are different models and the hypertextual structure is more complex than a lineal one, writing a news item in that format is not a simple task. Salaverría (2005) warns that the mere fact of inserting links into texts is not sufficient for the construction of a hypertextual narrative.

In general terms, the authors present two hypertextual structures: axial and reticular. The former are structures organised around a central body, which can, in some cases, show one or several parallel sequences.

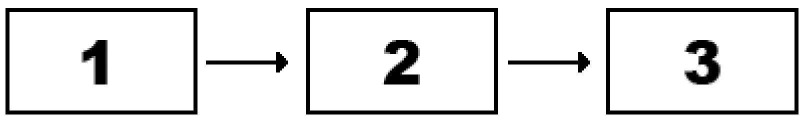

Figure 2: Lineal axial structure

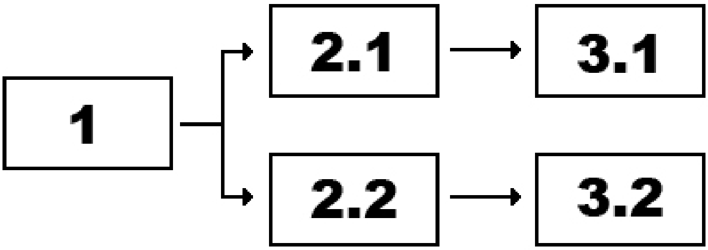

Figure 3: Parallel multilinear axial structure

The reticular structures do not answer to an axial structure, rather they evoke the idea of a rhizome. In Salaverría's opinion, such a model is not the most suitable one for relating journalistic facts, it being more appropriate to employ reticular models in information complementa ry to the main narrative.

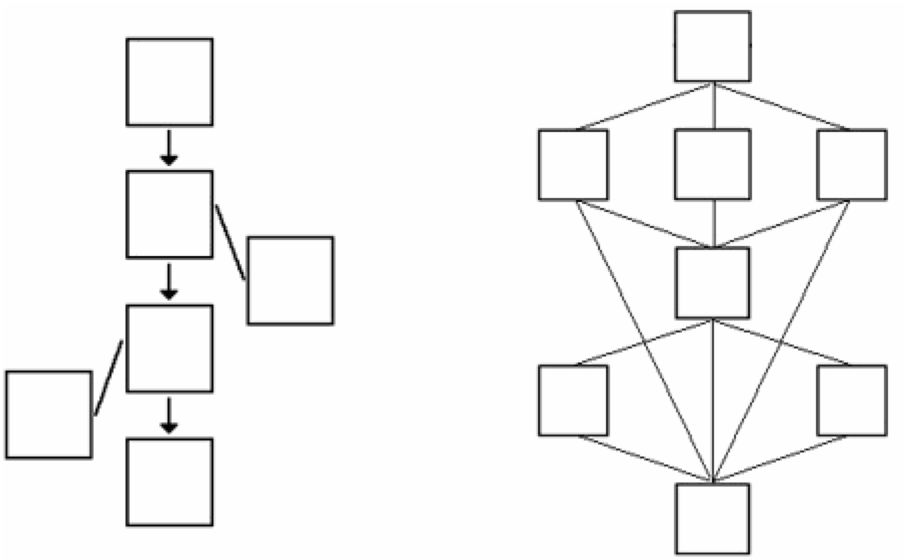

Figure 4: On the left, one of the two more simple models of hypertextual narrative proposed by Salaverría and Díaz Noci (2003).

Research done by D. Dee-Lucas in 1996 produced some highly interesting results:

1) The arboreal structure is easier and quicker, so long as a clear search criterion is specified.
2) Lists result in slower and more difficult access.

3) The traditional lineal text results in a quality search, but is even slower.

Similarly, the greater the segmentation, the slower but surer the search, with a reduction in the number of mistakes. And this is precisely where the concept of coherence comes into play. Once again, it is necessary to recall the theories of Martin Engebretsen on intranodal, internodal and hyper-structural coherence. Or, as Stuart Moulthrop has stated, on the one hand, digital texts are structures of rupture, but, on the other, they are works in continuity, “in consonance with the patters and rhythms of the news industries” (Moulthrop, 1997).

This research has been completed and qualified in later research by Herre van Oostendorp. The most important qualification arises from the discovery that “readers with weak initial knowledge elaborate a less coherent situational model if they read a hypertext provided with a contents map, than if they read the same document without a contents map”. A contents map helps in understanding the macrostructure, but not the microstructure. Put differently, better results were obtained with uninitiated readers using a hypertext with little structure. The fact that a contents map helps - as shown in the study of Dee Lucas - navigation and memory (aspects that we will develop in more detail in later chapters), does not mean that it is also useful for comprehension (Oostendorp, 2004: 143-154).

2.1.3. *Importance of the Hyperlink*

Many researchers have pointed out that the central element of hypertextual structures is the hyperlink. In the field of literary studies, for example, Susana Pajares Tosca speaks in her thesis and in several articles about the poetic value of hyperlinks. These are not just a technical means for relating two or more nodes, but are the very axis of the hypertextual structure, of the narrative. Other researchers, specifically Marcos Palacios and Luciana Mielniczuk, have referred to the paratextual value of hyperlinks; the hyperlink is thus an innovative element because it includes and puts into relation the characteristics of intertextuality and multimediality.

2.1.3.1. Gunder

Gunder (2002), on the basis of a description and analysis of hyperlinks (a task that she calls *linkology*), proposes a methodology for analysing the ensemble of hyperlinks of a literary hypertextual narrative. This author establishes categories and codes for the identification of the types of hyperlinks, and the flow of those hyperlinks within the web page. Gunder is partial to the skeleton of the hyperdocument and the relations it itself establishes, whether the junction is unidirectional or bi-directional, whether it is visible or hidden, for example.

2.1.3.2. Trigg

Equally interesting is the study Trigg developed in the early 1980s, in which he proposes the elaboration of a taxonomy for the types of hyperlinks. The central concern of this research is with scientific texts disseminated on the digital networks and, while not the first, this is one of the pioneering works on this question. The author divides hyperlinks into two broad categories: normal hyperlinks and hyperlinks to commentaries. By normal hyperlinks, he understands lexias belonging to different scientific works, while the junctions of commentaries refer to lexias dealing with a proposition or data.

We will consider the normal hyperlinks, which serve to delineate the different parts of a scientific text, since they offer a broader typology and are of greater interest to what concerns us here. Trigg (2002) divides them into:

- Citations: These are quotations from other authors.
- Bibliographical review: The word used by Trigg is *background* and this refers to the presentation of works already developed by other authors, or by the same author who prepares the hyperdocument.
- Futures: Links that are activated when new works on the subject appear.
- Refutation: Revocation of ideas of other authors.
- Concordance: Acceptance of ideas of other authors.
- Methodology and data: Work routines, presentation of data.
- Generalisation and specification: The author offers no explanation of this question, hence interpretation of what these links mean does not appear to represent any difficulty.
- Abstraction and example: Similar to the previous entry.
- Formalisation and application: Refers to the systematisation of notions that lead to a theory and its application in order to obtain practical results.
- Argumentation: The author divides argumentation into four subcategories: deduction, induction, analogy and intuition.
- Solution: This does not necessarily deal with the solution of the problem raised in the research, but instead to the advances made by the researcher.
- The following bloc belongs to the same group, but Trigg draws attention to the very close relation existing amongst the nodes of the text that they interconnect. The author warns that in general it is necessary to read both lexias.

- Summarisation and details: The ideas contained in one lexia are detailed in another.
- Alternative vision: A new point of view for interpreting the ideas presented.
- Rewriting: The ideas are identical, but the wording is different.
- Simplification and complexification of the ideas presented.
- Explication: Develops explanations of certain parts of the work.
- Updating: Presents new information.
- Continuation: One lexia presents the sequence of another.

The author warns that these divisions do not function in a stationary way and that the functions of the links can occur concomitantly, that is, a single link can attend to more than one function at the same time (Trigg, 2002). This work is both extensive and specific with respect to the use of hypertext in the distribution of scientific works; nonetheless it serves as a starting point for other fields.

2.1.3.3. Nielsen

Jakob Nielsen identifies three types of hyperlink. We can say that this is a classification as regards the function they perform:

- Structural navigation links: These links summarise the structure of the informational space and enable users to go to other parts of the space. Typical examples are the buttons of the initial pages and the links to an set of pages subordinated to the current page.
- Associative links within the contents of the page. Those links are normally underlined words (although they can also be image maps), and they point towards pages with more information on the anchor text.
- List of additional references. These are links offered to help users find what they are looking for if the current page is not the correct one (Nielsen, 2000:53).

2.1.3.4. Leão

Lucia Leão (2001), concentrating on the technical aspects of the elaboration of the hypertext, distinguishes between disjunctive and conjunctive links: the latter refer to the idea of simultaneity and the former to optionality. The disjunctive links refer the reader to another lexia. Similarly, the conjunctive links also perform this task, but they provide the experience of concomitance, since they make use of the resource of a simultaneous window, which might be another window of the navigation program that opens, or a smaller window called a pop up viewer.

2.1.3.5. The Classification of Lluís Codina

A very thorough classification is proposed in chapter 3 of *Manual de redacción ciberperiodística* [Manual of Online Journalistic Newswriting] by professor Lluís Codina, of the Pompeu Fabra University of Barcelona, around the following criteria for a typology of hyperlinks:

Criteria for the analysis and/or establishment of links
1. Route
Type of route provided by the links
2. Logic
Logical principle followed by the links
3. Degree
Number of nodes participating in the links
4. Exploration
Mode of exploration that they produce
5. Authorship
Who establishes the link
6. Commutation
Mode of commutation between nodes that is produced

Source: Codina, 2003.

On the basis of these criteria, Codina distinguishes the following types of hyperlink:

1. According to the route:
1.1. Sequential: they maintain the structure and cohesion of the hyper - document.
1.2. Non-sequential: they permit access to a section (or level) without passing through the preceding sections.
2. Logical criterion:
2.1. Structural.
2.2. Semantic.
3. By degree, or number of linked nodes.
3.1. 1:1 links, the typical junctions of the WWW.
3.2. 1:N links.
3.3. N:1 links.
4. By the form of exploration:
4.1. Embedded in the text itself.
4.2. Superimposed, from an index, list or summary.
5. By authorship:
5.1. Author's links.

5.2. Reader's links (for example, commentaries in a weblog, or the entries on a wiki website).
6. By commutation:
6.1. Substitution links: the destination node replaces the node of origin.
6.2. Superimposition links: a new window opens, without closing the window of origin.

The determination of the type of links is equally important when investigating the narrativity of journalistic texts on the WWW.

2.1.3.6. McAdams

From a journalistic perspective, Mandy McAdams (2002) draws attention to the fact that online narrative has already been the subject of discussions on fiction and literary studies, while this has not happened with journalism. The same can be said of the use of the hyperlink, although, as we shall see, there are authors, such as McAdams herself, who draw up rules and advice on the use of the link in hypertextual narrative and propose classifications of a technical type. There are neither specific studies on how links are being employed in digital newspapers, nor well founded writings on how this resource should be used in hypertextual news items.

2.1.3.7. Mielniczuk

When studying journalistic hypertextual narratives, Luciana Mielniczuk (2003) proposes, on the basis of an exploratory study, a preliminary typology of hyperlinks.

In this categorization, hyperlinks are divided into three groups: one referring to the navigation of the product (conjunctive and disjunctive links); another group referring to the universe and scope of the links (internal or external); and, finally, a group referring to the organization of the information, in which the links can be divided into editorial, service or advertising ones. The editorial links can in turn be divided into narrative or organizational ones. The former are associative, while the latter are of reference for navigation.

- Navigation
  - Conjunctive
  - Disjunctive
- Universe
  - Internal
  - External
- Organization of the publication
  - Editorial
    - Organizational
    - Narrative
      - Event
      - Detail
      - Opposition
      - Exemplification or particularization
      - Complement or illustration
      - Memory
  - Services
  - Advertising

Figure 4: Typology of links proposed by Mielniczuk (2005)

2.1.3.8. Palacios and Mielniczuk

Also from the perspective of journalism, these authors defend the idea that the link performs paratextual functions, following Genette (1997), since they are an element that: a) presents the principal text; b) offers the transaction between the world of the reader and the world of the text; c) carries out the transition between these two worlds; and d) is situated on the frontiers of the principal text and establishes its limits (Palacios and Mielniczuk, 2001).

To conclude this question of classifying and typifying links, we will briefly refer to the conception of Ricardo (1998), who explains that the hyperlink acquires different meanings and degrees of importance depending on the discipline that studies it. The author cites the case of literature and documentation. In the first case, the link has an essential function related to the possibility of intertextuality, while in the other discipline, it is an instrument permitting more flexibility and access to information.

2.1.3.9. Classification of Online Journalitic Links by Pérez Marco

In the case of the news item, a particular typology of links has been proposed that takes account of the traditional and novel uses of the genre on the Web (Pérez Marco, 2004).

1. Para-informative service links: links to documentation (search services, databases, etc.), links to service information and links to complementary resources for the reader (games, chats, letters to the editor, dispatch of news items, etc.).
2. Meta-informative links: navigation maps, user assistance, indexes of the structure of the electronic edition.
3. Informative links: exterior (sources exterior to the medium) and interior (updated information, relational information, information that contextualises and broadens the news item, textual and multimedia – images, infographics, sound, video).
4. Iconic links for moving: icons, arrows, buttons, etc.

The same need to adapt the links to the particular hypertextual characteristics of each prototype has been observed for reportage. In the case of this genre, the discursive rhetorical analysis has been made on the basis of a typology taking account of the greater richness brought by the hypermedia to its characteristic discursive categories (antecedents or background, contextualisation, broadening, documentation, etc.), as well as to its traditional functions as a deep and well-documented genre. Together with these uses, the classification of links for reportage also takes account of other uses that are characteristic of online journalistic forms, based on the updating of contents, as well as novel types of consumption - multimedia and participatory.

2.2 The Semiotic Approach

It is obligatory when speaking of semiotics to mention the Italian authors, starting with Umberto Eco. In his *The Absent Structure*, Eco recalls that a part of semantic analysis deals with narrative structures: Propp, Todorov, Greimas, Barthes, Levi-Strauss, Genette or Morin have all concerned themselves with this. And this inevitably leads to rhetoric. A possible rhetorical path for the analysis of hypertextual structures is the application of

Quilian's model, or model Q, "which is based on a mass of nodes interconnected amongst themselves by different types of associative links"; besides, this is a model that envisages the incorporation of new information - it is a creative model. It is a question of seeing if there are "systems of rules" or whether, in the case that concerns us here, the journalistic hypertext, the tendency is to work, as in teaching journalistic newswriting, "by repertories of examples, or models of behaviour" (Eco, 1968,1999:19-21). That is, whether we are seeking grammaticalization or textualization. "In the first case," Eco recalls in his *A Theory of Semiotics* (1976) (Spanish version: *Tratado de semiótica general*, 1977), "the combination of discrete units is what generates texts […]; in the other case, society directly generates texts that appear as macro-units (from which, when necessary, the rules can be inferred) which, above all, propose models to be imitated" (Eco 1977, 1988: 199, 222).

2.3. The Rhetorical Dimension

Researchers like Jean Clément have referred to the rhetorical figures of hypertextual discourse. This is a case of reductionism, into which rhetoric itself had descended, especially during the XIX century, when it was reduced to a mere repertory of figures. Clément basically enumerates three: synecdoche, asyndeton and metaphor. In the first case, synecdoche means in the case of hypertext that the fragment (the node, the hypertextual scene) is taken for the hyperdocument in its totality. It is, contrary to the case of the printed text, a dynamic fragment: with each node – which we must remember is coherent in itself – the reader tends to imagine the whole; but each new node towards which he advances obliges him to reconfigure the overall vision of the hyperdocument that he is discovering. It is therefore an exploratory figure.

Asyndeton, a figure that consists of suppressing the term of union between two prepositions, is transferred to the hypertext in the sense that each node "floats" on the screen, without any evident union, or one that is temporarily constructed, with the other node(s) of the structure.

