

Graphic Design in the Digital Era: The Rhetoric of Hypertext

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The graphic media have, for some time now, been constructors of the social imagination, structures of thought, and devices for discussion in public forums. Their visual nature does nothing to lessen their cultural importance. On the contrary, the image is a powerful way of bringing home a point, both logically and emotionally. As David Olson¹ has pointed out, the way information is presented in the graphic media has helped to position us in the world, at least in those cultures such as ours where the use of the symbolism of visual communication is predominantly social.

In the world of writing and the editorial media, design objects have allowed the construction of a particular type of discourse and the highly developed use of verbal and visual communication. In the conscious articulation of syntax and punctuation, in the organization of paragraphs, pauses, silences, and digressions, visual signs and their history play a considerable part. Different typefaces, grids, and graphic signs in a text are not only important for their perceptual or formal qualities, they also play a cognitive and symbolic role, and regulate our interpretation as we read. In Western tradition, this matrix has facilitated the generation of numerous devices from books to encyclopedias, magazines, and journals. More recently, with the development of design, the regulation of graphic-linguistic reading can be seen on television screens, in corporate images, and on posters.

The technology of reading in our culture is quite sophisticated, as it has been built up over centuries of tradition. Nonetheless, the contemporary era has provided it with new devices and the advent of electronic microsystems has brought the most recent of technological transformations in graphic discourse: the digital revolution. Impetus has been given by the constant search for the expansion of textual and graphic code, the production of knowledge, the storing and exchange of information, and the expansive development of the global marketplace and of telecommunications to a technological synthesis. The set of mechanisms for graphic expression developed to date can be administered in the unique medium of the computer screen; the digital media has become foremost among production processes, allowing for a greater and faster flow of information.

¹ David Olson, *The World on Paper* (Cambridge: Cambridge University Press, 1994).

The digital revolution rests on the capacity of electronic bits to encode the information making up an image, a text, or a sound, using a simple binary principle. This makes it possible to manipulate, fragment, and connect these images, texts, or sounds. As in the process of perception, the printing of information in analogical formats is continuous rather than in a collection of dots. Digital transcription, on the other hand, is discontinuous, the data being processed via numerical code. This makes formats, typefaces, grids, colors, and textures easy to process and store, fragment, or partialize, and any of their structural vectors can easily be joined with any other. The transformation of analogical into digital data has given rise to a new logic in the production of symbols and signs, and new rules and networks for cultural exchange and communication. According to G. Bettetini, this new technological device has changed the "scene" because, when analogical data is transformed into digital data, "similar variations of different magnitudes are substituted by numerical equivalents allowing, on the one hand, the transmission of many more signals on the same wavelength and, on the other, the possibility of transmitting on the same channel signals which are not in themselves homogenous, but which can be made similar and reciprocally compatible by reduction into numerical entities."²

The other characteristic of this digitalization of information is its electronic nature, which makes the data processed both more virtual and nonmaterial and also more ephemeral. This is substantially different than analogical predecessors. Information contained in this way is more easily transferable, reproducible, and modifiable; it takes up very little room and weighs nothing, so transmission is practically immediate. It also frees discursive production from the physical and material volume by which it was bound.

This evolution of devices or supports towards the electronic screen, the consequences of which have without doubt been surprising, has led to numerous new possibilities for the exchange of information, and for the rules underlying its production and diffusion. Images can be transported; sounds can be modulated and mixed at a distance. On a digital soundtrack, for example, a tone of voice easily can be modified or mixed with another. A photograph can be altered by manipulation of its pixels, and its traditional referral procedure can be substituted by electronic randomness. The presence of artifice in the creation of textual or visual discourse, which, under previous design genres always had been implicit, has now become evident. More than ever, there is a new awareness of the mutability of systems that had seemed firm and permanent.

Digital production and the possibilities created for global interconnection and simultaneous discourse on-line thus has raised a series of new questions on the nature of reading and interpretation, and of communication and the very "status" of signs. Its expansion also has created new problems. In the first place, an elec-

2 Gianfranco Bettetini and Fausto Colombo, *Las nuevas Tecnologías de la Comunicación* (Barcelona: Buenos Aires, 1995), 15–16.

tronic surface, like any other kind of surface, manifestly conditioned the approach to information on the part of the reader. Readers could vary the way they looked at the information; they could change the context of the information: they could move agilely from one genre to another and make immediate connections between processes with different symbols or between systems of information from different latitudes or languages. This led to the unprecedented possibility that the universe of global information could be brought up to date via the computer screen, giving a new form of hyper-encyclopedia existing virtually in cyberspace, and granting simultaneous sensations of infinity and volatility to the reading process.

Enthusiasm for the agility of these processes gave rise to new theories of reading that even questioned the viability of the old concepts. There also was an excessive appreciation of computers. It was thought that units of significance had been broken, that a new and surprising multi-relational mechanism of information was appearing to substitute and completely eliminate the old systems, such as books, which were now said to be passé or retrograde. This inordinate valuation of the technological and of digital culture led some to believe the computer was the solution to every problem, and that technology would even bring about a new kind of man and a new system of thought.