Finally, according to Clément (1995), metaphor enables each node to be presented to the readers according to the itineraries for which it was written. That is: its coherence, to put it differently, is constructed according to a higher coherence. This is a figure that is especially extolled by cognitive theory, which considers it to be the principal mechanism by which abstract, conceptual processes are understood. Perhaps that is why Bruce Westley affirmed that the mass media triggered cognitive flows of an "indirect, unilateral and anonymous" nature (Westley, 1967), a paradigm to which the hypertext brings a profound change. Thus, as Élida Lois says:

> The convergence of apparently separated fields of knowledge, such as those of literary and computer theory, is a further sign of that paradigm change that has been observable in the contemporary *episteme*; since in the electronic *multimedia* editions the possibilities are multiplied of replacing the traditional notions of lineality, centre, margin and hierarchy with those of multilineality, nodes, nexuses and networks (Lois, 1997).

Another author who has rehabilitated rhetoric as a descriptive perspective for studying hypertext is Espen Aarseth. He even presents what he considers to be the most important characteristic of the hypertext, non-lineality, as a rhetorical figure, but not as a trope. Non-lineality can include bifurcation, links and jumps, permutation, computation and polygenesis. Bifurcation is the simplest figure and is evidently non-lineal; according to Jay David Bolter (Bolter, 1991), every bifurcation is a hyperbaton. According to Aarseth, links are the most relevant figures of the hypertext; they function at the syntactic level, given that they separate and order the units of information, the lexias (Aarseth, 1997). According to Manuel Gago, lexias can be minimum dependent units or minimum interdependent units, according to the level of autonomy they offer with respect to context. This distinction is not merely a technical one but also concerns textual coherence. If in the cybermedia, Gago indicates, “a minimum unit of content contains a certain relational value”, it manages in this way to “increase depth […], favour the possibilities of user personalisation [and] reduce the costs of content elaboration”, that is, it favours a modular conception of journalistic information (Gago, 2006: 114-116).

The search for totality, even when the reader is circumscribed to the node, is an aporia, and when a new node is revealed, we find ourselves facing an epiphany. This is a case, according to Aarseth, of the dialectic between searching and discovery, which is moreover typical in games. Narration is not part of the game, although description is. Recurrence, analepsis (the flashback) and updating are also rhetorical resources, in this case kinetic ones, and they have been inventoried by Michael Joyce (Joyce, 2000).

However, authors like J. Yellowlees Douglas (1992) or Lev Manovich maintain that the rhetorical figures of the hypertext can be reduced to two: metaphor and metonymy. In the opinion of the former and of Stuart Moulthrop, a hyperdocument is a metonymic linguistic network, which leads to a metaphor of the (cyber)text as a whole. Facing a metonymic reading (each node in relation to the whole), and being uncertain about the complete network of nodes and about what lies beyond the next link, Moulthrop and Yellowlees propose a cartographic reading, where reading is done from a map that enables the whole structure to be visualised.

The rhetorical dimension of the study of the hypertext has even attracted anthropologists, as a study of the modes of transmission of the culture under study. There are those, like Juan Carlos Rodríguez (1999), who see in the hypertext the possibility of democratising culture, as it changes the dominant voices, or at least offers the possibility of polyphony, modifying the concept of authorship and authority (both from the Latin *auctoritas*). The anthropologists who have, occasionally, directed their attention to the changes brought by the hypertext have emphasised its concomitances with postmodernism and semiotic theory, especially with the ideas of Roland Barthes, Michel Foucault and, above all, Jacques Derrida and his concept of decentralisation. They also have recourse to the dialogic concept of the ethnographist S. Tyler (1991).

At the start of the 1990s, one of the principal theorists of the literary hypertext, Greg Ulmer, proposed an experiment that in part followed the theories of Derrida, above all the concept of “apparatus”, taken from the critical cinematographic current, as a “social machine”, more ideological than technological. Ulmer compared three textbooks, one of them classical - the *Rhetorica ad Herennium*, the *St. Martin’s Handbook* and an electronics book, and reached the conclusion that it was too early for a codification of hypertextual rhetoric, although an effort of conceptualisation should be made (Ulmer, 2001).

2.4. Hypertext and Cognition: the Psychological Approach

The connection between hypertext and cognitive science is a field of investigation that has attracted many researchers, in spite of its producing results that are not fully conclusive. Marie-Laure Ryan (2004: 292), for example, has highlighted the relation between narrative and the cognitive theories. Facing this, there is the position of those who consider narration as a form of representation that varies historically and culturally.

Peter W. Foltz (1996) proposes an analysis based on the predictions of comprehension, especially bearing in mind coherence, that is, how any hypertext, like any other text, seeks primordially to offer information to the reader in an understandable form. The models of comprehension concentrate on what will be remembered by the reader, on the context, legibility and coherence, and the aim. In the so-called Kintsch model, there are three levels to be taken into account: a superficial understanding of the words, the meaning of the text and a general understanding based on the text and on the context. The coherence to which they refer is semantic, as Munhoz de Moraes (2004) also points out. They also make mention of the mental representation (coherence graph), which takes the form of an hierarchical structure, a macrostructure in inferential terms. This is a question of its overall coherence, of the macrostructure that Van Dijk speaks of. In every (hyper)text, there are some parts that can be identified as necessary for establishing that coherence, which is why they can be employed for predicting the comprehensibility of its reading. As every node or textual section in a hypertext is connected to other nodes, each of these "jumps" must anticipate a certain coherence, which frequently obliges the reader to infer the necessary information for joining these itineraries and providing them with an understandable meaning.

Peter W. Foltz proposes two textual experiments that can be applied to the study of hypertexts:

1) Comparing the level of comprehension and the reading strategies of the same contents presented in the form of lineal text and in the form of two hypertexts. To avoid incoherent nodal jumps in the second of the hypertexts, a prior micropropositional analysis of the text was made, determining which phrases were the ones that acted as the axes of ideas.
2) Verbal reports of the strategies of the readers of hypertexts: this completes the first experiment, which determined that the reading strategies in each of the three texts and hypertexts were very similar, and attempts to discover the reasons for those strategies. Of the six subjects involved in the experiment, two were asked to search for concrete information, and the other four were asked for a general understanding. While they were reading, they were asked to explain what they were doing. At all times it was revealed that priority was given to the search for coherence.

The researcher Patricia Wright (1993) has referred specifically to the jumps made by readers within a hyperdocument. For example, empirical studies have shown that readers like to be able to jump from a concrete point of the hyperdocument to a glossary explaining terms they do not understand. The desire to indeed make a jump (that is, follow a proposed hyperlink) depends largely on the design, and even on the form in which it is represented (a word or an image). Another preference of users, brought to light by the studies, is for a general diagram or a "site map" (or a map of the hyperdocument). On the production side, creating effective hypertexts means providing them with strategies that can be anticipated by the reader and that facilitate his work: searches, for example.

2. READING HYPERTEXTS

The changes not only in the production but also in the reception of the new journalistic messages have given rise to studies proceeding from different fields, such as rhetoric for example. Tomás Albaladejo insists that "it must be borne in mind that the digital recipient is another type of recipient and also a new type of reader, and that he accedes to the information that he is offered on the screen in a different way from that of the traditional recipient" (Albaladejo, 2006).

From here, different authors have proposed certain approaches to the strategies of reading the hyperdocument that, in the final analysis, are variations on what Italo Calvino proposed in 1980 (Calvino, 1980):

1. The first-level model reader, who tries all possible ways of understanding the labyrinth frequently formed by a text, when facing what Licia Calvi called a "narrative of multiplicity" (Calvi, 2004: 37). Francilaine Munhoz de Moraes also observes this characteristic amongst the characteristics of online journalism. One of the possible strategies, unless there is a digression or an exploration of the structure itself, as we shall later see occurs when reading hyperdocuments, is to seek a predetermined objective and orientate all of the reading towards this. Or there is the search: in fact, as Licia Calvi makes clear , searches through user interfaces are a typical form of navigation through complex hypertextual structures.
2. The second-level model reader, whose aim is to understand the labyrinth in itself, its paths and structures.

This is precisely what Lucia Santaella develops in another book, *Navegar no ciberespaço* [Navigating Cyberspace]. This Brazilian researcher argues that many types of readers have developed historically, and that today a reader has emerged who navigates "in the liquid and non-lineal architectures of hypermedia in cyberspace". She therefore proposes a typology of reading that takes as its starting point not the difference between types of language nor formats or channels – which, as we have seen, are the basis of many definitions of multimediality – but instead the sensorial, perceptive and cognitive skills of the act of reading. Santaella speaks of three types of reader:

1. The contemplative, meditative reader of the pre-industrial age, corresponding to the culture of the book.
2. The dynamic reader, of a hybrid, fragmented and ephemeral world, exposed to a multitude of signs, corresponding to urban culture and the newspaper.
3. The reader of virtual spaces, an immersive reader, who combines several senses in the process of reading, who not only reads but also searches and tries to solve problems.

For Lucia Santaella (2005), hypermedial reading is commutable between different mediatic levels. It has a centrifugal effect, because the link invites the reader to make a receptive jump between several fragments or planes, through an associative logic, which takes concrete form in personalised and untransferable cognitive maps, “rhizomatic semiotic” maps. It is also a topographical reading.

More concretely, Santaella discovers three types of reading in Internet users: the wandering Internet user, who sets in motion the mechanism of abduction (she follows Pierce), the most fragile of arguments, and wanders or skims through the hypertextual offer; the detective Internet user, guided by inductive inferences, who follows the itineraries that are proposed in a disciplined way, setting in motion the logic of what is probable, through a self-organised process of trial and error, from which he learns through experience; and the cautious Internet user, who is guided by deductive mechanisms and is familiar with the informative tools by which he navigates, and who has adopted the general schema underlying the processes of navigation as his own. “In the communicative context of hypermedia”, concludes Lucia Santaella, “the Internet user reads, listens and looks at the same time. This gives rise not only to the development of new modes of looking – there is no more looking in an exclusively optical way, but also of reading in a new way and of learning with increasing speed, jumping from one point of the information to another, forming unstable and fleeting combinations”.

The researchers at the Università Católica di Milano, Gianfranco Bettetini, Barbara Gasparini and Nicoletta Vittadini (Bettetini *et al.*, 1999: 60 and ff.), who we have already mentioned, approach the study of hypertextual discourse from the semiotic point of view, as the convergence of three spaces:

1. The logical, semantic space, the topological organization of the contents and their hierarchization. Study of the logical space places the accent on an analysis of connectivity, and essentially follows the foundational postulates of Theodor Nelson. The Milanese researchers are not sparing in their criticisms of George Landow, “who denies the existence of any structure in hypertextual construction, falling back on positions inspired by post-structuralism”. From the viewpoint of classical rhetoric, this logical space would correspond to the *dispositio*. Its main characteristics are multilinearity and polysemy.
2. The space of action, or interactive space. In the first place, the multilinearity of the hypermedia structures, their reticularity and connectivity impose a new form of reading, whose typological forms are, following Bettetini *et al.*(1999: 122 ff.), as follows:
    a) Exploration, whether in a form predefined by the author, through the active cooperation of the reader, or through the options of the proposed itineraries.
    b) Consultation.
    c) Searching.

d) Learning.

In short, these forms of reading would correspond to those proposed by Ramón Salaverría in *Manual de redacción ciberperiodística* [Manual of Cyberjournalistic Newswriting]:

1) Skimming, in which "the reader acts motivated by a specific search for a certain content, which he tries to find through a superficial reading of the most outstanding items of a fair number of nodes".

2) Exploration, "a type of navigation in which the reader aims to reconnoiter a broad hypertextual territory but without a specific informational goal [and through which] the reader does not so much seek to find a concrete item of information but to scrutinize extensive (horizontal) and deep (vertical) areas of the hypertext, in order to gain a general idea of the contents and structure of the ensemble".

3) Searching, "when the reader has a perfectly defined informative purpose and is not interested in anything else […] he knows the structure of the hypertext that he is navigating, hence his movements from node to node are carried out in a well-orientated and sure way […] even enabling him, if he has the requisite tools (that is, automatic search engines) to eliminate the internodal itinerary and jump directly from the starting node to the destination node".

4) Digression or "serendipity", "aimless movement in which the pleasure of reading derives from the movement itself rather than from the information effectively obtained".

According to the EyeTrack07 study, referred to above, three quarters of the readers of the printed press are methodical ones, who read on Internet from top to bottom and then reread some pages, using the menu and the navigation bars to find information. On the other hand, when it comes to online newspapers, half read methodically and the other half do so by scanning or skimming for news items, without this altering the volume of information that both groups read. The presence of graphic elements, especially in colour, navigational elements and links increases comprehension by as much as 15% (Rovira, 2007). This is the difference, highlighted by Vanessa Ribas Fialho, between scanning and skimming; the latter mode of reading "requires knowledge of the organisation of the texts […] the ability to infer ideas", and works on "complex discursive systems, socially constructed by language, with easily identifiable patterns of organisation, configured by the socio-historic context that causes communicative activities" (Fialho, 2006). Above all, it is the genres that achieve this effect, which would explain, at least in part, the success of the cybernewspapers, which in their organisation and in the layout of their news items are so deeply indebted to the printed press.

The modes of reading are also related to the psychological aspects of the cybermedia. For example, to the so-called *horizon of expectations*, of which reception theory speaks. The components of this horizon are “knowledge, training, taste and aesthetic conventions”, on the one hand, and life praxis, on the other, as explained by Luis Acosta (Acosta, 1989: 155). The aesthetic of reception has also concerned itself with structures. Wolfgang Iser speaks of strategies in the ordering of materials – an immanent author’s strategy; but, at the same time, there are structures in the reader’s acts of understanding – passive synthesis.

Vanessa Ribas Fialho recalls that every process of reading can be understood on the basis of three models: an ascendant model, which considers reading to be, above all, an operation of extracting information, which is generally presented in a lineal form, and where the reader is a somewhat passive subject; a descending model, in which the process of reading depends on the reader more than on the text, and which consists, above all, in an interpretation; and an interactive model, which is above all based on the relation between both parties, author and reader (Fialho, 2006).

Narrativity and form of reading in cyberspace, which are often – and increasingly so – indebted to the structural logic of databases, can be explained by taking recourse to the concept of exploration. Lev Manovich, who is highly critical of the supposed crisis of narration and instead favours the description resulting from the predominance of databases, recognizes that in reality it would be better to speak of “narrative actions” and “exploration”.

Although they are related, it is useful to distinguish between the *modes of reading*, which principally refer to the cognitive skills of the reader and his concrete aims in undertaking a search for information, and the *modes of navigation*, which refer to the structure of the hyperdocuments and the possibilities offered by the author and the system for the reader to move between the items of information. Navigability is defined as “the possibility that the user has of identifying on the screen the path marked out for him on the basis of the corresponding design of usability”. Norm ISO DIS 9241-11 defines it as the union of three aspects: effectiveness, efficiency and satisfaction.

1. Effectiveness refers to the finalisation of a task and the quality of the results obtained.
2. Efficiency refers to the quantity of effort required to achieve a concrete objective.
3. Satisfaction, on the other hand, is related to subjective factors of the user, and can be defined as the level of consistency between what the user expects and what he receives.

Disseminated throughout the world with great success, the research techniques applied by Jakob Nielsen work on usability, that is, the rapidity "with which the users can learn to use a certain thing, their efficiency in using it, how much they remember about it, its degree of propensity to error and how much enjoyment they derive from using it" (Nielsen, Loranger, 2007: xvi). Usability measures the quality of the user's interaction with the product or system, from the point of view of ease of learning, efficiency in use, capacity for being remembered and, finally, the familiarity and "friendliness" of the page or website with which the user is interacting. Combining quantitative and qualitative techniques with experimental groups, Nielsen works with observational and behavioural research in order to see what the users are really doing with the websites. From the methodological point of view, Nielsen and others work on developing empirical techniques that capture the interaction between users and websites with commercial ends. Interaction is understood here in the strict sense, of clicking to obtain what is wanted, or as it is termed by Primo (2007), "reactive interaction", of the stimulus-response type. These works observe the empirical behaviour of reading web pages.

Usability verifies the efficiency of a system of predetermined mechanical exchanges, and its presuppositions are based on a transmissionist and lineal conception of communication. It supposes that an interaction is efficient to the extent that the response (of the user) fits in with the offer, does not generate conflicts of interpretation (is monosemic) and feeds the balance proposed by the system, through use (feedback). One of the problems of the qualitative methods in reception and reading of the mass media is that their validity is limited, given that it is difficult to generalise on the basis of small samples or case studies. However, the utilisation of the concept of usability in interpretative research is only justifiable in the absence of more suitable hegemonic theoretical frameworks. Usability presupposes that the reading (or the use of a web page) is mere decodification, when what is sought is an understanding of interpretative, inferential and cognitive processes.

In general, there are no perceptible discussions of a methodological type, questioning the validity of the techniques of information gathering or the coherence between the theoretical frameworks employed and the research instruments. In this respect, *netnographies* bring a tradition of methodological reflection from anthropology that is worth incorporating. Many of the analyses of users appear to take up those initial categories of the researchers of the long and short-term effects of mass communications research: attention, selectivity, memory, observable behaviour: what attracts attention on a website, where the user navigates, how much time he remains on a page, what type of information he seeks. In the best of cases, relations are sought between these questions and the socio-economic profile. There appears to be an immediate, instrumental and empirical interest in knowing what the reader of the Web does, opening up a shadow region concerning the processes of perception, recognition and interpretation, in relation to more global processes that are socially, politically and culturally significant. Moreover, it seems that the content was left aside because concern with representation was forgotten, replaced by the technical novelties brought by the forms of the new communication.

It is necessary to recover the best of reception studies, with reference to their methodological audacity, while accepting that the semantic field of the term reception adds little to the understanding of the processes unleashed in contemporary societies, which are essentially mediatic and digitalised. Reception studies inaugurated a tradition that understands media consumption not as a stage of the communicative process, but as a new site from which to rescue the creativity of subjects, the complexity of everyday life as a space for producing meaning, and the desirous, ludic character of the relationship with the media, as Jesús Martín-Barbero observed in the 1980s.

Transdisciplinary and multi-methodological in character (they combine ethnographies, semiotic analyses, content and textual analyses…), reception studies arose in the shadow of the mass media, such as the radio and television. Two aspects of the theses advanced by these studies should be revised with respect to Internet: firstly, the idea concerning the irreducible distance (spatial-temporal and political) between the instances of production and consumption. This has now been put into question by the possibilities for self-publication, collaborative writing and open source journalism fostered on the telematic networks, thanks to the instantaneity, accessibility and velocity of publication on the Web. Secondly, the idea of a massive public explains theoretical and political questions linked to mass democracy and the generalist mass media. Not even the segmentation and fragmentation of publics, brought about by the proliferation of television channels, put into question so forcefully the classical idea of the public as Internet is now doing. The relation between receivers and medium seems to be in the process of becoming personalised: one now speaks of “person-computer” interaction and no longer of media-public interaction.

6
Research Methods in Participatory Journalism

1. STATE OF THE QUESTION

The United States is the country where the greatest volume of studies has been developed on participatory journalism, also known as citizen journalism, 3.0 journalism and open code journalism. The *We Media* report, drawn up by Shayne Bowman and Chris Willis (2003), has become established as an international referent on this subject. Similarly, this form of journalistic practice, which includes participation by the public, is attracting the attention of different researchers from around the world, including Mark Deuze *et al.*(2006), Axel Bruns (2005) and Stephen D. Reese, Lou Rutigliano, Kideuk Hyun and Jaekwan Jeong (2007).

In the opinion of the physicist David Bohm (cited in Duarte, 2003), the broadening of concepts is beneficial when it overcomes the abusive use of certain terms, making it possible to rethink meanings and permitting new theoretical and methodological perspectives to emerge. However, generalisations compromise a scientific study, above all when we observe that the actions of each current in order to achieve the same end the public's participation - are intermixed with different communication policies, to cite just one example. Some studies are concerned with the generalisations of those currents (Mielniczuk, 2007), while others try to describe characteristics that surpass the tenuous frontier of each current (Santos, 2007).

It is not our intention here to systematise concepts, but rather to show their importance in the theoretical-methodological development of a research survey. In that respect, recovering the public's participation over the course of the history of the mass media is becoming a recurrent methodology in national and foreign studies. While researchers carry out historical analyses of such participation, demonstrating that the concern to give voice to the citizen is not something new, value is attached in the research surveys to the observation of communicative relations.

Empirical research in citizen journalism is still at an early stage and the methodological approaches vary greatly, seeking the most suitable perspective for dealing with the phenomenon. These perspectives include: structural analysis of the opportunities for participation offered by the websites of conventional media; content analysis of the "journalistic" material produced by citizens; and interviews with journalists, promoters of citizens' media and citizens themselves in order to understand their attitudes and motivations.

From the conceptual point of view, a specific terminology has also emerged, which has favoured semantic approaches and reflection on the indiscriminate creation of new words (Scolari and Pardo, 2006).

Citizen journalism includes any form of participation by the audience linked to current news (Hermida and Thurman, 2007). Many of the innovations in this area do not proceed directly from journalism, but from Web 2.0 services (Cobo and Pardo, 2007), such as Wikipedia, YouTube, Flickr, etc. As objects of study, blogs and their relation to journalism have attracted the greater part of scientific work in this field, although more recently attention has shifted towards other participatory tools.

The Dutch researcher Mark Deuze (2003, 2005, 2006) has produced different works on participatory journalism. One of his main concerns is precisely to try and understand the communicative relations established between citizens, journalists and media. Deuze (2006) analyses participation as one of the essential elements of digital culture. In this author's opinion, that digital culture is formed by *online* and *off-line* phenomena. Consequently, the evolution of the public's participation in the media is accompanied by a review of the classical and contemporary theoreticians of communication and related areas. That procedure makes possible the creation of a model for case studies of *online* journalism, open publications and blogs. Those cases are interspersed with the description of objects and realities, and with a review and critique of the literature, together with the proposal of concepts. In a joint research work, Mark Deuze, Axel Bruns and Christoph Neuberger (2007), also adopt the case study to verify how the journalist is preparing himself for an age of participatory news, when journalists and public work in a joint way. The practice of participatory journalism analysed is from Holland, Germany, Australia and the United States. Amongst the principal aspects investigated are the degree of participation by the user, the role of professional journalists, the motivation of administrators and participants, conflicts between publishers and users, and perception of the success and failure of the projects (Deuze, Bruns and Neuberger, 2007).

The contribution of researcher Axel Bruns (2003, 2004) to research in participatory journalism can also be seen in a series of articles with an exploratory character that resulted in the book *Gatewatching. Collaborative online news production* (2005). This is a work of analysis and conceptual construction based on case studies, such as Slashdot, Indymedia, Wikipedia, Media Channel, Plastic and Kuro5hin. By means of this methodology, his studies seek to determine the degree of openness of each website to participation by the public in three phases of news production: collection, publication and commentary.

With respect to methodologies of content analysis, it is also worth drawing attention to the recent work (2007) of Reese, Rutigliano, Hyun and

Jeong, of the University of Texas (Austin). Their research is based on an analysis of articles in six of the most important political news blogs in the United States, based on Technorati classification patterns. The research concentrates on four basic questions: a) To what extent do blogs link up with the professional media and what type of links are involved?; b) How is the political affiliation of blogs related to their links with the professional media?; c) How is the political affiliation of blogs related to their choice of links?; and d) How is the political affiliation of blogs related to their links with foreign authors and media?

The blog phenomenon is being monitored and characterised by Brazilian researchers from different perspectives. Blogs are seen as personal journals on the net (Carvalho, 2001; Sibilia , 2003 and Schittine, 2004), as a place for conversation by virtual communities (Recuero, 2003, Primo and Samaniotto, 2005), as a system of communication that is transforming journalism (Recuero 2003 b; Silva, 2003; Cuadros et al. 2005; Cuadros and Sponholz, 2006), as a space of authorship and identity on the web (Adghirni, 2006), as a medium that is acquiring characteristics of tabloid journalism (Amaral and Cuadros, 2006), as an opportunity for online socialisation by people with special needs (Passerino and Montardo, 2007), as a medium with dialogic and democratic potential (Aldé et. al, 2007), as a direct heir of webjournalism (Escobar, 2007), as a journalistic form that is starting to gain credibility (Christofoletti and Laux, 2006 and Christofoletti, 2007), as a force capable of determining the activity of the traditional culture industries (Bolaño and Brittos, 2007) and as a broadening of the field of journalism (Palacios, 2007).

2. METHODOLOGY OF WEBLOG ANALYSIS

Studies of weblogs are centred on three aspects: the profile of bloggers, the relation between blogs and journalism, and journalists as bloggers.

2.1. Profile of Bloggers

In Spain the development of the first research dealing with blogs and the blogosphere started early. The profile of the blogger, in this first stage of expansion, was that of a user with an advanced understanding of Internet. Interest gradually increased in giving a more concrete form to the profile of the creator and/or reader of blogs, which resulted in the first studies. The I Survey of bloggers and weblog readers was outstanding in this respect. It made use of a questionnaire designed by Gemma Ferreres (2004), based on an online formula – employing a methodology similar to that employed by the AIMC in its survey of Internet users.

The experience was repeated in successive years, although from being an open survey it became a closed model. There were those who, just like Ferreres, defended the value of online methodology as an especially appropriate method for analysing the processes of change and evolution of the blogosphere (Garrido, 2006). There were also those, such as Pedro García-Alonso (2006), who set out an analytical outline of the new phenomenon of blogs from a university perspective.

Now, as José Luís Orihuela (2005) reminds us, the most documented and relevant academic studies on the situation of the Spanish blogosphere have been the collective works *Do We Live in a Small World? Measuring the Spanish-speaking Blogosphere* (Tricas et al., 2003) and *Revisting the Spanish Blogosphere* (Merelo et al., 2004).

Studies on the profile of the creators and/or readers of blogs have also been carried out in other countries, such as the United States. The Pew Internet Center has promoted some of the best known of these studies, based on surveys, and Technorati makes available four-monthly reports that reflect the state of the blogosphere based on the data of its weblog search-engine. The latter case involves a quantitative vision that makes a census of blogs, establishes the seasonal character of the creations, the volume of daily entries and the predominant languages, making it possible to trace tendencies and observe their evolution over time.

2.2. Blogs and Journalism

Public access to a global medium without publishers and the resulting popularisation of the blogs have meant that one of the central debates has been about the relation between weblogs and journalism. The evolution of the panorama of blogs in Spain between the two studies cited above reveals, amongst other tendencies, that they have become a subject of research in the field of communication and that they figure in many of the academic conferences of this sector. This must have been the understanding of the *Grupo de Estudios Avanzados de Comunicación* [Advanced Communications Study Group – GEAC], of the Rey Juan Carlos University, which considered this field of research to be of paramount importance (García de Madariaga, 2006; Martínez-Nicolás *et al.*, 2005).

Apart from the previously cited studies, several research surveys have provided a foundation for a better understanding of new media practices involving innovative tools such as the blogs, as well as emergent emitters, which are disrupting the way the mass media had been legitimised for a long time.

Thus, Guillermina Franco, David García and Fausto Sainz (2006), of Carlos III University, researched blogs as part of the added value services on a digital medium like *20minutos.es*. For their part, García Orosa and Capón (2004) made a comparative study of the news agenda in the traditional press and in the blogs. Others, like María Sánchez (2006), setting out from a broader research project, have sketched a mainly qualitative description of the presence of confidential reports in blog format on the Spanish Web. At the international level, the numerous works on the relation between weblogs and journalism have normally taken recourse to interviews with bloggers (Matheson, 2004a, b; Lowrey, 2006) and to content analysis (Wall, 2005).

Although a large part of the academic staff in Communication Faculties are still unfamiliar with weblogs, experiences of using blogs as a tool for research and teaching are beginning to appear (Orihuela y Santos, 2004), and some research has been done making use of a questionnaire on the degree of knowledge and use made of blogs by the academic staff of Journalism Faculties (Meso, 2007). The study carried out by Donaciano Bartolomé Crespo (2006) is very similar to this; he structured a questionnaire by adaptating the one used by Aliaga Abad (2004) concerning the degree of understanding and the use made of techniques and tools by university students in Information Sciences.

From the formal point of view, the structure of blogs is very similar, as they normally respect the template provided by the web where they are housed (Bloggers, Periodista Digital, Blogia, Blogspot…) or they make minimal modifications, which is why graphic creativity is almost nonexistent, with the result that their visual elements attract little research interest.

However, weblogs, understood as a specific type of web page, do require for example a concrete analysis of usability (Nielsen, 2005). This determines the presence of necessary elements, such as photography and an author's biography or profile, the distribution of entries by categories, a commitment to regular updating of the content, its own domain name, scannability of the text, and the application of descriptive headings, hypertexts that clearly indicate destination, internal lists selecting the best entries and internal links aimed at providing context.

The first research on the question in Brazil dates from 2003. In this period, Raquel Recuero proposed in her articles a classification for analysing the different types of blog. Jan Alyne Silva Barbosa (2003) sought to systematise the constitutive elements of a blog (tools and pages) that form mechanisms of interaction between bloggers and users. To observe the symbiotic relationship between journalism and blogs (Hiller, 2002), Barbosa carried out a survey of bloggers to map some of the technical and social uses and appropriations of the tools and web pages. Paulo Munhoz (2005), through an exploratory cartographic study, had already sought to characterise new forms of structuring the photographic message and models of image production and circulation in blogs and in open publishing systems.

Artur Vasconcellos Araújo (2005) made a case study of blogs in order to verify the uses that two media organisations made of this communication system. To this end, he identified an d analysed quantitative aspects (volume of material produced, through an analysis of the archives, frequency or rhythm of production of material, size of the news story and nature of the issues dealt with) and qualitative aspects (seeking to apply concepts derived from enunciation theory to an analysis of the published texts). Other research has also dealt with the influence of the blogosphere on the traditional media. For example, Cuadros and Sponholz (2006) made a comparative study of the use of journalistic blogs in the principal media of Brazil and Germany. Bolaño and Brittos (2007) perceived that certain blogs, journalistic ones above all, "have an influence on the agenda of the hegemonic media". Josiany Fiedler Vieira (2007) registered the evolution of blogs employing the concept of remediation (Bolter and Grusin, 1999). In her case study of the blog of the Brazilian journalist Ricardo Noblat, she made a content analysis of *posts*, showing the communicational interaction between blogger and reader, the opinion of the author and the multimedia resources employed. The study was supplemented with in-depth interviews with Ricardo Noblat and other bloggers.

Earlier studies had already dedicated space to Noblat, considered the first Brazilian journalist to create a political blog. Inara Souza da Silva (2006) verified that blogs were a source of information for journalists, using different methods of research: case study, systematic observation, in-depth interviews and content analysis of Noblat's blog.

As the interest of the conventional media in this system of communication increases, there is a growth in the number of Brazilian researchers interested in investigating aspects concerning the credibility of blogs. Rogério Christofoletti and Ana Paula Laux (2006), basing themselves on field studies made in different countries, present blogs as a prestige system and, using case studies, they analyse the communicational relation between bloggers and readers.

When considering the diversity of the blogosphere, which permits numerous classifications that can range from personal diaries to news media, many related surveys and articles seek to categorise blogs in order to understand the phenomenon from different perspectives. In creating a typology the researcher is certainly running risks, as Abraham Moles (1995) point out. The risk of reducing reality to a few elements, the risk of separating the groups and determining each one's centre of gravity, the risk of excluding certain different groups, albeit provisionally. Hence the researcher should present a set of coordinates when attempting to describe the most typical characteristics of each group.

For example, Raquel Recuero rethought the typology of blogs she had created in an earlier study on social interactions (2003a) in order to analyse the journalism on the warblogs of the Iraq war (2003b). Her typology contributed to the development of a great deal of research and inspired other classification proposals, such as that presented in "*Blogs y las Transformaciones del Periodismo* [Blogs and the Transformation of Journalism]" (Cuadros *et al.*, 2005).

Palacios (2007) set out from the ideas suggested by Sorrentino (2006), seeking to deepen and apply them to Brazilian cases. Applying the notion of field, developed by the French sociologist Bourdieu, Palacios sought to identify the effects in the journalistic field produced by the heterodoxy of the emergence of blogs: Subversion of the place of emission ("Liberation of the emitting pole"); Doubts on the physiognomy of the field (Who is the journalist?); Tensions concerning the criteria of newsworthiness (What is news?); Vigilance of the traditional media; Widening the debate (public sphere); Blogs as promotion of so-called Public Journalism (participation, grassroots journalism); Creation of a movement reaching beyond the traditional audience and formation of networks of participation.

2.3. The Journalist-Blogger

Ease of use has permitted an indiscriminate creation of blogs in all sectors, with the journalists guild being one of the most active and committed to regular updating. The survey is the most widespread resource for rapidly obtaining information on the maintenance of the weblog and the author's profile. After searching the Web and locating the blogs that are the object of study, a universe is built to which is the survey is then sent by electronic mail in *.doc format, or a link to an online questionnaire is provided. Companies like 2ask, QuestionPro, e-encuesta or Netquest facilitate the design of these questionnaires and provide the results automatically, which expedites the phase of gathering and analysing data. In this concrete case, different studies centred on the figure of the news professional (Palomo, 2007) have employed this method, as it is considered to be the most suitable for tracing the profile of the blogosphere elaborated by journalists.