This can be seen in the enthusiasm for the first theories on hypertext, which rushed to proclaim that the multicursivity of reading and the reader's power to "freely" navigate between different parts at the same time was something resulting only from the digital device and previously unknown. In classic theories of hypertext, such as Bolter's³ or Nielsen's,⁴ it also was said that the novel possibility of thinking in complex and multiple structures, with different ways of approaching the text available to the reader, with nonlinear processes which were better than the old "surpassed" linear systems, and with textual systems than have no beginning, middle or end, was quite unheard of, and that one now must think in terms of interconnectivity and multiorder rather than consecutiveness and hierarchies. George Landow, for example, said that "present-day conceptual systems based on such notions as center, margin, hierarchy, and linearity should be left behind and substituted by others such as multilinearity, nodes, links, or networks."⁵

But without denying the impact of electronic devices on the culture of communication, how far can the thesis of the absolute revolutionary power of the computer and nonlinear reading systems be taken? According to the new digital discourse, the operation of reading was now supposed to imply a new syntax based on change and multi-order. Semantic procedures now were not only for shaping referents, but also cross mechanisms, manifestly showing the interdependence of concepts. In pragmatic terms, a set of inferences, based on the assumption that the reader no longer had physical pages which progressed but rather a screen on which various

3 Jay David Bolter, *Writing Space, The Computer, Hypertext and The History of Writing* (Mahwah, NJ: Lawrence Erlbaum Associates, 1991).

4 Jakob Nielsen, *Hypertext & Multimedia* (Boston: Academic Press, 1990).

5 George P. Landow, *Hypertext: The Convergence of Contemporary Critical Theory and Technology* (Baltimore: Johns Hopkins University Press, 1992), 2.

systems of information were being updated, established a new pattern for reading and for the way information is presented. With hypertext, the habit of multicursivity in reading becomes patent.

The fact that these mechanisms are so present in this digital era should not blind us. It must be said that neither the artifice of hypertextuality is completely new, or necessarily associated with computers, nor have the old rules of the communication game and of thought organized by language really been reversed. Instead, they have been ratified and given new potential within the same framework. The most pertinent analyses of the topic therefore appear to postulate the need to understand the reorganization of reading mechanisms and their possibilities, without creating a new dichotomy between past and present, and between the linear and nonlinear. Walter Ong, for example, has pointed out that the revolution of the digital era is the continuation of a tradition begun many centuries ago, in which the organization of signs used in social life into words, not only written but also spoken, and images, had become devices for the mobilization of ideas.⁶ Espen Aarseth also stresses the fact that a definition of hypertext cannot be established on the basis of the support, but rather on that of the interrelation between text and user (That is, in the pragmatic situation). In this respect, it could be said that the notion of hypertext goes back as far as such ancient books as the *I Ching*.⁷

Actually the hypertext experience and nonlinear reading is nothing new. The linear organization of texts was conditioned by the support, but this in itself is pragmatic. Printed or handwritten texts have always managed to build hypertextual nodes when they have been necessary. For instance, the illustrations in medieval manuscripts expanded referential and interpretative relationships, and the *exegeses*—the notes explaining or interpreting the *diegesis*, or text—became extensive. The connecting thread of a discourse and its fragmentation, or the consciousness of being able to fragment it so as to produce multiple routes through the text, already had, for a long time, been present in the consciousness of writing. The book shown in figure 1, from a German library, is a chronicle of world history written about 1595, in which there can be multiple reading routes because, although historical facts may be chronologically linear, their importance for thought is not because time is not linear for consciousness.

The mechanisms of hypertextual organization, with leaps not only within the order of a discourse but also from one discourse to another, also have been developed in almanacs, encyclopedias, and newspapers. This experience of nonlinear reading already existed, and its presentation on computers obeys pragmatic conditions relating to the reader—the very same reason why the above-mentioned genres came to be organized in that way. Even in books, the exegeses or explanations of the text have been normalized within the structure of the page into what we know as footnotes, to

6 Walter Ong, *Orality and Literacy: The Technologizing of the Word* (London and New York: Routledge, 1993).

7 Espen Aarseth, *Cybertext, Perspectives on Ergodic Literature* (Baltimore: Johns Hopkins University Press, 1997).



Figure 1
A Chronicle of World History,
 written on strips of paper which cover events
 from the Creation up to 1595.⁸
 © Copyright 1993 by Dorling Kindersley and
 the British Library Board.

8 Karen Brookfield, *La Escritura* (Madrid and Buenos Aires Biblioteca Visual, 1994), 29.

9 Bruno de Vecchi, *El Hipertexto y su Lenguaje. Afternoon de Michael Joyce y Rayuela de Julio Cortázar, un Estudio Comparativo*, Master's Degree Thesis, (Mexico City: Universidad Iberoamericana, 1998), 143.

10 de Vecchi, *El Hipertexto y su Lenguaje. Afternoon de Michael Joyce y Rayuela de Julio Cortázar, un Estudio Comparativo*, 148.

which the text refers. This operation now can be done on the screen, so that a node can not only refer to a source but actually put us directly in touch with said source—the computer on its screen does what was indicated as a necessity in the book.

In a study of hypertext comparing the work *Rayuela* by Julio Cortázar with an electronic novel *Afternoon* by Michael Joyce, B. de Vecchi shows that both “codex and computers are capable of adequately managing linked nonlinear structures.”⁹ In terms of writing, therefore, the nonlinear allows for one kind of experience, an experience which already existed before the computer, but this does not take the place of linear writing or cancel it out. “Both forms can continue to coexist since, although there are those who argue that multimedia and interactivity alone will survive into the future, the writer believes that pure text also will have a place while there are still those who have something to say in this form”¹⁰ and that the possibilities of nonlinear literary writing have yet to be explored.

The linear or nonlinear character therefore is not definitive under these circumstances; it is only a pragmatic determinant of the way in which a text can be approached, one which defines certain specific rules of syntax. But this is not all that determines the reading experience; there also is its semantic character, where its link

with opinions and thoughts also are displayed. This distinction has to be made because this is how signs, words, or images lead to cross-references and relationships, point to universities and encyclopedias which are available on-line (as can be seen in the case of metaphors) and within one text, even a linear one, these can be developed, so linear or nonlinear organization becomes simply a circumstance of format. In fact, linear writing cannot be confused with linear thought (if we hold this to be a viable metaphor, which often is the case in postmodernist thinking, and if we believe that just because a text is nonlinear this is something cognitively new, all of which is open to doubt). Actually, the structure of thought can be shown by establishing the relationships between things. Complex thought, with multiple cross connections, can be expressed in both structures, since the circumstances of format and the order in which it is set out must be adapted to conditions of expression and, more specifically to the needs of speech. Thus, and this is decisive for contemporary design theory, the mere fact that the format of a text is nonlinear, or that it is a digital hypertext, does not imply that it is based on open or complex thinking. Judging by many existing electronic pages, the use of multimedia or nonlinear devices sometimes only serves to present highly conservative thought processes or mechanisms for different readings and associations that are really quite insignificant. This is the case of some encyclopedias, where the addition of sound or movement to certain definitions does little to improve the understanding of the concept and even less to overcome the cognitive "limitations" of the older methods. The capacity for storing data in a compact, portable device is certainly decisive, but the layout of the parts and the semantic links of the signs would require setting up special rhetorical conditions in order to use the possibilities of discourse to their full potential.

Some texts in linear format may contain complex thinking; the signs within a text may be, in themselves, the result of the mobilization of different places and encyclopedias. An example of this can be found in the work of the Brazilian writer João Guimarães Rosa. Here every paragraph, every structure, every word, even every sound, is the result of a complex mechanism of association between different cultures, different literary traditions, and different languages (the author studied more than fifteen in order to construct his work, and also used other dead languages). Rosa used these associations to set the voice of the narrator "in a world whose center was a piece of writing such as the *Popol Vuh*, with referents that were inaccessible to the Western reader,"¹¹ and even to point out the impossibility of the reader's ever being able to access such a totally distinct vision of the world. Valkiria Wey, who translated this work, found that, in order to do so, she had to undertake extremely complex research into ancient forms of thought and expression. Thus, although one reads Rosa linearly, the semantic-syntactic experience requires one to follow a variety of planes, demonstrating that

11 Valkiria Wey, "Prólogo" João Guimarães Rosa, *Campo General y Otros Relatos* (México City: Fondo de Cultura Económica, 2001), 15.

the cross-connection of concepts and structures, established in theoretical discourse on the nonlinear, also is present in texts of this kind. This shows that there can be multi-cursivity without the computer screen, and that it would be better to say that the computer screen makes this type of experience metaphoric.¹²

Such mechanisms were identified by the theorists known today as the first postmodernists and deconstructionists. Studying writing as something that had been organized linearly and with the idea of challenging the apparent causal mechanism sustaining it, they proposed that a text really could be seen as a framework that holds various fragments and paths, and that the notion of nodes and connections was more appropriate to describe the experience of reading (in which case, an imposed order would be a form of control and power). Michel Foucault, in *The Order of Discourse*, had shown that the organic hierarchical organization of thought imposed by books was a way of translating the order of social hierarchies into actions (such as that of teaching and access to knowledge).¹³ This is fundamentally true, and it explains the rise of rhetoric. But once one is aware of the random nature of the order within the framework, then it becomes possible to move the places involved. Other authors such as Roland Barthes¹⁴ Gilles Deleuze and Félix Gutari,¹⁵ or Jacques Derrida,¹⁶ began to talk of the text as no longer being a line but a network. There should be no imposition of hierarchical organization of the parts in sequence from a beginning to an end; the text and the signs should be seen as products of other sequences, other books, or other discourses. These new theories pointed the way to what would later be achievable by “browsing” on the computer. In *The Archeology of Knowledge*, for example, Foucault said that “the frontiers of a book never are clearly defined despite its apparent linear flow, since it lies within a reference system of other books, other texts, and other phrases; it is a node in a network.”¹⁷ And Barthes, talking about literature in *S/Z*, points out that “the unique text is not the (inductive) point of access to a model, but rather one entrance to a network with a thousand entrances. To take this entrance is to spy in the distance, not a legal structure with norms and deviations, a narrative, or poetic law, but rather a perspective (of fragments, of voices coming from other texts, from other codes).”¹⁸