Besides the survey, the interview with experts is another method for directly determining how citizen journalism is influencing journalistic routines, since in this way professionals can confirm the use of tools like Flickr or Buzznet. Authors like Jane Singer (2005) opted for content analysis in order to compare the style and values of journalist-bloggers with "standard" news.

3. CITIZEN JOURNALISM WITHIN AND OUTSIDE THE PROFESSIONAL MEDIA

The first research on the evolution of citizen journalism was centred on the attitudes of the digital journalists of those media that encouraged audience participation in news production (Schaffer, 2007; Paulussen et al., 2007). Chung (2007), as well as Hermida and Thurman (2007), opted for in-depth interviews as the principal method for understanding those attitudes, which were mainly reticent and skeptical. For their part, Domingo et al. (2007) favoured a structural analysis of the opportunities for participation on the websites of newspapers from nine countries. In the United States, the Bivings Group employed the content analysis file of the websites of the hundred most widely distributed North American newspapers to determine the degree of implantation of Web 2.0 tools in this sector, and to show the interest existing in increasing interaction with the audience and providing the latter with a greater role.

The newness of the concept of "participatory journalism" is an invitation for the constant discovery of new research possibilities in the subject. There are new approaches proceeding from the field of design and others that use the open system itself as a new tool to be applied in the research. For example, early in 2007 a worldwide survey was promoted from the newspaper *OhMyNews* to analyse other similar initiatives of citizen journalism. Descriptive methods are also applied from blogs like *The Social Web* in order to analyse all the novelties related to citizen journalism, while publications specialising in the media sector, like *Online Journalism Review*, have developed specific sections.

While there is a preponderance in the blog of the individual imprint of the blogger, the main characteristic in the other forms of participatory journalism is collaboration amongst those involved. In the research undertaken, we can also observe the attention paid to the international and communicational relations provided by those forms, which incorporate tools and methods dedicated to perfecting the information published through collaboration amongst the participants.

Different Brazilian studies explore the potential of the production model known as *open source*, whether in articles and monographs (Schwingel, 2004; Silva jr. , 2004; Antoun, 2004; Holanda, 2004; Cuadros, 2005; Brambilla 2005, Breier, 2004; Evangelista, 2006; Primo and Träsel, 2006; Antoun and Pecini, 2007; Beltrão, 2007; Fonseca and Lindemann, 2007) or in dissertations (Rigitano, 2004; Munhoz, 2005; Brambilla 2006¸Holanda, 2007, Träsel, 2007). There is verification that *open source journalism* is gaining ground as a basic concept for understanding the phenomenon (Breier, 2004; Cuadros, 2005; Brambilla, 2005 and 2006). One should note the lack of a specific proposal for "wiki journalism", in spite of the fact that this model of publication has significant specificities. In the opinion of Brambilla (2006), Wikinews does not form part of open source journalism, since, according to this author, due to the lack of publishing authority the news never surpasses the beta version. For the opposite reason, that is to say, the upholding of the authority of an editor on *OhMyNews*, Holanda (2007) does not consider this to be an open source form, while accepting the wiki model as an extreme, but nonetheless valid, case.

Bambrilla (2006) centres his attention on the role of the journalist facing this new participatory public. This researcher takes recourse to the bibliographical search, to participatory observation and to interviews with citizen-journalists of different countries chosen at random, with researchers in this field and with members of the newsrooms of the Korean newspaper. Rather than interest himself in content analysis, Brambilla concentrates on the interaction between journalists and public and its rules. To this end, he made a description of the structure of the website and of the procedures involved in the interaction of the user with the website.

André Holanda (2007) observes the relation of open source journalism with the public through case studies: *Indymedia, CMI, Slashdot, AgoraVox, Wikinotícias* and *Wikinews*. Marcelo Träsel (2007) uses content analysis when seeking to establish the degree to which the contributions and interventions of the public broaden the journalistic aspects of the articles published in Wikinews and Kuro5hin, creating a journalism with truly multiple perspectives (Bruns, 2005).

7
Production Routines

1. THE STATE OF THE QUESTION

This chapter provides an approach to the reality of online journalists and offers an introduction to the methods and techniques most used in the study of the profession (sociological profile, working and professional conditions, etc.) as well as to the work routines. As we shall see, there are methodological tools for this purpose that have been put into practice in recent years in Spain and Brazil in studies analysing the professionals of online journalism from different points of view.

Following some initial works of synthesis that attempted to depict the general panorama surrounding online journalism, a broad range of studies soon emerged that dealt with the study of digital journalism from more specific perspectives: design, digital narrative, information architecture, etc. In a more limited form, different contributions have recently appeared that concentrate on analysing the incidence of Internet in the professional practice of journalism, or the expectations that the new medium has raised amongst professionals.

In Spain, the first research studies dealing with the use of Internet amongst journalists were works that had a broad character, normally centred on studying the working conditions of the professionals. This research approached the subject from a distance, barely touching on the concrete question of the impact of Internet on professional practices. Worthy of mention in this respect is the series of surveys that the College of Journalists of Catalonia has been carrying out since 1992, in order to analyse the profile of the professionals working in Catalan news production (Col·legi de Periodistes de Catalunya; 2000), to which must be added the recent works forming part of the preparations for the *Libro blanco de la profesión periodística en Catalunya* [White Book of the Journalistic Profession in Catalonia] (Soriano; 2004, Soler; 2004). Similar approaches have been undertaken in the Basque Country (Cantalapiedra, Coca, Bezunartea; 2000), while in Galicia there is the work of the *Grupo Novos Medios* [New Media Group] (Ponencia de Comunicación, 2000; Colexio Profesional de Xornalistas de Galicia, 2002).

The first notable contribution on the working conditions of digital journalists proceeded from the *Grup de Periodistes Digitals* [Digital Journalists Group – GPD]. One of their reports on the labour and professional situation of the digital journalist in Catalonia (Grup de Periodistes Digitals, 2003) set out the principal problems affecting journal ists on Internet and defined the profile of the digital journalist. A similar project was set underway in 2000 by the *Consello da Cultura Galega* [Galician Cultural Council]. This re - sulted in the publication of the conclusions of research conducted in 2002 on the professional attitudes and working conditions of the first online journalists working in the Galician media. This study attempted to describe not only the objective characteristics of the work of the new communicators, but also their expectations and thoughts on the new medium (Colexio Profe - sional de Xornalistas de Galicia, 2002; García, Túñez and López, 2005).

The most recent contributions to the study of the working and professional conditions of digital journalists mainly proceed from the Basque Country. These include the project directed by Meso on "Professional Atti - tudes and Labour Situation of the Digital Journalist in the Basque Country" and the research developed by José Larrañaga (2007) on the working and professional conditions of the jo urnalists of Basque digital editions. Mention should also be made of the contribution from the lecturers at the Rey Juan Carlos I University José Mª García de Madariaga and Fernando Tucho (2007).

It can be seen that research in the working situation and pr ofessional attitudes of online journalists is still scarce, although interest in this question is increasing. Even more limited, however, is research in the new professional profiles resulting from digitalisation and media convergence, and in the professio nal routines of the digital journalist. Micó (2006) and the *Grup de Recerca d'Interaccions Digitals* (Research Group in Digital Inter-action - GRID) of the University of Vic (2006) have undertaken the study of the new professional profiles. Amongst their co nclusions, the authors ob-serve that numerous professional figures have experienced changes in the skills that were traditionally required for their work. In general, these trans - formations are of two types: technological and functional.

A significant body of research is centred on analysing the impact of Internet on the journalistic production of the traditional media. Setting out from concepts like *Computer Assisted Reporting* (CAR), some researchers approach the study of Internet as a medium of interactio n with the sources of information. In this respect, the book *O ciberespaço como fonte para os jornalistas* [Cyberspace as a Source for Journalists] (Machado, 2003), un-dertakes a detailed analysis of the perspectives opened up by the digital net - works in news production.

Other relevant studies include those, also carried out in Brazil, by Nélia Del Bianco (2004) on the impact of Internet on the radios of São Paulo – Jovem Pan AM and Bandeirantes AM. According to this author, Internet is integrated into every phase of journalistic production. The Web enables professionals to choose from amongst hundreds of newsworthy events.

Masip (2003, 2005) and Soriano (2005) have also worked on analysing the new routines and functions resulting from the irruption of Internet in the newsrooms. Masip, making use of qualitative and quantitative methodologies, analyses how Internet has affected the professional practice of Catalan journalists. His analysis confirms that there is an unquestionable presence of Internet in the media newsrooms and that its use is fully integrated into daily routines, although these routines have not been substantially altered. Internet still plays a secondary role in the newsrooms of the traditional media.

The way in which Internet is involved in the process of accelerating the cycle of news production in the traditional media has also been the object of some research surveys. In a pioneering work, Brandão (1999) shows how the introduction of the concept of the "information turbine" in the 1980s altered the concept of news, now subjected to production in a state of continuous flux. The search for production in "real time" made it necessary to perfect the routines of journalists, routines that are now used on the Internet. Bianco (2004) shows that, following the irruption of Internet, the capacity for emitting a news item rapidly became a criterion of newsworthiness on the radio, resulting in a greater shortening of the news cycle.

With the turn of the century, the first works began to appear that specifically analysed the process of production in the newsrooms of digital media. Based on the sociology of journalism, these works sought to understand how the communicational characteristics of Internet – interactivity, hypertextuality, multimedia, instantaneity and memory – were incorporated into the daily activity of newsrooms (Palacios *et al.*, 2001).

The first works were produced by Zélia Adghimi (2001; 2002; 2004), who painted a pessimistic panorama for the professionals who ventured into the recently created market of digital journalism: routines marked by precarious working conditions and by the impositions of production dictated by the parameters of "real time".

Following Adghimi's contributions, Fábio Pereira (2004) analysed the production routines of the regional publication *Correioweb*, whose small newsroom was obliged to fall back on the transposition, with or without adaptation, of news material produced by others (news agencies, press offices, etc.). In order to analyse the division of labour in newsrooms, Pereira had recourse to the notions of "seated journalist" and "standing journalist" (Neveu, 2001), with the former responding best to the requirements of producing the greatest number of news items at the lowest cost. Barbosa (2003) reached a similar conclusion in her study of the regional portals UAI and iBAHIA, which relied on work routines based on recycling.

Finally, in her doctoral thesis, Thaïs de Mendonça Jorge (2007) analysed the news narrative of the portal Universo online (UOL) and the Argentinean newspaper Clarin.com. According to this author, the work of searching for, selecting and checking sources resulted in the routine standardisation of journalistic writing.

In Spain, the most significant contribution came from David Domingo. Domingo (2006) analyses the model of digital journalism developed in media from different traditions: a printed medium, a public audiovisual medium, a local newspaper and a portal of pure digital news. García Avilés (2006) also contributes to the analysis of polyvalent and convergent journalism.

2. METHODOLOGICAL PROPOSALS FOR THE STUDY OF THE PROFESSION AND PRODUCTION ROUTINES IN ONLINE JOURNALISM

During the first years of the irruption of Internet, different works appeared that studied the changes occurring in the journalistic profession as a result of technological innovations, especially Internet. These works arose from reflection, debate and theoretical consideration and were often more concerned with the description of desires rather than realities.

Following this first phase, a significant number of works emerged, from the year 2000 onwards, that approached the object of study from an empirical perspective. With some relevant exceptions, these first works chiefly made use of quantitative methodologies. In that period there was a predominance of works on the professional profiles and working conditions of the journalists.

At present, on the contrary, the dominant tendency is to combine quantitative and qualitative methods, with a clear preference for the use of qualitative techniques as a necessary complement for obtaining a valid approach to the phenomenon of digital convergence in the newsrooms and its effect on professionals (Cabrera *et al.*, 2007).

2.1. Quantitative Methods

In general, studies of an essentially quantitative type make use of the survey as their principal technique. This was the methodology employed in a large number of the works mentioned above in the second and third epigraphs of this chapter on the working conditions of journalists, including online journalists.

The survey, a technique especially employed in sociological research, does not apparently present any complications: putting questions to a number of individuals and subsequently collecting their answers. However, its application is not free of complexity. Monzón Arribas (1987) defines surveys as a procedure for gathering information from a group of subjects (sample) who are representative of a wider group of people (universe) within controlled margins of error (probability). Wimmer and Dominick (1996) emphasise that surveys make it possible to obtain a large quantity of information at a reasonable cost. It is not however free of problems (see the chapter on methodology for research in media convergence in this volume).

The basic tool in surveys is the questionnaire: the repertory of questions that are put to the individuals who make up the sample analysed. In the process of designing and setting out the questionnaire it is essential to proceed with the greatest rigour, in order to obtain a questionnaire that will gather all of the information required by the researcher. And, even more important, it must be interpreted in the same way by all of those subjected to the survey. For this purpose a pre-test must be carried out, that is, a pilot test making it possible to verify the correct elaboration of the questionnaire.

To obtain the highest possible response rate it is important to take certain decisions that affect the design of the questionnaires. In spite of Wimmer and Dominick's consideration that the maximum answer time for a survey should be 60 minutes, the elaboration of briefer questionnaires is recommendable, answering which should involve periods of time no longer than 15 or 20 minutes.

The questions in the questionnaire can be open or closed. Closed questions are more difficult to formulate but they make greater uniformity in the answers possible, which facilitates subsequent statistical treatment of the results. Open-ended questions, on the other hand, provide a greater wealth of information in their answers, but involve greater difficulties of interpretation and tabulation. In drawing up the questions, it is recommendable that a simple language be used that offers no possibility for misunderstanding, that the questions should be as specific as possible to avoid generalisation, and that their formulation should not be especially long or complex.

Another important decision to be taken by the researcher concerns the method of distributing the surveys, given that the characteristics of the questionnaire will differ depending on the method selected. Thus, for example, in a survey carried out by telephone it is not recommendable that the majority of questions be open-ended ones.

Finally, selection of the sample and ensuring it has a representative character are also of vital importance. A significant question that might be faced by the researcher concerned with studying the professionals of journalism is determining the population under study. This problem derives from the difficulty in arriving at the total number of professionals in each country. In some places, the lack of a census is compensated by the existence of professional colleges or associations that, while not exhaustive, are sufficiently representative of the profession as a whole. This was the resource employed by the *Grup de Periodistes Digitals* [Digital Journalists' Group] and the *Sindicat de Periodistes de Catalunya* [Journalists' Trade Union of Catalonia] to obtain a sample for their study of the working conditions of digital journalists (Grup de Periodistes Digitals, 2003).

When this resource cannot be applied, the general tendency is to direct the surveys to the editors-in-chief of the newsrooms, on the assumption that their viewpoints will be representative of their team as a whole. This has been done by Bella Palomo in Spain (Palomo, 2002); and at the international level by Harper (1996), Jackson and Paul (1998), Neuberger *et al.* (1998), Peng *et al*. (1999) or Singer *et al.* (1999), amongst others. In some cases, the option chosen was to consider all of the digital journalists as the universe of the survey (Brill, 2001; Deuze and Dimoudi, 2002; Quandt *et al.*, 2003, Paulussen, 2004).

On other occasions, the option chosen is to try and achieve the maximum number of answers possible in a given number of companies, without attempting to be exhaustive in the difficult task of locating all the existing digital publications. Schultz, for example, chose to survey only those digital journalists working for the *New York Times*, basing his results on 19 responses. Luzón developed the same solution in her study of Internet use in the newsroom of *Televisió de Catalunya* [Television of Catalonia], although, in her case, the surveys were complemented by an intensive ethnographic field study (Luzón, 2001).

A suitable choice of sampling unit is also essential, which, depending on the aims pursued, will usually be editors, section editors and/or reporters. An inappropriate choice of sampling unit can lead to results whose validity is questionable, or whose generalisation is problematic at the very least. This can happen in studies, such as those mentioned above, where the questionnaires are distributed to those in charge of the digital newsrooms. They are invited to respond to the questionnaires according to their own perceptions, which, depending on the context, might not coincide with those of their employees. Besides, a large number of conditioning factors intervene in the adoption of any innovation, amongst which the particularities of the organisation play an important role, although individual characteristics have proved to be decisive. These characteristics become blurred if the answers proceed from the perceptions of third parties.