The deconstructivist image of reading revealed that, in spite of its apparent linearity, fragments of text (Barthes’s *Lexias*) are crossed by other lines, and so even within linear discourse one connects to a network. These ideas would be put into practice on the computer screen, and not simply interpreted in hypertext. What can again be seen as important is the nature of the places, topics, and units of opinion as the only way of approaching the nature of the route through the discourse, because they actually do establish a network. Deconstructivist theory was based on the idea of “scattering the text rather than gathering it.”¹⁹ Thus, Deleuze and De

12 Rosa sets out a multiplicity of layers behind each word and each syntactic structure. This can be fully appreciated in his novel *Grande Sertão: Veredas* or in his collection of short stories *Primeras Estorias*. Some of his narratives even include images created by the author himself, which add other levels of meaning. Thus, structures of ancient myths, medieval romances, archaic language, Latin constructions, and word neologisms are superimposed in a single synthesis. Some authors suggest that his narrative forms could be analyzed as if they were palimpsests, surfaces used more than once, and this form might also throw light on the hypertextual experience. For a study of these works, see Mary Lou Daniel, *Guimar es Rosa: Travesía Literaria* (Rio de Janeiro: José Olympo, 1968).

13 Michel Foucault, *El Orden del Discurso* (Barcelona: Tusquets, 1987), 18. This work has been published in English in “A Discourse on Language,” *Archeology of Knowledge* (New York: Pantheon Books, 1972).

14 Roland Barthes, *S/Z* (New York: Hill and Wang, 1974).

15 Gilles Deleuze and Félix Gutari, *Rizoma* (México City: Premiá, 1983).

16 Jaques Derrida, *Of Grammatology* (Baltimore: Johns Hopkins University Press, 1997).

17 Cited in de Vecchi, *El Hipertexto y su Lenguaje. Afternoon de Michael Joyce y Rayuela de Julio Cortázar, un Estudio Comparativo*, 39.

18 *Ibid.*, 18.

19 Roland Barthes, *S/Z*, 19.

Gutari's *Rizoma*, or Derrida's *Gramatología*, and even Eco's *Open Work*,²⁰ broached the idea of open reading, of polysemia, of a galaxy of significance instead of hierarchical and stable sequences. This idea, which was based on a reinterpretation of rhetoric (the proposal that unique truths do not exist only places arranged within different argumentative structures), became extreme when it not only questioned the idea of a text having a fixed meaning, but even suggested that language was autonomous with respect to the intentions of the speaker and that, as Derrida said, "given that it does not refer to anything, it does not mean anything."²¹

Thus, the Derridian deconstructivist idea suggested not only that a text had several levels, or that there were many different readings of it possible, but that it was not a clear way of communicating anything, that each path through it was individual, and that its meaning was a kind of infinite drifting. Not only would such an extreme imply, as it has been said before, the non-observation of the devices established by places in the way opinion was made up (which grant social power to discourse) or of the dialectic nature (which cannot be reduced to the linear /nonlinear dichotomy) of, for example, metaphors it also would generate an absolute irrationality that would do little to improve the situation which gave rise to this criticism of purely logical or rational discourse. Extreme deconstructivist theses seem—as Alejandro Adán says—to be a return to Pirronism, the extreme form of skepticism dating back to the ancient Greeks.²² The rise of hypertexts, however, led to discourse of this kind within design theory, and seemed to be taking over all discussion during the eighties and at the beginning of the nineties.

The deconstructivists' stance and their thesis on opening up and interconnection within the reading process have led to the new approaches in today's media. Their capacity to show that topics and arguments are changing and can be reorganized, and the idea that inter-textuality is a dynamic process which is always there, has given rise to an image which is characteristic of what happens on the digital information network. Nevertheless, the deconstructivist discourse, which was very highly thought of during the early digital explosion, became excessive, generating a purely symbolic image that tried to bring about a break with the past by affirming total irrationality. For the deconstructivists, writing is said to be drifting, a kind of apparently erudite concatenation of (not always well-founded) ideas: this idea tried to set itself up as the new model. The dichotomies between linear/nonlinear, chaos/order, construction/deconstruction, seemed to set innovative parameters for interpreting the new circumstances. But very quickly, numerous fallacies arising from this new fashion also became evident. For example, a case known as "The Sokal Affaire" showed up the crisis of post-modern discourse. This conflict took its name from an article entitled "Transgressing the Boundaries: Toward a Transformational Hermeneutics of Quantum Gravity" which was sent to the journal

20 Umberto Eco, *The Open Work* (Cambridge, MA: Harvard University Press, 1989).

21 Bruno de Vecchi, *El Hipertexto y su Lenguaje. Afternoon de Michael Joyce y Rayuela de Julio Cortázar, un Estudio Comparativo*, 41.

22 The relationship of the deconstructivist model with ancient Pirronism, which was one branch of the philosophical skepticism of the ancient Greeks, has been suggested by Alejandro Adán in "Una Lectura en los Márgenes de Derrida. Escepticismo y Deconstrucción," Egián de Vidrio, *Revista de Filosofía* 1 (Spring 2000) On-line text at www.artea.com.ar/egipan/9.htm

Social Text in 1995 by a physics professor at New York University, Alan Sokal. The text was written in postmodernist style and contained numerous quotations from Derrida, Deleuze, Kristeva, Lacan, Lyotard, etc. *Social Text* published it a year later, and it was praised by the intellectual community. But then, in a subsequent article, Sokal himself said the text was a parody intentionally constructed so as to expose certain fraudulent facets of the literature of the day in cultural studies.²³ This whole business showed up the mythicizing of the deconstructionist discourse, exposing the large dose of charlatanism involved in postmodern literature. Later, in *Fashionable Nonsense*, Sokal went on to analyze the case and to reveal that many postmodern authors use scientific concepts in an inadmissible way, such as “(1) holding forth at length on scientific theories about which one has, at best, an extremely hazy idea; (2) importing concepts from the natural sciences into the humanities or social sciences, without giving the slightest conceptual or empirical justification...; (3) displaying a superficial erudition by shamelessly throwing around technical terms in a context where they are completely irrelevant...; and (4) manipulating phrases and sentences that are in fact meaningless...”²⁴

Nonlinear reading processes and digital information systems thus brought out numerous theoretical paradoxes and contradictions so, in order to understand the nature of design in the digital media, we should start off from more careful foundations. For example, it could be said that:

- 1 Because of their semantic mechanisms, both texts and hypertexts present both unidirectional and multidirectional possibilities;
- 2 The organization of parts, in the case of the book, obeys the need to fit thought into the order available in that format (the needs of the *dispositio* —arrangement of ideas—and *elocutio* —expression of ideas—in that pragmatic situation), whereas in hypertexts the same need (semantics and order) obeys its own situation with respect to the reader (who, when faced with a computer screen which provides for alternation must decide on a significant order);
- 3 Nonlinearity is not exclusive to computers, being a very old resource; and,
- 4 Nonlinearity does not necessarily imply open thought processes.

The new technological tools for reading are really meta-media, and they have not, as this apotheosis of tools would have us believe, in themselves revolutionized thought. The problem still lies in terms of cognitive processes and in the way pragmatic inferences are displayed, that is to say in the rhetoric of the discursive proposal. The novelty then is in the speed of information, in its profuse availability, in the possibilities offered by tools which allow one to generate, mix, and interconnect different textual material, icons, and

23 Edison Otero, “El ‘Affaire’ Sokal, el Ataque Posmodernista a la Ciencia y la Impostura Intelectual”, in *Estudios Sociales*, Chile, No. 100, 2nd Quarterly, 1999. This reference was taken from the on-line version of the text at www.physics.nyu.edu/faculty/sokal/otero.html.

24 Alan Sokal and Jean Bricmont, *Fashionable Nonsense*, taken from the on-line version of the text at www.nytimes.com/books/first/s/sokal-nonsense.html.²⁵ Espen Aarseth, *Cybertext, Perspectives on Ergodic Literature*, 8

sounds, and in their capacity to produce new metaphors relating to experiences that were not possible with books.

The position of authors such as Espen Aarseth and Richard Lanham, for whom the network or labyrinth does not imply a break from previous media, but rather a diversification, therefore is appropriate. Aarseth, for example, sees the division between the linear and the nonlinear in this limited sense, because he suggests that the book opened the way for nonlinear texts (which no one denies). He further proposes “going back to the double meaning (unidirectional and multidirectional) of the word labyrinth, so as to be able to analyze the very different literary labyrinths, and to analyze unidirectional and multidirectional texts using the same theoretical framework.”²⁵ Arguments and the way they are organized are adapted to fit the circumstances. The linearity of oral discourse does not arise from a reductionism of thought, but because of the nature of the human body and voice. In books the factors of printing and format have encouraged the organization in parts so as to favor its adaptation to the readers (who, in addition to those ideas made explicit in the book by quotations and references, also interconnect other ideas themselves on the basis of the text). Linear discourse takes on this form because delivery is over time, and not because the thought is narrow or one-dimensional. In the case of hypertext and multimedia, it is the diversity of paths and codes that, with their own organization, produce their own adaptive circumstances, assembled in the system of links into the configuration of an organic whole. Nevertheless, in all cases, the main point is to produce an argument for the reader.