As mentioned previously, surveys have been especially used for studying the journalistic profession: sociological profile, working and professional conditions, expectations, hopes, etc. Nonetheless, a growing tendency can be observed in recent research of combining this technique with others of a clearly qualitative type, particularly interviews. The reason for this must be sought in one of the main limitations of surveys: they simply depict the opinions of the journalists and their own perception of what they do, but not their real routines, nor the context or the factors that influence their work.

This is the line followed in Galicia by the *Novos Medios* [New Media] group, whose principal researcher is Miguel Túñez. The results of their studies are contained in several books (we will mention two: *Xornalismo en internet. Actitudes profesionais e condicións laboais dos periodistas en liña* [Journalism on Internet. Professional Attitudes and Working Conditions of Online Journalists] (Consello da Cultura Galega, 2002), and *Informe sobre a situación laboral dos xornalistas galegos* [Report on the Working Conditions of Galician Journalists] (Colexio Profesional de Xornalistas de Galicia, 2002). More recently, the *Col·legi de Periodistes de Catalunya* has published the *Llibre blanc de la professió periodística a Catalunya* [White Book of the Journalistic Profession in Catalonia], a work that aims to depict the reality of journalism and the mass media in Catalonia. This white book is the result of two research projects, one with a quantitative character, based on a sample of 420 personal surveys, and another qualitative one, based on 30 in-depth interviews (Soriano, 2004; Soler, 2004). Finally, the double methodology was also employed in the study developed by García de Madariaga and Tuño (2007) on the social and working profile of Spanish digital journalists. In this case, 23 semi-structured interviews were initially held with editors, sub-editors and section editors of some of the most important digital publications of the country, and, subsequently, a questionnaire was drawn up and distributed amongst editors of cybermedia. At the international level, we also find cases where surveys and interviews are combined in order to triangulate results (Singer, 1997; Brill, 2001; Quinn and Trench, 2002). In-depth interviews (Riley *et al.*, 1998; Heinonen, 1999; O'Sullivan, 2005; Chung, 2007; Hermida and Thurman, 2007) offer a deeper perspective, one that is often more critical of the development of digital journalism than is usually reflected in surveys.

2.2. Qualitative Methodology

A qualitative methodology is used in the majority of studies on journalistic routines and professional profiles. Ethnographic work is what enables researchers to directly observe the productive process and the attitudes of journalists in their context. According to Traquina (2003), ethnography makes it possible to see "the trans-organisational dimension in the news production process" and "all the informal networking amongst the journalists".

In general, a tendency can be observed to use the procedures of triangulation, that is, the simultaneous employment of different data gathering techniques. The case study in particular acquires special relevance as a method making possible a better approach to the study of journalistic practices. Ethnographic study plays a determinant role in any case study, which, in its turn, must be accompanied by the realisation of interviews in context and the analysis of documents linked to the unit of observation. Once observation of the newsrooms for a sufficiently extensive period of time has finished, the opinions gathered in the interviews can be completed through the distribution of a closed questionnaire amongst the professionals. We will now briefly explain each of the recommended methods and steps that make up our final methodology, which we can consider a mixed methodology.

The case study method refers to "an empirical work that investigates a contemporary phenomenon in its real life context" (Yin, 2003:13), which is why it is considered a highly useful tool for the analysis of more complex social phenomena. Although generalisation from its results is difficult, the case study makes it possible to obtain knowledge of a concrete reality and its context, based, for example, on a detailed analysis of human conduct, together with other sources of evidence used in empirical enquiry. Similarly, it offers the possibility of obtaining unexpected results with a greater frequency than with other techniques. It is therefore an essentially qualitative method, which is centred on the parameters of a specific case, instead of establishing generalisations that encompass broader fields. Amongst the numerous qualitative sources on which the case study method is based, the following should be stressed: direct observation, interviews, reports, work documents, archive data and analysis of samples, as evidence to corroborate results.

The efficacy of this methodology has been amply demonstrated in recent approaches to the study of digitalisation and its implications for the journalistic profession. In Spain, García Avilés *et al*. (2004) and Micó (2006) have applied it in the study of Spanish television newsrooms; Masip in the newsrooms of *La Vanguardia*, *Catalunya Ràdio* and TV3 (2005), Domingo (2006) in the newsrooms of four Catalan digital media and Larrañaga (2007) in his study of the convergence process set underway by the Basque group *Goiena*.

Without any doubt, field observation plays a fundamental role in any approach to understanding production routines. Mauro Wolf (1991) underlines the importance of participant observation in studies of newsmaking, given that it makes possible the systematic collection of essential information and data on the production routines operational in journalistic companies. Similarly, information gathered through field observation enables comparison to be made between different units of observation, allowing identification of possible similarities and differences.

The definition of field observation we adopt is that of Becker and Geer (1957), taken up by Jankowski and Wester (1993), who consider it to be a technique by which the observer participates, for a limited period of time, in the everyday life of the people who are the object of study, observing the things that happen, listening to what is said and asking questions. Field observation includes observation as such, interviews and the analysis of documents.

Frequently, gaining access to newsrooms, which permits observation of the everyday work of journalists, is one of the main problems faced by the researcher. Mauro Wolf recalls that "the question of obtaining prolonged access to the newsrooms is obviously essential in this type of study" (Wolf, 1991:213). Observation of newsrooms should be carried out for a period of time that is long enough for changes that might occur to be registered with sufficient perspective. Domingo (2005) suggests that if what is sought is comparison of different realities, the same temporal period should be chosen in each case study, with intervals over the period. Similarly, it is helpful if the observer is already familiar with the work done in the newsroom, either because he has performed such work professionally or because he has previously carried out similar studies in newsrooms.

During the period in the newsrooms there must be continuous observation of how the journalists carry out their tasks. A position of distance is recommended, maintaining the necessary "analytical distance", without establishing excessive rapport with the journalists who are the object of study. They should not be interrupted while carrying out their work, except when it is necessary to obtain precise clarification on the activity they are realising.

Registration of the information observed by the researcher is crucial in this type of work. Such registration can be done by means of codification on a file, for example, or without any type of previous codification. In this case, it is advisable for the researcher to make systematic annotations on what he sees that will contribute to describing the situation and its characteristics. Such annotations can take the form of field notes or an observer's diary, the latter written up afterwards in the form of a retrospective register.

Both in the phase prior to observation, and during the period of observation itself, it is advisable to carry out interviews with the members of the newsroom. When carried out before field observation, interviews in context make it possible to obtain information about the aims and identity of the company, identify the different categories of employee who might be the subject of an interview, draw up the open questionnaire and establish the initial calendar of interviews. For example, in their study on the convergence process in the Tampa News Centre, Dupagne and Garrison (2006) carried out such prior work, which was useful for assessing the dimensions of the subsequent field work.

The interviews enable information to be obtained that it would be difficult to identify through direct observation. They make it possible to capture feelings, opinions, intentions… "Interviews lay bare the everyday life of professionals, they make it possible to accede to discourses full of referents, patterns, stereotypes, tacit knowledge" (Soriano, 2004: 12).

The use of semi-structured interviews is recommendable, as they permit a certain degree of control over the interviewee's answers, while at the same time providing both interviewer and interviewee with a high degree of freedom to hold a relaxed conversation.

There is no definitive criterion on the number of interviews that should be carried out in a practical case of this nature, although, logically, this will depend on the size of the newsrooms involved, on the geographic scope of their audiences (local, regional, national or international) and on the specific characteristics of each medium. The interviewees should be selected according to their functions and their participation in newsroom convergence.

Finally, to refine the results of the research, it is useful to apply a closed questionnaire to the professionals involved in the object of study. There are circumstances which make this advisable, in order to complement the opinions of the interviewees and to obtain more precise evaluations of certain phenomena. In a study of changes in the journalistic practices and the structure of two Spanish television channels, the researchers applied a closed questionnaire containing 20 questions (García Avilés and León, 2002). This technique allowed them to determine with greater precision the journalists' perceptions of the change in production practices and routines, as well as of the use of the new digital technology in news production. The same technique was also used by Virginia Luzón in her study on the impact of Internet on the journalistic routines of the reporters of TV3 (Luzón, 2001).

It is possible to use other methods to complete the research, such as content analysis. This can be used to analyse the frequency of updating of websites or the percentage of material that uses external sources. In the opinion of Jorge (2007), this type of analysis makes it possible to verify the results of the journalistic production process. In Spain, it has been applied by authors like Luzón (2001) and Masip (2005).

According to Ruiz Olabuénaga (1996), the use of a qualitative methodology is not incompatible with the use of a quantitative one, since this helps to complement each technique and minimises possible methodological shortcomings. The researcher interprets the data and the experiences provided by the interviewees in the light of the quantitative empirical results, which without doubt enriches the conclusions and strengthens the soundness of the research.

8
Media Convergence

1. CONCEPTUAL NOTE ON MEDIA CONVERGENCE

Before it became an idea associated with journalism, the concept of convergence was employed in fields as disparate as mathematics, economics or biology (Gordon, 2003). Since the late 1980s, the term "convergence" has been used to refer to a variety of concepts related to the technological transformation of telecommunications; it has had heterogeneous meanings, complementing each other on occasions and elusive on others. This is due to the variety of approaches and perspectives adopted in studies on media convergence: business (Killebrew, 2005; Lawson-Borders, 2006), juridical (Clements, 1998), technological (Forgacs, 2001; Idei, 2002), multiplatform (Theorodopoulou, 2003; Thompson, 1999) and cultural (Jenkins, 2006), all of which highlights the close relationship amongst technologies, industries, markets, genres and audiences.

Certainly, there is no single and unanimously accepted definition of the concept of convergence. In fact, a great part of the research related to this question underlines the difficulty of reaching such a consensus. And this conceptual discrepancy affects both the academic and the professional literature. However, there are differences between the two. The academic literature usually favours systemic definitions of convergence, covering different fields of communication, and the definitions thus tend to be broader and multidimensional. On the other hand, professional definitions are usually more reductionist and are often limited to logistical aspects of the media, particularly the workings of newsrooms and production processes.

This conceptual discrepancy does not, however, usually find a linguistic correlate. Facing the disparity in the definitions, a clear consensus can be appreciated when it comes to designating them as "convergence". Conscious of this terminological problem, some authors propose alternative terms (combined promotion, cooperation, coexistence, coordination, fusion…) as ways of defining specific *forms* of convergence (Dailey *et al.*, 2003). Similarly, what is emphasised is that convergence does not involve a brusque change, but rather a gradual evolution of the coexistence between traditional communication techniques and processes and other innovative ones (Cebrián, 2001).

Hence the concept of "media convergence" refers to a process of integration of traditionally separate modes of communication, affecting companies, technologies, professionals and audiences in all the phases of the production, distribution and consumption of contents of any type. This process has deep implications for company strategies, technological change, the elaboration and distribution of contents on different platforms, the professional profile of journalists and the forms of accessing contents. In this respect, Gracie Lawson-Borders (2006: 4) defines convergence as "an ensemble of concurrent possibilities of cooperation between printed and electronic media in the distribution of multimedia contents through use of the computer and Internet". It follows from her definition that the Internet and computers are the aggregating sources of contents generated by different media and distributed through different platforms.

Technological convergence refers to the capacity of infrastructures to acquire, process, transport and simultaneously present voice, data and video on a single network and an integrated terminal. The new applications and services overlap and come together in the computer, telecommunication and audiovisual sectors. Rich Gordon (2003) considers the stage of technological convergence to be a necessary and obligatory one for the evolution of the convergent processes.

Meanwhile, company convergence makes possible the creation of alliances, temporary unions, fusions, takeovers or new companies. The only restrictions are the guarantee of pluralism and avoidance of the transfer of dominant positions between some sectors and others.

In the professional field, convergence results in different strategies for making the maximum use of news material, which then appears in different media. Such strategies range from forms of cooperation between the newsrooms of different media to the creation of integrated multimedia newsrooms, where all the messages are centralised, assignments are made and the flow of information is channelled to bring out the printed, audiovisual and online versions of the contents. This poses the question of journalists assuming a greater level of polyvalence in order to produce contents for several formats.

Finally, convergence also affects the journalistic product, since it permits modification of both the formal characteristics of the contents, and audience habits in using and interacting with those contents. In the environment of media convergence, communication is characterised by the immediacy, multimediality, interactivity, participation, depth, non-lineal structure and personalisation that it offers to users.

Professional convergence – our main object of analysis – is being implanted in numerous media, whenever the journalist is asked to cover the news story for television, for the radio and to prepare a version for Internet. In the latter field, convergence is conceived as the use of resources on different platforms for joint work and information distribution in a coordinated way.

In order to facilitate conceptual and terminological clarity, we reproduce the definition of "media convergence" proposed by Salaverría, García Avilés and Masip (2007), as a basis for this chapter:

> Media convergence is a multidimensional process that, facilitated by the generalised implantation of digital telecommunications technology, affects the technological, business, professional and publishing area of the mass media. It favours an integration of tools, spaces, working methods and languages that were formerly dispersed, in such a way that journalists produce contents that are distributed through numerous platforms, using the specific languages of each of them.

Convergence affects different areas of the organisation of the mass media. To the degree that convergent processes develop, these areas trigger their own processes of reconfiguration and repositioning in order to adapt to the new reality.

Shown below are the principal areas and the eventual reconfiguration processes:

Area	**Reconfiguration process**
Strategy and global business model	Definition of ontologies for: Product innovation –management and infrastructure -relation with the client Financial aspects
Technological plan	Publishing systems, databases, interfaces and equipment
Organisation and management	Hierarchical reorganisation, physical reform, training
Organisational culture	Climate, management and personnel; educational profiles

Operational processes	Narrative genres and formats of the cyber-medium Non-conventional contents and tools
Market and relation with the user	Social media, microsegments, economy of attention

As we shall see, the increase in research in media convergence in the national and international spheres reveals a growing interest in this object of study, together with the need to design increasingly exhaustive and complete methodologies.

2. INTERNATIONAL STUDIES ON MEDIA CONVERGENCE

At the international level, the first academic reflections on multimedia convergence appeared in the late 1970s. This was when authors like Nicholas Negroponte (1979) began to refer to the nascent phenomenon of digitalisation, and its consequences for the diffusion and combination of textual and audiovisual languages.

Given its novelty, the studies on media convergence included not only works of an empirical character, but also purely theoretical analyses that attempted to demarcate, with unequal results, a valid conceptual framework for defining this relatively new concept. Given that it is methodological aspects, above all, that interest us in this book, we will mainly concentrate on the research models adopted in empirical research. However, it seems justified to make a brief mention of the theoretical proposals that attempt to define the concept of convergence.

As we have noted, the theoretical studies are not exactly characterised by consensus in proposing a definition of that concept. On the contrary, as many as three different and, to a certain point, consecutive schools can be detected:

1) *Convergence as confluence of technologies*. The first definitions of convergence correspond to this school. These identify it as the combination of different linguistic codes as a result of digitalisation (Negroponte, 1979, 1996; De Sola Pool, 1983; Fidler, 1997; Castells, 2001).
2) *Convergence as system*. The studies that have stressed the systemic character of convergence can be classed here. They define it as a complex and multidimensional phenomenon that covers different inter -

connected spheres – technological, business, professional, linguistic… (Flynn, 2000; Singer, 2004; Killebrew, 2003; Klinenberg, 2005; Gordon, 2003; Jenkins, 2001).

3) *Convergence as process*. Accepting the systemic character of media convergence, the authors who adopt this approach draw attention to the fact that for convergence to be suitably studied, it must be conceived as a process subject to gradation (Dailey *et al*., 2003; Lawson-Borders, 2003; Applegreen, 2004).

Based on the conceptual framework provided by these theoretical studies, empirical research in media convergence has also adopted different models, although certain common notes can be detected.

The first similarity concerns the form of convergence studied. The great majority of studies analyse the convergence phenomena occurring in the media newsrooms, or phenomena concerning the professional profile of the journalists who work there. In comparison, other spheres of convergence, such as technological convergence, for example, have received much less attention. On consideration, it is not surprising that this should be the case given that, at the end of the day, research in journalism is included in the field of the social sciences and not in that of the experimental or technical sciences. Therefore it is logical that research should be centred on the more specifically journalistic aspects of this phenomenon.

Facing this relative consensus on the form of convergence studied, greater disparity arises concerning the object of study selected for research. A large part of the research, especially the early studies, tended to analyse the phenomena of convergence in isolated media (Cottle, 1999; Duhe *et al*., 2004; Huang *et al*., 2004; Ketterer *et al*., 2004). However, with the spread of the systemic view of convergence mentioned above, more recent empirical studies have tended to concentrate on the communication groups, rather than taking one of their media as the object of study (Klinenberg, 2005; Boczkowski and Ferris, 2005; Boczkowski, 2004).