The analysis of contents cannot then be substituted by a mere description of the functioning of the format or the technology. Nor can the instrument be made more than it is. The medium does not make the message; it is only one of its dimensions. On the same lines, Lanham maintains that humanities and rhetorical systems can be what give coherence to the image of dispersion generated by information networks. Nonlinear hypertexts are still built up from fragments of linear text and what is now needed is a capacity for writing in multiple circumstances and across various disciplines. The teaching of rhetoric provides an indispensable basis for this capacity, because comprehension and knowledge through electronic images, words, and sounds call for a further reactivation of the processes of invention, of layout, and of eloquence appropriate to an era which is dominated by hypertext. Lanham also goes back to the over-determinism of technology, since, as this work has been arguing, “technology does not control, but rather follows, the *Zeitgeist* (the spirit of the age).”²⁶

The central aspect for understanding the new media and the role that design and writing play in them must then be the argumentative situation specific to digital communication, where its discursive mechanisms come from. Many designers now create Web

26 Richard Lanham, on-line interview on *The Electronic Word*, www.vispo.com/writings/essays/lanhama.htm

pages, so they have to assimilate interpretative rules arising out of hypertext and the possibilities of multimedia. What happens on an electronic screen and how do its rhetorical mechanisms work? Let us look at the question using the following points:

1 A Web page is established as a hypertextual browser, where there is no linear sequence, but rather a diagram of possible paths. Hypertext can be described as “a system of accessing textual data in which the data is understood to be stored in no particular sequence. The data must, of course, be stored in an orderly manner, but this order is not intended to influence the order in which it is accessed. The data is accessed sequentially, but the sequence is determined by the end-user rather than by the original author.”²⁷

2 The system of access generates free mobility up to certain point, since the order of the parts and their contents are prearranged by the author. In this sense, the layout of the parts offers an outline of possibilities, and the nature of this outline constitutes an argumentative element, because it represents the way in which a topic can be approached, or how it is intended to be thought about or experienced.

3 Hypertexts are presented as a matrix of possible accesses, but their parts are developed, in turn, using linear texts and possible interactions with fixed or moving images or sounds. Traditional editorial features of reading are not suppressed, but rather take on greater force: typographies and the metaphorical value granted to the order of thought are maintained as decisive instruments of discursive organization. The same applies to grids, columns, and headings: the architectonic metaphor and the idea that the underlying organization of a page symbolizes the order on which its reasoning is based (as happens in classical canon) is redeveloped. Web pages are presented according to the metaphor of the portal; the beginning of the journey (the starting point) is thought of and “iconized” as “home.” This layout is set within a frame, the classic format of Western culture. The layout of browsable spaces thus is configured as an inhabitable space with various possibilities in terms of size and content. Each page refers to a certain environment, and navigation through this virtual territory is like a trip through an architectonic space. Not only are the metaphors traditional to the organization of texts not suppressed, they are even highlighted, their possibilities being greater.

4 In order to navigate within the text, readers make a series of inferences. These inferences are based on the established rules of the screen. In the first place, they know that the content of each electronic page is presented within a wider context, and that it can vary with the choice of different links, which can be identified by words

27 B. Ingraham, T.Chanier, et al, “Language Training for Various Purposes in Several Languages on a Common Hypermedia Framework” *Computer and Education* 23:1/2, (1994): 107–115. On-line at www-jime.open.ac.uk/00/ingraham/ingraham-07.html.

whose color changes or by sensitized icons. The assumption is made that each of these choices can lead one to another “window” (a metaphor which also uses the iso-morphism between houses as architecture and the screen as a system for navigation). The comprehension of the text depends both on the routes offered and on the assumptions made by each page as to the behavior of the reader, who is accustomed to making these choices. The Web page does not contradict the codex format; it reorganizes it in terms of the electronic presentation. The order of a book (beginning, chapters, and end) is restructured in terms of a new pragmatic situation, but the portals or windows are still thought of as “pages,” and they share many of their traditional aspects.

5 The hermeneutic experience of navigation is driven, in the same way as with other formats, by the search for significance. Any link or any window, one infers, will have something to contribute. The dimensions in which the electronic page moves, the nonlinear structure of its parts, the interactivity, and the multimedia are only pertinent insofar as their existence contributes to cognitive production. If the pragmatic or thematic context offers information that can be assumed implicitly, then the explicit must be significant. This, besides being a rule for reading which is pertinent for languages in general (for example, in the cinema this idea allows one to pare down narrative systems which are set up on the basis of moving images and alternating planes), is something which highlights the problems of redundancy. All reading depends on the continuance of elements of redundancy (we get used to the characteristics of navigation, and to the logic of links, just as we recognize the guidelines that define a topic). At the same time, the readers’ interaction with the statements is determined by the contribution that different parts of the page allow them to discover. If, for example, we find an “entry” in a traditional encyclopedia with a satisfactory definition, on the Web page this definition might be accompanied by a moving image or a sound. But if this additional material does nothing to enrich the comprehension of the term, and is redundant for such comprehension, then the rhetoric specific to hypertexts has not really been understood or assumed. Many Web pages are developed with the idea of traditional reading in mind, without understanding of the inferential rules specific to hypertext. The prerogatives of significance, and even more of clarity, define one of the rhetorical principles for the production of hypertext (that with the incorporation of movement and sound the rules of oral rhetoric are needed more than those of the written word).