Finally, with respect to the research methodologies for analysing convergence in newsrooms, the authors of these studies have basically had recourse to two, frequently complementary, forms: interviews and participant observation.

Interviews, normally semi-structured with some open questions and others closed, seek to obtain a detailed explanation of the modes, consequences and value-judgements concerning convergence, both from managers and, above all, from conventional journalists. On the other hand, participant observation is usually employed by researchers as a mode of directly witnessing the dynamics of professional relations set underway when there is a shift in the models of business organisation (Cottle, 1998).

3. NATIONAL STUDIES ON MEDIA CONVERGENCE

The panoramas of studies on convergence in Spain and Brazil are fairly similar and are marked by a lack of works. In Spain, the approach to the research of newsrooms as such was virtually unexplored until 2005. When, at the start of the XXI century, convergence began to be talked about, everything seemed to indicate that the question was of interest to both communication companies and academics. However, the lack of definition about exactly what was understood by convergence, and how to put it into practice and deal with the problems it implied – technological problems, the training of professionals, the integration of newsrooms that had worked separately for decades – meant that its attraction faded for some years.

In fact, we still lack consolidated studies in this field in Spain. However, the outlook for the coming years gives cause for hope. On the one hand, there are researchers interested in the question who have analysed cases of convergence in newsrooms in other countries (García Avilés, 2002, 2006; García Avilés *et al.*, 2004).

On the other hand, studies have been made that, while not dealing with convergence directly or exclusively, have thrown light on the concept and on the problems involved in its implementation in journalistic routines, as well as on determinant technological and training factors deriving from this. There are numerous contributions in this respect as it has been approached from very different fields (Domingo 2002, 2004, 2005; Salaverría 2003, 2004; Díaz Noci, 2004; López, 2004; Masip, 2002, 2003, 2005; Scolari *et al.*, 2006).

It is also worth drawing attention to the existence of research projects with a regional scope that have dealt with convergence in an indirect way: this is the case of the project funded by the Basque Studies Society analysing the impact of Internet on the mass media in the Basque Country and Navarre (Meso *et al.*, 2005) or the studies developed in Catalonia around the *Institut de la Comunicació* [Institute of Communication] (Corominas, Moragas, Guimerà, 2005; Domingo, 2005). The research group at the University of Santiago has also worked on the question in the area of Galicia (López, Gago y Pereira, 2003 and 2004).

Many of these researchers, coming together around the generic subject of online journalism, developed a line of research, funded by the Ministry of Science and Technology, that analysed "The Impact of Internet on the Mass Media in Spain" between the years 2002 and 2005. A large part of this work is collected in the book *Cibermedios* [Cybermedia], edited by Ramón Salaverría (2005).

Amongst the contributions made by the work of this network, two in particular should be mentioned: the identification of convergence as an independent subject of study, around which many interacting aspects rotate; and the formation of a stable, numerous and representative work team, which includes many of the academics who have worked in recent years on questions related to the press and technology from very different viewpoints. Since the year 2006, this team has enjoyed official support thanks to a new project with public funding: "Digital Convergence in the Mass Media in Spain" (Ministerio de Educación y Ciencia, 2006-2009). The project covers six specific areas where convergence is taking place: technologies, contents, media, professionals, companies and audiences. This project, which is getting underway, brings together twenty researchers who aim to cast light on the concept of convergence, draw up a map of experiences of convergence in Spain and establish common guidelines that will be of use to the media, to professionals and in the training of future journalists.

The Brazilian scenario can be defined as equally disheartening. The Brazilian news companies have been conservative and resistant to innovations. Their character as family businesses and the power they exercise in the social fabric strengthen their monolithic posture, tied to the security of a consolidated product, technology and market and a monomedia profile.

Along with the publishers, the same atmosphere is found amongst the professionals, who show a traditionalist profile, with an image of the profession built on an ideal of journalism that is somewhat remote from the changes brought by the irruption of the ICTs.

The Brazilian companies have made little advance in the direction of convergence or, at least, of integrating their newsrooms. In reality, the timid initiatives undertaken conceive of multimedia as the creation of a new product making use of contents produced by pre-existing newsrooms, and not as the integration of the whole process in the same space. The launch of G1, linked to the newspaper *O Globo* and the portal Globo.com, falls into this category, as does the attempt made by the group *Rede Brasil Sul*.

4. METHODOLOGIES FOR THE STUDY OF MEDIA CONVERGENCE

Any approach to a phenomenon as complex as that which concerns us here, must also be complex, if it is to be capable of studying it in all of its magnitude and in its different forms.

Convergence should not be understood as a point of arrival, but as a multiple process whose affects are felt from the phase of contents production to the phase of consumption (Jenkins, 2006). Different authors (Dailey *et al.*, 2003; Lawson-Borders, 2003; Applegreen, 2004) indicate that the approach to each of the phases that make up the processes of convergence must be dealt with separately, in order to avoid confusion, in spite of the fact that each of those fields cannot be totally dissociated from the others. This systemic character of convergence directly affects the methodologies that must be used to undertake the study of the phenomenon.

In the abundant literature – essentially North American in origin – that has dealt with the study of media convergence, there is a clear predominance of the use of methodologies of a qualitative type. Quantitative methods are mainly used in research that attempts to extrapolate data on a population, and in research that is centred on analysing the process of contents convergence. Huang *et al.*, (2004), for example, apply content analysis to determine whether the process of convergence experienced in *The Tampa Tribune* has affected the quality of its news. The same method is used by DuPlessis and Li (2006) in their study on technological convergence and its impact on the digital contents of the hundred principal newspapers of the United States.

We set out with the conviction that an approach to the phenomenon of media convergence is not possible employing exclusively quantitative criteria, which have limitations in their explanatory ability (Cabrera *et al.*, 2007). That is why we opt for a double approach to the phenomenon, selecting quantitative and qualitative methods. Amongst these, ethnographic observation or field observation is, in our opinion, the technique that best permits an approach to the study of convergence and its effect on professionals. Although it is difficult to generalise from its results, field observation makes it possible to obtain valuable information facilitating a detailed analysis of human behaviour.

In Brazil, Elizabeth Saad has made a preliminary, tentative proposal for the adoption of the model of global performance evaluation developed by Hamilton Luís Corrêa in his research group in the FEA/USP (Corrêa, forthcoming). This is a methodological model that enables account to be taken of the diversity of variables involved in processes of convergence. The model sets out from a conception of the linkage of executive phases, structured on the basis of a broader evaluation of the news company concerning the specificity of the convergent process adopted in each area of its operational process. Four phases are distinguished: 1) Organisational evaluation and strategic positioning; 2) Positioning with respect to convergence; 3) Identification of the organisational areas involved and existing sub-processes; and 4) Grouping of results and definition of common elements. Obviously, the researcher starts out from a stage prior to the executive phases, in which concepts, delimitations and the specificity of the setting, amongst other aspects, are defined/unified.

Following Jankowski and Wester (1993), field observation makes it possible to study groups in their natural context, through the researcher's participation in the everyday life of the people who are the object of study. For a limited period of time, the researcher observes the things that happen, listens to what is said and asks questions. Field observation includes in-depth interviews, analysis of documents and unstructured observations.

Wimmer and Dominick (1996) classify unstructured observations according to two basic criteria: a) the degree to which the researcher participates in the activity that is the object of observation, and b) the degree to which his research is made public. Four dimensions are obtained from the intersection of these two axes: 1) the researcher does not participate in the object of study and is clearly identified by the individuals under observation; 2) the researcher participates in the phenomenon studied and the individuals who are the object of analysis know about the work he is doing; 3) the researcher does not participate in the object of study, but the subjects under observation do not know his true purpose; and 4) the researcher participates in the object of study and the individuals under observation are unaware that he is carrying out research. Although in the opinion of some authors only the final scenario described can be considered participant observation, it is increasingly frequent in the current bibliography to refer in a generic way to any type of field observation as participant observation.

One of the main advantages of observation is that, since it does not request information but instead registers behaviour, the latter is spontaneous, more real, and is not based on answers that might be subjectivised by the evaluation of the observed subject himself, concerning what is, or is not, correct. However, it is important not to overlook the effect that the presence of the researcher himself might have on the behaviour observed. Amongst other drawbacks, field observation does not enable information to be obtained on the reasons for actions, and observers can be subjective in registering data. Another important obstacle is that behaviour might be affected by momentary circumstances (Báez and Pérez de Tudela, 2007).

The duration of observation, data gathering and the selection of case studies are fundamental elements in this technique. There is no established formula for setting the precise time of observation, although a broad period of analysis is needed to obtain a deeper understanding and an overall vision of the reality observed. In spite of this recommendation, there is a predominance of short visits, of one week or less, in the research concerning media convergence carried out to date. This is the case in the research done by Jane Singer (2004), in which she examined convergence in four North American media groups, or in that of José Alberto García Avilés (2007) concerning the group *Almería Novotécnica*.

Data gathering is another fundamental and critical element. Normally, notes are taken systematically, and as faithfully as possible to the observations made, in order to capture the entirety of the processes and contexts observed. Finally, with respect to case studies, authors like Pablo Boczkowski (2004) underline the relevance of the objects of study being journalistic companies or multimedia corporations, rather than individual media. The cases selected must be representative, which is why one should rule out selection by statistical criteria of representativity, such as probabilistic sampling. However, these are applicable if the option chosen is quantitative observation, which enables a large quantity of data to be gathered on files for subsequent statistical analysis. Unlike field observation of a qualitative type, which does not permit generalisation, it is possible with quantitative observation to extrapolate the data obtained to the whole of the population. This type of approach, however, is very unusual in research in convergence processes.

Interviews are a technique that is highly enriching and complementary to field observation. The main advantage of interviews is that they enable information to be obtained that it would otherwise be difficult to identify on the basis of direct observation alone, such as feelings, opinions, intentions, etc. From the practical point of view, they help in adaptation to the rhythm of the professionals, who would be unlikely to attend a focus group (Fernández Nogales, 2004).

Interviews usually last for approximately one or two hours. For the successful development of an in-depth interview, Fernández Nogales makes the following recommendations: 1) respect the order in which subjects emerge; this order should only be subtly redirected if it strays from the object; 2) do not rely on a script during the development of the interview; 3) avoid giving one's own opinions and suggest points in a neutral way; 4) leave more specific questions to the end, and, by way of conclusion, ask the interviewee to make a synthesis and prognosis of the evolution of the subject.

There is no uniform criterion on the number of interviews that should be held in a case of this nature, although this will logically depend on the size of the newsrooms involved, the geographic scope of their audiences and the specific characteristics of each medium. Jane Singer (2004) held 120 interviews with different individuals from the newsrooms of four groups studied: editors, managers, journalists, presenters, photojournalists, etc. In spite of this example, a tendency can be perceived to hold a smaller number of meetings. García Avilés (2007) interviewed ten members of *Novotécnica*, selected to obtain representatives of all the phases of the productive process. Dupagne and Garrison (2006), for their part, carried out in-depth interviews with twelve members of the staff of the *Media General* group.

As one can intuit from the examples above, it is recommendable that the interviewees should be selected according to their functions and participation in the convergence processes studied (Cabrera, *et al.*, 2007). Although it is not the only method possible, Silock and Keith (2006) used the so-called snowball method to select the professionals to be interviewed. This method consists in each informant identifying other people who should be interviewed. In their case, fourteen interviews were held with representatives of the newspapers *Tampa Tribune* and *Arizona Republic,* and the televisions WFLA-TV and KPNX-TV.

Approaching the phenomenon of convergence on the basis of interviews is a habitual formula in the available literature on the question. Often, interviews form part of field observation, as defined by Jankowski and Wester, but different authors have also used them in an exclusive way, as the only research technique. Stephen Quinn (2006) is outstanding in this respect; he held fifteen interviews with academics and professionals with executive responsibilities in convergence processes.

In spite of being one of the most widespread methods in communications research, the use of surveys, and of quantitative methods in general, for the study of convergence has until now been in a minority. Even so, there are different examples of research that have opted to use surveys to deal with the analysis of the phenomenon.

Surveys make it possible to approach a phenomenon in the real context in which it occurs, and to obtain a wealth of information at a reasonable cost. Obtaining information is relatively easy, without there being any need for large infrastructure or for mobilising a large number of people. Obviously, the use of surveys also presents problems and is not a perfect methodology. Thus, for example, while surveys make it possible to put two variables into relation, they are not suitable for establishing causalities. Wimmer and Dominick (1996) mention other drawbacks: the people interviewed are frequently unable to remember information related to their activity, there might be a so-called prestige bias or, obviously, the subjects interviewed might lie when responding to the questionnaire.

As in participant observation, two key elements in the survey are the data-gathering questionnaire and the selection of the sample. With respect to the sample, random sampling methods must be applied, starting out from a well-defined population and, if possible, with a complete conceptual framework, from which the elements of the sample can be selected (Trespalacios *et al.* 2005). This, for example, was the system used by Huang *et al.* (2006) to establish the sample for their study on the main concerns of the North American media industry facing media convergence. For his part, Bressers (2006) carried out a survey of the 79 predominant media in the 50 largest metropolitan areas of the United States.

With the spread of the use of Internet, web forms and electronic mail have now been added to the traditional systems for carrying out surveys – mail, telephone and in person. Although they present some drawbacks (availability of access, confusion with spam, etc.), this system has the advantage of the inclusion of images, automatic information registering and a greater rapidity than other systems like the personal interview. Since there is no interviewer, answers are more sincere and there is more time for reflection, or even for checking up on information. However, it might be necessary to provide some type of contact system in case doubts should arise. On the other hand, to encourage participation and the completion of the questionnaire, the latter should not be overlong and should be accompanied by a letter explaining the aims of the study. It might even be necessary to make prior telephone calls to make the subject more relevant to the interviewees, raise their interest and get them to answer the questionnaire. Unlike other self-administered surveys, the use of web forms makes it difficult for the respondent to read the complete questionnaire before answering, hence the final questions do not condition the rest of the answers (Schonlau, Fricker and Elliot, 2001). In the abovementioned work of Huang *et al.* (2006), they opted to use the Web to distribute a form amongst 921 editors and journalists selected for their sample. Bressers (2006), on the other hand, opted for the telephone as the medium for carrying out his survey. In both cases, electronic mail had previously been used to arouse the interest of the informants and encourage their participation.

5. A PARTICULAR CASE: ANALYSIS OF INFORMATION FLOWS IN NEWS AGENCIES

Scenarios of media convergence generally tend towards two main variants. The first is centred on concern with the transposition of a set of procedures to a new setting, in this case the digital one. Pre-digital media forms also manage to survive in the binary field, through strategies of transposing their formats, contents and access mechanisms to the information and communication technologies (ICTs). This, for example, is the position of researchers like Fidler (1997), Bolter and Grusin (2000) and Boczkowski (2004). The second variant takes account of the broader distribution possibilities involved in the digital code, which permit the coexistence of different formats (text, sound, video, photographs, infographics, etc.) and, hypothetically at least, make it possible to combine narrative strategies and symbolic production in more complex and mutually complementary forms (Manovich, 2001; Salaverría, 2005).

Convergence holds a strong connotation of the fusion and interweaving of formats of information circulation, and the mobile phone is possibly the most prototypical model of this phenomenon (Lemos, 2007), receiving traffic in different codes, combining mobility and miniaturisation. In parallel, the same perspective points towards the fusion of discursive possibilities amongst visual, textual and sonorous elements, creating possibilities and problems of adapting the message in complex contexts of content organisation and presentation.

Without belittling the importance of the results of the convergence phenomenon in variables of format, devices and modes of discourse engendered by the ICTs, we believe that the debate can be widened to include a clearer perception of convergence in other contexts of production of journalistic content. Put briefly, this is a question of asking how convergence also leads to actions that restructure the practices, dynamics and organisation of activities in the establishment of content and information flows in the field of the mass media.

5.1. Demarcation between Convergence and News Flow

Leaving the exclusively technological sphere and moving the debate onto the field of journalism, there are difficulties of a conjunctural and structural order involved in the tasks of demarcating the concept of convergence when applied to the production and circulation of contents (Mielniczuk, 2003). The conjunctural constraints relate, above all, to semantic variation (the term is a highly polysemic one and varies according to the context and field of knowledge where it is applied), and to the concept's capacity for mutation, to the extent that there is a division in the technological and social scenario. In this respect, different aspects are being added, adhering to the concept and making it more complex, so that what is understood by convergence today is necessarily different from what the concept meant some years ago.