6 The hypertext format then, like other languages, sets its rules of interaction by optimizing the possibilities of electronic operations with respect to the nature of thought, memory, attention, and mobility (in this sense, the rules for hypertext reading are rhetori-

cal). As Bergson has pointed out, a person's experience develops linearly in time, but memory and mind are not linear, since they set up links between different planes.²⁸ The discursive languages and productions designed will take advantage of these circumstances in a sophisticated way. Web pages act in this way, molding themselves to the working of the mind, and even, we might say, metaphorizing its operations. For example, if the mind sets up associations and is able to analyze a concept on different planes or scales, the Web page can emulate this mobility and bring it onto the screen, establishing different dimensions. This is rather similar to what is done in film montages, only that here it is in relation to our experience with the Web page. Furthermore, the contribution of preestablished devices in other graphic genres, such as the identity image, editorial composition, and informative or argumentative images, will follow the same cognitive guidelines they have always had, and new ones also will appear. For example, one of the novelties of digital discourse is that it makes it possible to metaphorize new (non-textual) situations that have not previously been experienced in written texts. The electronic screen can, for instance, metaphorize the working of:

- a. An appointment book
- b. A book
- c. An encyclopedia
- d. A newspaper
- e. A visit to a store
- f. The experience of a reader looking for specific material in a bookstore
- g. Carrying out operations in a bank
- h. A visit to a museum
- i. A photograph album
- j. An institution's organizational chart
- k. A magazine
- l. A map
- m. A city tour
- n. Hi-fi equipment, and so on.

This implies a universe of unknown possibilities, but insofar as each of these experiences is built up as a situation which depends on a set of specific determinations, the Web page or the hypertext has to construct the metaphors in the appropriate way so as to replace said experience and extend it to its full potential. This is why it needs rhetorical organization, and why it is significant as a product of design. One good example of this is the Web site Amazon.com. This site reproduces the experience of someone visiting a bookstore. It is, in fact, (or attempts to be) better than conventional, physical book selling systems because not only does it show the covers and descriptions of books, but it also refers to other books by the same author, to comments by those who already have bought and read the text shown, and even to other books bought by its

28 Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness* (New York: Dover Publications, 2001).

readers and other books related to the topic. A Web site designed such as this enters into the experience of the people accessing it and into the multiple determinations that lead them to look for something, improving on what they could have done physically at a bookshelf, and thus contributing to the enrichment of the experience and individualizing the organization of consumption.²⁹ The rule for setting up these experiences would be that of the progressive metaphorizing of the actions and thoughts involved in the specific situation, and the appropriate organization of this within the navigation system.

7 The electronic page, then, has a series of devices for helping navigation and for building the experience. These devices are rhetorical insofar as they come from an *Inventio* (discovery of ideas or arguments) based on places. (The notion of place becomes crucial again because, as was held by ancient rhetoric, places are starting points for discursive action and they define the orientation of the argument. In Web pages, these “places”—in the metaphorical sense of the old concept — actually become physical places once more, since they are displayed in windows.) These places also are organized using a *Dispositio*, or Arrangement (the laying out of parts is, for designers again, a facet which is explicitly considered to be decisive) and a strategy for *Elocutio* (the way the ideas are expressed), with metaphorization and clarity which undoubtedly are necessary. As Ingraham, Chanier, and Emery point out, the access strategies based on this matrix have been developed for navigation in so-called cyberspace and include “variations in font, color, size, or face to signal possible hypertextual links or various search algorithms to provide still more open linking. Similarly, a variety of menus, maps, and labeling systems has arisen to preserve one’s orientation within a particular hyper-information environment. These emerging navigational strategies and tools are analogous to the use of italics, brackets, quotation marks, and so forth referred to above. They are “extra,” or perhaps “supra,” textual rhetorical markers that can serve to advance an argument, or at least place it within the wider discourse.”³⁰

8 As to icons and punctuation and navigation systems on the page, digital reading processes have reactivated an awareness that the marks that direct reading take on visual forms in order to facilitate and contribute to the delivery of the discourse. In classical times, letters and punctuation marks were visual devices used to emulate the flow of oral discourse. Periods, inverted commas, question marks, exclamation points, commas, and spaces between words or between paragraphs were visual marks which first were used intuitively to show the advancing delivery. This has been extensively studied by Lupton and Miller under the history of punctuation. These authors support delivery rather than a grammatical

29 The idea of individualizing consumption as a new frontier in marketing in the contemporary age offers new aspects for the study of, and approach to, the public. These ideas can be seen in authors including Fuat Firat, who has even proposed the existence of “radical marketing” on the basis of the new tools. See *Philosophical and Radical Thought in Marketing* Fuat Firat, Richard P. Bagozzi, Nikhilesh Roy Dholakia, eds. (MA, D.C., Heath; Lexington Books, 1987).

30 B.ingraham, T. Chanier, et al, “Language Training for Various Purposes in Several Languages on a Common Hypermedia Framework,” 107-115. On-line at www.jime.open.ac.uk/00/ingraham/ingraham-07.html