The structural problems mainly reside in the impossibility of historically situating where and when the phenomenon began and, also, in the difficulty of adapting the phenomenon as a whole to specific models of content production and flow. Put differently, convergence has different origins and formats in, for example, journalism, news agencies, the music industry, the cinema, etc.

It is recognised that the notion of convergence is not a totally new phenomenon and that it is linked to the historical process. Journalism – and its dynamic of content flow – cannot be considered as a completely autonomous nucleus for the generation of content and social dynamic. It is constituted as a specific sphere that requires specific knowledge but, like all dynamics of symbolic production in complex societies, it is situated in chains of interdependence, interacting with infrastructural bases and with demands, or pressures, from the social field, with which it interacts directly (Livingstone and Lievrouw, 2003).

In the classic conceptions of information theory, the idea of flow refers to the quantity of information that flows between variables of origin and destination, in the execution of a process, in such a way as to determine the necessary capacity of resources and channels involved for transmitting the information (Shannon, 1948: 49). The nuance that must be introduced in this case is that the flow is fixed within a mathematical perspective, which involves aspects of logarithmic analysis, probability and degree of chaos in order to measure the information present in a system.

Within a communicational perspective, the concept of information flow refers to the proportions of quantity and quality of information established between agents, which can be organisations, countries, media groups, etc. Such a definition orientated research (especially in the post-war period) that, through quantitative and qualitative observation, detected that information flow occurred intensely in a direction established between the developed and undeveloped countries (UNESCO, 1980: 45-46; Varis, 1994).

In the dynamics of journalism on the Web, parallel flows are created that are synergic to the processes and practices of journalism (blogs, photologs, contributions by citizens to traditional newspapers). This does not annul the traditional spaces and channels of collecting, treatment and circulation of news in a primary sense. What emerges is an additional stratum of information, which widens and complements the productive activity of newspapers (Smith, 1980: 79).

The potential advances on the global scale, which are permitting an expansion of the horizon of circulation and flow of journalistic content, form part of a historical trajectory that is obviously not restricted to the appearance of Internet, however much the latter might have permitted a quantitative and qualitative increase in content flow. On the other hand, during the 1980s and 1990s, convergence was a phenomenon that achieved a potential of extreme synergy in integrating the media industry and its products, as well as the corporations and the processes of content flow.

The effects of those transformations that occurred in the 1980s and 1990s have been nearly always considered in an isolated way:

a) Convergence approached as a process of integration of coordinated tasks to establish and widen the chains of information and news flow;
b) Convergence considered as a juxtaposition and combination amongst mass media, languages and formats, that is, a product, a symbolic form;
c) Convergence as a fusion and integration amongst companies and corporations.

Besides this triple perspective of the implications of the concept of convergence, we believe that intersections with other spheres should be indicated, although in a more general way. These include: adjustments in the profile of access and availability with respect to other symbolic forms of content (television, printed press, radio, etc.); the interaction with infra-structural aspects (data networks, telecommunications, etc.); the divisions of historical aspects (social consolidation of the newspaper form on the social horizon); and, obviously, the configuration of new symbolic forms of journalistic activity (blogs, newspapers on the Web, etc.).

The relational horizon existing between content flows and the concept of convergence must necessarily supersede lineal perspectives of understanding the communication process, such as the now outmoded proposals contained in the work of theoreticians like Lasswell (1978), Shannon (1949), and more unilateral perspectives like that of the hypodermic needle theory. This is a question of superseding theoretical options that attribute excessive importance to the emitter, or, specifically in the case of journalism, to the journalistic organisations in establishing news flows.

The current complex configuration of journalism, based on digital technological systems, has its own need of articulation with the Web as a whole and the logics of news circulation. On the horizon of the change between those systems, there are conciliatory dynamics acting between the circulation flows of journalistic content and technological, economic and cultural reality itself, the latter understood as a set of subsystems present in the problem of those flows.

In the methodological sphere, the task is to propose a model, articulated in a multiple and interdependent way, in which the processes of symbolic production related to digital journalism can be understood on the basis of combining diversified factors.

5.2. Analytical Proposal

In a way that is analogous to what is happening in journalism, the phenomenon of convergence is also creating a division in other sectors of contemporary symbolic production. The editorial logics of newspapers can establish a news flow that possesses similarities with the logics operating in other fields, such as the music industry and the cinema, which are also being reconfigured by the phenomenon of convergence.

Restricting the discussion more specifically to the case of journalism, some central contemporary characteristics of the problem of the convergence scenario must be emphasised. In spite of digital technologies freeing the pole of content emission (Lemos, 2002) and permitting relatively easy access to journalistic content generation in a post-massive form, from the viewpoint of the professional market there are still restrictions of legitimation through the formats established around normal journalistic practice.

In this respect, the complexity of the picture is provided by the institutional weight of the newspaper, or journalistic organ, in consolidating the public image of news production (Rodrigo Alsina, 1996), as something that demands the recognition of a set of values required by events if they are to become news. To this is joined the existence of a specific professional, the journalist, who possesses a set of technical and cognitive skills and is capable of providing suitable treatment to that ensemble of information and of synchronising his work logic according to the requirements not only of the institutional role he occupies, but also of the peculiarities of the current technological factors, events and contents with which he is dealing.

In a certain way, the collection of innovative evidence of content flow, processes of production management and format innovation, points towards a scenario located in an age of microcomputers and digital networks. However, the validity of some principles present in digital convergence has well-consolidated historical features, which, in a perspective of dialectical synthesis between journalistic practices and communication technologies, points towards certain tendencies of continuity and potentials (Palacios, 2002, 2003).

The first of these features, multiplatform content, or the linkage of content to several formats, is assimilated in the models of convergence as a capacity given by the existence of digital devices capable of dealing with every type of code. The history of news agencies shows that that possibility has been established for a long time (Boyd-Barret, 1998; Read, 1992), by an adaptation of the agencies' model of work to the diversity of the market of customers and newspapers demanding their services. The possibility of a single message being distributed for different devices and symbolic forms is not an exclusive predicate of the digital age and, much less, an exclusive attribute of convergence.

Another recurrent point in conceptions of convergence refers to the possibility of multiple access, production and circulation in a decentralised way. Once again, in the case of news agencies, we find that decentralisation of the process of content production is one of their basic characteristics. In this case, there is a separation, or physical discontinuity, of the procedures of symbolic construction, which are reorganised and coordinated through connections by communication networks.

Another two elements also present in analyses of media convergence, instantaneity and personalisation, as characteristics inherited from other media, are also found in the historical trajectory of the news agencies, through practices relating to operational velocity and the formatting of services for numerous clients and the production of "information" packets directed at specific segments of the clientele they serve.

Omitting these more specific aspects, now that we have considered the functioning of the agencies' internal work models, it is easy to detect the close interrelation between these organisations and the technological infrastructures. Observing the interaction between the dynamic of the agencies and the historical development of online technological alternatives, we can perceive an interrelation between the two spheres (Silva Jr., 2006):

a) From the start of their history, the agencies emerged as developers of network communication models (Silva Jr., 2006);
b) They created sufficiently stable and voluminous flows, permitting the maintenance of the network systems;
c) They rapidly adapted to developments, creating alternatives that boosted their activities according to the available infrastructural characteristics;
d) They were pioneers in perceiving possibilities for implementing differentiated services integrated in the essence of network operation: velocity, omnipresence and interactivity.

The network of data circulation is the backbone for the existence of the operations of the news agencies. Without such data the business model and the stability of the system would annul the possibilities of operation. An agency only makes sense as a network; the agency is a network. It is based on the combination of data circulation with the specific dynamics of the agency's nature. That shows that from both the historical and the organisational points of view the agencies anticipate aspects that will be present in the scenario of convergence and, consequently, they will influence the establishment and management of news flows.

Hence, to speak of content flows in news circulation is to speak of the configuration of structures that make such traffic viable, whether in agencies or in newspapers. All of the functions that journalists, companies and devices perform are conditioned by that greater setting, permeated by digitalisation. It is no longer possible to speak of a continuous line of production, since the sequence of treatment and circulation of the journalist's information is no longer a continuous one. In place of the classic model of a sequence of consecutive stages (guideline, checking, documentation, consolidation, editing, production, distribution and consumption of contents), we have a process in which these categories remain, but they can be considered as a permanent circumstantial game, in which the categories mutually influence and condition each other.

This is a situation in which the velocity of development of the devices, allied to the pressure of the capital involved, imprints differentiated logics on the very understanding of news flow: decentralisation, fragmentation of the work process, constitution of each micro-unit as a micro-universe of content production, treatment and circulation.

A possible methodological perspective for the case of newspaper contents is thus to establish analytical parameters based on a scenario where the processes engendered are seen in the light of the existence of a chain of flows where the digital networks operate effectively, acting on the organisational basis of the journalistic companies and on the way new relations of content production, treatment and consumption are articulated. The process of news flow cannot be analysed in a lineal wa y, but instead as something that always connects, recovers, continues and feeds back into the chain of characteristics involved in the system as a whole.

Taking as a starting point an analysis of the relations present in the music industry (Prestes Filho, 2002), we can construct a similar model about the interrelations of the dynamics present in the processes and systems of journalistic content flow. Obviously, we are aware that there are differences and its application is based on the understanding that each sphere of cultural production possesses its own particularities. However, we understand that both are deeply conditioned by the dynamics of convergence.

Thus, in a preliminary and hypothetical way, we can make a graphic representation of the processes of convergence of news flows.

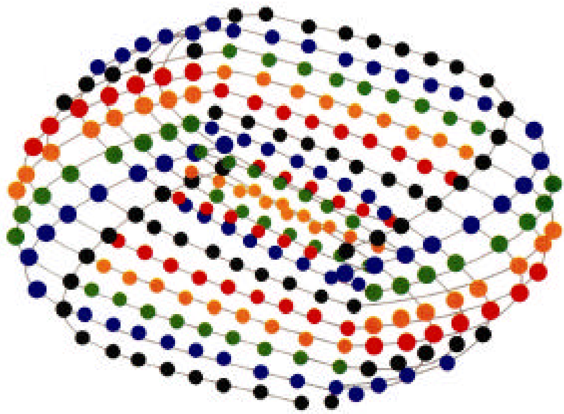

Figure 1

The links amongst the most general dynamics of the field of journalism (the collection, treatment, circulation and consumption of content) are highly sensitive to undergoing arrangements and readjustments that n ot only affect the general dynamic of journalism, but also the extensive symbolic forms with which it has to deal. Besides, we can perceive that factors comprising the field can adopt numerous positions. This is the case of Internet, which is not restricted to an isolated dynamic, but can be present in and traversed by different dynamics of the general system of convergence.

The system of analysis proposed reveals the complexity of the picture of convergence applied to journalism and also proposes changeabl e roles, including that of the news consumer, who becomes much more active in this process. He is no longer merely a receiver of news, but directs the channelling of new dynamics and arrangements of content circulation and production. In this respect, it becomes clear that in a complex process of convergence news flows are not unilateral, nor are they exhausted in reading. There are counter-flows that, in a certain way, have a feedback effect on the public agenda, making the news offer horizon more complex (McCombs, 2003). The flow is cyclical.

News consumption ceases to be represented as a static stage, situated at the end of the process. Equally, collection, treatment and circulation cease to occupy fixed positions. They are complex and variable links in the model of flow, present throughout the whole news process. There is a tendency for the roles of producer and reader to draw closer together, for there to be a sharing out, or systemic cooperation between their functions. This obviously involves a restructuring of the profession and the qualifications involved, as well as a reformulation of the reader for more participatory practices.

9
Teaching Online Journalism and Its Evaluation

1. THE IMPACT OF DIGITAL TECHNOLOGIES

The emergence of digital journalism as a specialised professional practice is giving rise to a diversity of changes in university journalism courses: creation and introduction of new disciplines, restructuring of syllabuses and, more recently, a movement towards the adoption of distinguished teaching and research models (Machado, 2006; Tejedor, 2007; Kelley, 2007).

The majority of authors coincide in indicating that the online media are today still in a stage of transition and experimentation. Hence the continuing need to redefine the study and teaching plans of journalism so that our universities can satisfy the needs of this new form of conceiving and practicing journalism.

Since 1994-1995, the teaching of the journalism associated with the cybermedia has passed through three very different practices:

1) Appearance of new demands;
2) Incorporation of the technologies in the curricula;
3) Transformations in the teaching practices.

In Spain, when the first step was taken in 1994 in establishing a new training program in online journalism, with the foundation of the Multimedia Communication Laboratory at the University of Navarre and the establishment of the first subject on Internet journalism, the question of training journalists in and for Internet began to acquire significance.

Meanwhile, in general terms, progress has been slow and uneven, and it is difficult to identify the reasons why the Spanish university has rejected the new media, although José Manuel Pérez Tornero (Pérez Tornero, 2007: 17) does not hesitate to link them with the attitude adopted by the teaching staff. In this respect, this lecturer at the Autonomous University of Barcelona affirms that "[the lecturer] systematically turns against a phenomenon he considers transient and that, in the final analysis, might put into question his routines and traditions".

Teachers in a consolidated academic situation should have promoted the incorporation of online journalism into the study plans. From their privileged position they were in a situation to have done so. However, they redirected attention towards the demands of the discipline, its lack of recognition, etc. The need for permanent recycling and the lack of a mentality open to innovation seem to be antagonistic arguments, hardly compatible with the privileged situation that some enjoyed. The result is obvious: online journalism has entered the Communication Faculties through the back door, through more or less camouflaged optional subjects, and thanks to the efforts of young, enterprising and enthusiastic lecturers, in the majority of cases with little experience and an uncertain job situation.

Facing this panorama, it has frequently been the smaller universities that have promoted teaching in online journalism. Hence, for example, universities with a long tradition, such as the Autonomous University of Barcelona or the *Complutense* University of Madrid, do not have specific subjects dealing with online journalism in their respective study plans. While other smaller centres have fully incorporated it. This is the case, for example, of the University of Santiago de Compostela, the *Rovira i Virgili* University of Tarragona, or the University of Vic, which became the first Spanish university to offer an official master's degree specialising in Digital Communication, adapted to the new demands of the new European Higher Education Space.

More recently, it is worth mentioning an initiative of the University of Málaga, which for the first time, in the 2006-2007 course, offered a virtual subject in the Communication Sciences Faculty, under the formula of a project of educational innovation for convergence in the European Higher Education Space awarded by that university. This was an optional subject in the second cycle entitled "Interactive Journalism and Creation of Digital Media", conceived for adapting the basic tasks of the journalistic profession to the online medium and acquiring skills in the use of technologies involved in the construction of web pages.

In the Brazilian case, changes are being introduced in a gradual way and without centralised directives. There is a considerable imbalance amongst the different higher education institutions concerning the degree and form of incorporating reforms that adapt the syllabuses to the new market demands and to the challenges of experimentation in laboratories for journalistic production supported by digital technologies and the emergent platforms for its diffusion.

The teaching of online journalism was introduced for the first time, as far as we know, in the Federal University of Bahía (UFBA) in 1995, with the creation of the discipline of Digital Journalism, which had an optional character, on the syllabus of the course for a Communication Diploma with qualification in Journalism. The discipline was built around the production of an online laboratory newspaper, consisting of four hours a week (60 hours/semester). In the reform to the syllabus of the year 2000, the discipline of Digital Journalism came to have a compulsory character, with the format of a theoretical/practical workshop, consisting of eight hours a week (120 hours/semester), complemented by another compulsory discipline, involving

Communication and Technology, and several optional subjects covering aspects of digital culture and providing basic computer and multimedia production skills.

The process followed in the UFBA is fairly paradigmatic of what is occurring in Brazilian university courses on journalism in general, with the gradual introduction of optional disciplines, later made compulsory on the syllabus and complemented by others that add general knowledge about digital technology, digital literacy, multimedia, etc.

2. STUDY OF CHANGES IN TEACHING

In the mid-1990s, at almost the same time that digital journalism was being constituted as a practice with its own characteristics on the market, academic works were published aimed at evaluating the challenges faced in teaching the journalistic profession, and the repercussions of the unavoidable alterations in course programs, in teaching methodologies and in the production processes of journalistic companies (Machado and Palacios, 1996; Friedland and Webb, 1996; López, 1999).

On the basis of an exploration undertaken in some of the main specialist journals (*Pauta Geral, Journalism Studies, Journalism-Theory and Practice, Newspaper Research Journal, Journalism and Mass Communication Educator, Journalism and Mass Communication, Latina, Zer, Ámbitos* y *Estudios de Mensaje Periodístico*), it is possible to conclude that over the last twelve years there have been four phases in the research in the teaching of digital journalism.

In the first works published in the United States between the years 1996 and 1999, the researchers were interested in verifying the degree of incorporation of online publication in the curricula of journalism courses (Friedland and Webb, 1996), the attitudes of teachers and students towards the new technologies (Singer *et al.*, 1996), and how the Web was being used as an instrument for teaching and learning (Sutherland *et al.*, 1999; Hester, 1999). In these first five years a description was made of the extent to which courses were responding to the demands of the labour market and the ways that teachers and students were incorporating, and reacting to, digital technologies in the teaching and learning process. These studies basically had an exploratory character, trying to locate changes underway and identify the degree of penetration of the digital technologies in journalism courses.

In the second phase (2000-2001) a series of works published in *Journalism & Mass Communication Educator* orientated the focus of the discussions. On the one hand, studies can be identified that concentrated on more specific aspects, such as verifying the degree to which courses were in a condition to make digital production accessible to all students (Guthrie, 2000), testing the possibilities of remote teaching (Reis *et al.*, 2000) and investigating how the Web was being used for teaching journalistic news-writing (Blake, 2000). On the other hand, works appeared that dealt in greater depth with questions such as the degree to which syllabuses were being, or should be, reinvented through the incorporation of digital technologies and the use of online platforms for teaching and learning (Huesca, 2000; Deuze, 2000).

In the third phase (2002-2003), with the consolidation of digital journalism as a professional practice with differentiated characteristics, the central question became one of ascertaining the real impact of technological transformations on the teaching of journalism. In 2003, the *Journalism & Mass Communication Educator* promoted the symposium *Learning reconsidered: Education in the digital age* and published a new series of articles identifying the changes introduced up until then in teaching practices (Voakes *et al.*, 2003), the implications of the use of online platforms for teaching and for pedagogical methods (Hoag *et al.*, 2003), the diffusion of courses involving use of the Web in the United States (Sutherland, 2003) and, finally, revision of the reference bibliography concerning the use of computers in journalism teaching (Hoag *et al.*, 2003).

The bibliographical review of Hoag and others traced a panorama of the production on the use of computers and teaching methods employed in journalism teaching in eight scientific communication journals – only one of which was specifically on journalism, *Journalism Educator*, which later became *Journalism Educator & Mass Communication* – and in 41 further journals of other disciplines, ranging from medicine to geography, and including education, computing, social sciences and mathematics. In the period between 1986 and 2002, Hoag and his team found a total of 76 works related to the question. Of these, 30 were published in one of the eight communication journals analysed. Fourteen works were found in the only publication specialising in journalism (*Journalism Educator & Mass Communication*).

In the Brazilian case the first research texts related to the incorporation of digital technologies in journalism teaching date from 2002 and 2003, seven years after the start of the first experiences in digital journalism and the creation of specific disciplines in the country's journalism courses (López, 2002; Schwingle, 2003). With the exception of the work of Débora López, presented as a communication at the III Congress of Digital Journalism held at Huesca, in Spain, Schwingle's article represented the first effort of reflection by the *Grupo de Jornalismo On-line* (Online Journalism Group - GJOL) of the UFBA, on the adoption of technological platforms for teaching in the area of journalism.

In the Spanish case, different researchers carried out detailed studies coinciding with the turn of the century; this is the case of the following authors, amongst others: Javier Díaz Noci (talk at the IV Congress of Digital Journalism of Huesca), Koldo Meso (*Chasqui*, 2003) and Xosé López (1999 and 2003). In 1999, Xosé López proposed a change in the study plans in order to guarantee that students trained in the Galician university would know how to handle Internet. And in the year 2003, following the introduction of the relevant changes by the University of Santiago de Compostela, he analysed the chosen course and compared it with other existing proposals in the Spanish area.

Finally, in the fourth phase, from 2004 onwards, we find works such as those of Machado and Palacios (2004), which recounts the experience of teaching digital journalism in the FACOM-UFBA (1995-2005) at the V Latin American Congress of Digital Journalism, and of Deuze *et al.* (2004), which presents the results of a comparative survey on the particularities of teaching online journalism in Germany, Belgium and Holland. Since 2005, various texts have been published by researchers from Brazil and other countries, such as those of Schwingle (2005), Royal (2005), Lowrey (2005), Castaneda *et al.* (2005), Canella *et al.* (2005), Díaz Noci (2005), Machado *et al.* (2005) and Machado and Palacios (2007).

In Spain, the most ambitious initiative aimed at determining and explaining the panorama of studies in online journalism is a doctoral thesis. This was defended in 2005 by Santiago Tejedor Calvo, a lecturer at the Autonomous University of Barcelona, and was directed by Professor José Manuel Pérez Tornero. The thesis made a diagnosis of the state of teaching in online journalism at the start of the XXI century, defined the profile of the online journalist (skills and abilities), and made concrete proposals for training online journalists in the syllabus plans. The author noted strong and weak points in such training, and at the same time suggested ways of undertaking a change of direction in the training programs leading to qualifications in journalism.

The corpus of the research carried out by Santiago Tejedor in his doctoral thesis is formed by the programs of 109 subjects (corresponding to the year 2004-2005) of 26 Spanish universities that currently offer a degree in Journalism. Tejedor consulted 42 teachers and researchers from different Spanish universities, all linked to the field of online journalism. They contributed their reflections on the general aims of training in this field, the focus of such studies, the content of the specific programs on online journalism, the type of didactic approach, the number and characteristics of the subjects, etc. He also carried out a series of in-depth interviews with professionals engaged in online journalism with different digital media, in order to determine the principal shortcomings in the training of professional journalists, as well as the new areas of ability and skills required for online journalism.

In the conclusions of his quantitative and qualitative analysis of the subjects dealing totally, partially or tangentially with online journalism, this lecturer from the Autonomous University of Barcelona indicates that 7% of the total subject matter offered in the Journalism study plans are dedicated to Digital Journalism. That is to say, that there is less than one subject dedicated exclusively to online journalism in each Communication Faculty.

3. RESEARCH METHODOLOGIES

In the first twelve years of studies on the teaching of online journalism, the reference bibliography shows that a diversity of methodologies has been adopted in this research: case study, survey, bibliographical review essay, experiment, quasi-experiment, content analysis, historical narrative and applied research, with a predominance of the survey and the case study in the United States.

In the first and second phases (1995-1999 and 2000-2001 respectively) of the studies on journalism teaching associated with the cybermedia – in which the bibliography reviewed is directly associated with North American researchers – the works published are experiments, surveys, case studies or show a hybrid methodology, with the simultaneous application of content analysis and survey. In keeping with the tradition of empirical research that predominates amongst North Americans (Igartua, 2006), the studies are of a predominantly quantitative character.

In the third phase (2002-2003) the majority of works use a quasi-experimental survey methodology. Outstanding amongst them is a work of applied research carried out in Brazil (Schwingel, 2003).

In the fourth and final phase (2004-2007) there is a greater abundance of works by Spanish and Brazilian researchers. In this stage there is a balance in the adoption of the different types of research method, although a slight predominance of applied research can be noted, followed by surveys, case studies and bibliographical review essays. Outstanding in this respect is the study by Santiago Tejedor (2005), which makes use of a combination of qualitative and quantitative research techniques, as noted above. These is an increase of applied research, largely due to the contributions and leading role of researchers from the GJOL of the UFBA, with the production of texts and two prototypes of platforms for online publication, resulting from a research network involving researchers from several Brazilian universities, the University of Córdoba (Argentina) and the Technological Institute of Monterrey (Mexico) (Machado y Palacios, 2007).

The balance in the use of different methods, to the extent that research in digital journalism teaching becomes consolidated as an object of study, reveals that the researchers are becoming more mature and that there is a healthy complementariness amongst the different epistemological traditions in the journalism field. While there was a supremacy of quantitative works in the early years, proceeding from the United States, with time qualitative or applied studies have been gaining ground as researchers from Brazil and other countries have come onto the scene (Meditsch and Segala, 2005).

Facing the future, we believe that what is needed is a broadening of activities in the methodological field and in the application of research techniques. In this respect, we offer some proposals – some of them exploratory and others that will be applied in the near future – that might be of interest.

3.1 Survey

Surveys are one of the most deeply rooted and widely employed research techniques in the field of Communication Studies. In principle, the approach is fairly simple: putting a series of questions to a population, with the answers later collected and analysed. In this way it is possible to capture the opinion of a society or a concrete social group. Professor García Ferrando defines the survey as "research carried out on a sample of subjects representative of a wider group, carried out in the context of everyday life, using standardised procedures of questioning, in order to obtain quantitative measurements of a large quantity of objective and subjective characteristics of the population" (García Ferrando, 1987: 164).

The drawing up of survey, as is well known, requires that a series of phases be fulfilled:

Delineation of the universe, that is, **selection of the population** that will form our object of study.

Design of the sample, a process that is subdivided into two phases: Determining the sample size.

Specifying a **sampling method** for selecting sample elements (random or probability sampling; non-random or non-probability sampling).

Drawing up the **questionnaire**.

Choosing the type of interview that is to be the **method of contact** with those surveyed (*Telephone interview; Personal or face-to-face interview; Interview by post; Interview over the Internet*).

When it comes to dealing with online journalism teaching as a subject of study, interviews are a very attractive option for capturing the opinion held on this question by a group within society (this can be refined later, depending on the interests governing our research, whether we only want to determine the degree of satisfaction or dissatisfaction of university graduates, or whether we also want to apply this to those in charge of digital newsrooms, training experts, etc.).

3.2. Content Analysis

It is not our wish to establish some type of ranking in the use of different research techniques in journalism. Nonetheless, the high degree of development achieved by content analysis in the communication sciences is undeniable. This is a quantitative research technique that aims to extract inferences through the systematic and objective identification of the characteristics of content possessed by the data analysed.

Content analysis is a research technique that it is apparently simple to carry out – the degree of specificity or complexity sought in each specific research study is a different question. Following a process of categorisation and subsequent codification of the data, including statistical treatment, content analysis makes it possible to draw conclusions supported by measurement of the frequency with which certain elements of interest to the researcher appear.

On the other hand, the data indicate that qualitative techniques are a path that has been little explored in recent years in research in the training of online journalists. This is a highly relevant option for research in study plans, the fulfilment of the objectives of these plans, and for analysis of proposals differing from the dominant model. In this respect, we consider the following techniques to be relevant:

3.3. Discussion Groups and Focus Groups

The discussion group is a technique for collecting qualitative information that enjoys high prestige in the field of the social sciences. It emerged at the start of the Second World War when psychologists and specialists in mass communication and propaganda of the United States army began to use group interviews to test the effectiveness of propaganda pieces broadcast on the radio in that period. Roberto de Miguel defines it as “that technique or focus based on the meeting of a human group, whose number does not usually exceed a dozen individuals, aimed at inducing the production of spontaneous discourse from its participants facing a set of concepts specified by the researcher or the person in charge of carrying out the study” (De Miguel, 2005: 265).

Generally, the discussion group is employed as a device prior to putting into practice a quantitative measurement technique. That is, the discussion group is used as a strategy for the collection and selection, or hierarchisation, of information; frequently, after holding a discussion group, new hypotheses emerge or the initial hypotheses are refined.

In the scientific literature it is possible to observe a wide range of typologies of discussion groups, each with its peculiarities and specific characteristics:

Phillip 66. In this technique a group of individuals is divided into sub-groups with a proportional character, in order to extract points of consensus from amongst their opinions or general questions of common interest.

Delphi Group. Successive interviews are put to a group of experts previously selected by the researchers. The prediction of the consequences of a specific process or event is the underlying aim of the *Delphi Group*, which is regularly employed in studies with a prospective character.

Brainstorming. A group of individuals – generally a small one – pool their ideas and thoughts on an issue, process or event, in order to find a solution to the given problem.

Krueger (1991: 12) individualises the *discussion group* with respect to other group techniques for obtaining information, since, in his opinion, discussion groups in a strict sense "[…] are a technique for collecting data of a qualitative nature that bring together a limited number of participants (generally between seven and ten), who do not know each other and who have homogeneous characteristics with regard to the subject researched, in order to maintain a guided discussion in a permissive, non-directed climate".

The role of the moderator in this research technique is an essential one, especially in the so-called *focus group*. While in a *discussion group* – a form productively established in European research – the moderator adopts a position of distance, restricting his role to that of introducing the subject under discussion and avoiding intervention, in the Anglophone variant – the *focus group* – the moderator also plays the role of interviewer, which forces him to interact frequently.

With respect to obtaining and subsequently analysing data, Roberto de Miguel clearly explains the substantial differences between the Anglophone and European variants:

> […] The Anglophone perspective more frequently has recourse to codification and categorisation of the statements made during the session, which permits a count to be made of subject concurrences (content analysis) or other types of qualitative and quantitative analytical procedure (discourse analysis, actor analysis, causal analysis, etc.). In discussion groups, on the other hand, the normal analytical recourse is of an inductive nature, since the principal task of the researcher is to confirm the validity of the general ecosystem that he has tried to represent in the formation of each group (De Miguel, 2005: 273-274).

The final report of a discussion group is a written analysis, in a descriptive-narrative style, which contains the main conclusions resulting from the research. Krueger (1991) dedicates a whole chapter of his manual to an explanation and a taxonomy of the different types of report obtained from the application of a discussion group. Following Vallé s (1997: 328), we can see that in his manual Krueger establishes three models of written report:

The "direct data" model. This consists of "introducing the subject or basic idea and then presenting all the commentaries of the participants" classified by themes or sub-themes. For Krueger, this type of report should only be "a prelude to a descriptive or interpretative report" (Krueger, 1991: 132).

The descriptive model. This is a "summarised description followed by illustrative quotations". It is a more elaborate report than the previous one, as it requires the selection of commentaries concerning the subject or subjects dealt with.

The interpretative model. Here the researcher "offers illustrative quotations followed by the corresponding interpretations". Obviously, this model requires a greater effort of analysing and interpreting the results.

3.4. In-depth Interview

Under the expression *techniques of conversation*, a great variety of qualitative interview techniques are found: *in-depth, biographical* and *group techniques.*

Patton (1990: 288) speaks of "variations in the qualitative interview" and considers four principal forms:

The *informal conversational interview*, characterised by the questions arising and being answered in the context and natural course of the interaction.

The *script based interview*, defined by the preparation of a script of subjects to be dealt with.

The *standard open interview*, characterised by the use of a list of questions, whose order and formulation is the same for all the interviewees, but with free or open answers.

The *standard closed interview*, distinguished by the use of a list of questions, whose order and formulation is the same for all the interviewees, but with a closed answer.

Another classification is offered by Millar, Crute and Hargie (1992) in their work *Professional Interviewing*, where they distinguish between five types of *professional interviews*, of which we will mention the four that are of greatest use for researchers in the social sciences:

The *counselling interview*, which can consist of juridical, financial, labour, psychiatric or medical counselling, etc.

The *selection interview,* widely employed in evaluating candidates for a job.

The *research interview,* understood as a technique for obtaining information that is relevant to the object of study.

The *appraisal interview.* This form of interview is characterised by its application in contexts of planning, training and managing human resources.

The expression *in-depth interview* (Gorden, 1956; Banaka, 1971) has emerged victorious in the battle that has taken place between different terms in the scientific literature.

Finally, we must mention the advantages and drawbacks involved in applying this technique of research and data collection. With respect to the pros, the most outstanding advantage is that in the initial phase of any study it generates viewpoints, approaches, hypotheses and other useful orientations for taking a project from paper to the real circumstances of the research, or adapting this to the demands of the client. This technique serves especially for the tasks of immersion or reconnaissance, from which the other qualitative and quantitative techniques benefit. It performs a strategic role in envisaging errors that might otherwise be costly: in terms of time, means and the quality of the information obtained.

On the other side of the balance, there is the fact that, as with other techniques based on communicative interaction, the potential problems of *reactivity* (Webb *et al* 1966), *reliability* and *validity* (Denzin, 1970; Gorden, 1975; Millar *et al*, 1992) can arise in this type of encounter (Cf. Vallés, 1997: 177-232). That is, the information produced in the interviewer-interviewee relationship depends both on the circumstances of the interview and on the characteristics and actions of interviewer and interviewee. All of which can consequently affect the real *validity* of the data of the interviewee.

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