origin for such systems because “such marks are thought to have been cues for reading aloud.”³¹ We have said that this rhetorical origin has turned the visual signs into something more than just the representation of oral discourse because, over time, graphical organization began to regulate them and written language became prominent. When these patterns were standardized by printing, the marks became institutionalized and, as their visual rhetoric origin, that is to say the function that intuitively linked thought with the graphical form, was forgotten these marks came to be considered as grammatical norms. Grammar made use of them in establishing normative structures for language, but they came not from the adaptation of the morphology of words but from the adaptation of the needs of elocution to those of readers. Grammar, as rational discourse on language, imposed itself on rhetoric, but had its origin in it. With digital discourse, however, the elocutionary productivity of visual signs for the reader is reactivated and the path established by rhetoric for early punctuation is once more important for the creation of marks—this time obeying the expressive needs of navigation. This is what makes one think of a rediscovery of rhetoric as the generating process that acts upon reading devices. In the same way as rhetorical action brought about early punctuation, writers and designers in the new media “have been using punctuation marks for expressive ends.”³² Thus form, color, and the different semantic operations contributed by graphics to the organization of thought once more assume a place as instruments in the building of cognition and expression. Richard Lanham in *The Electronic Word* says that “Concomitantly with the explosion of the authoritative text, electronic writing brings a complete renegotiation of the alphabet/icon ratio upon which print-based thought is built.”³³ This was fundamentally the crucial discovery for Macintosh, the understanding that the digital universe would modify the traditional course of thought organized on standardized alphabetical signs, and that icons would reemerge as an appropriate means to a new punctuation. This phenomenon, in turn, reminds one of the role of commonplaces in the construction of discourse. On the computer, figures which are used for interaction such as a home, an envelope, a trash bin, a magnifying glass, a file, a loudspeaker, a musical note, a camera, arrows, a pencil, and a paintbrush regularly appear, and these embody the presence of places in our understanding of the discourse—they are commonplaces made graphic. If commonplaces referred one to proverbial and commonly accepted knowledge, this “proverbial wisdom, for example, becomes visual. Digital expression has resurrected the world of proverbial wisdom, but through vast databanks of icons rather than words. We buy what are, in effect, catalogs representing commonplace situations and appropriate responses to them: faces, hand gestures, and signage of all sorts. The traditional dependence on commonplaces in rhetorical education has been transmuted from word to image.”³⁴ These mecha-

31 Ellen Lupton and Abbot Miller, *Design Writing Research* (London: Phaidon Press Limited, 1996), 35.

32 *Ibid.*, 39.

33 Richard Lanham, *The Electronic Word: Democracy, Technology, and the Arts* (Chicago and London: University of Chicago Press, 1994), 34.

34 *Ibid.*, 37.

nisms, which refer to the capacity of manifesting the role of places in text, also revive the ancient figure of speech known as *ecphrasis*, which refers to the descriptive capacity of certain signs for illustrating concepts. If the object of *ecphrasis* were to update a common concept using an image, this would describe the way the new icons work. (Lanham defines *ecphrasis* as talking, dynamic pictograms.³⁵) This also goes back to the traditional opposition between alphabetic and ideographic writing, on which the canon of the book was built. This opposition must be renegotiated, taking into account the cognitive role of images.

9 With these devices, the reading experience via Web pages becomes dynamic. Their constructive foundation, however, is based on the cognitive coherence supplied by the situations that are metaphorized and by their pragmatic needs. Alphabetical writing does not disappear, but its rules change because a new kind of textual organization becomes necessary on the screen. The need for constant movement on the screen, together with the needs of the reader who can only look at an electronic text for short periods, mean that texts must now be written in terms of brief packages of information. The abbreviations within the reading process generated by icons and the constant resource of the possibility of interaction call for the permanent availability of links. In this sense, writing and icons are adapted to the ergonomic needs of the user at the screen. This makes certain experiences leading to the constant mobility of thought possible. Intelligent page design consists of finding how to develop a possibility on the basis of an understanding of the particular reading circumstances. Jakob Nielsen, in an attempt to identify the character of the rules for reading on Web sites, points to the following as examples of errors: (a) understanding web pages to be simple pamphlets rather than a new way of organizing the work of an institution within the economy of the Web; (b) designing interfaces to reflect the way in which an organization is structured, rather than reflecting the users' information needs (inconsequent design); (c) thinking that the page should be "attractive" before thinking of the way in which one must travel through the information; (d) writing in a style which is inappropriate for the Web, where users are used to looking for the essential at a glance; and (e) offering a closed view of the site, as if it were the only important one, instead of setting up links to other sites, using well-structured entry points (which is one of the expectations of reading in this format, the possibility of continually linking to other related interest centers).³⁶ These observations allow one to see the nature of actions made possible by Web page discourse. On the other hand, it is not so easy for Web pages to do what a book does with a long discourse. At one time, it was thought that electronic writing would completely substitute the codex format, just as it once was thought that cinema would displace theater or photogra-

35 Ibid., 34.

36 "Usabilidad y Desempeño de los Sitios Web," *Revista Espacios* 4:21, México, Diana Cárdenas de Ghio ed. (2001):13. This article is based on Jakob Nielsen, *Designing Web Usability* (Indianapolis: New Riders Publishing, 1999).

phy, or painting. Actually, the new media are not substitutes for earlier ones; they contribute new resources that must find their own rules. In this sense, rhetoric provides an epistemological basis just as in the other cases (precisely because it is a discipline which reflects on the possibilities of delivery in different contexts, and it can be seen that discourse is based on comprehension of the communicative situation and of the audience). The exaggerated hypothesis that, with the coming of computers, books would disappear so far is still unfounded. There has been a great increase in the number of Web pages, but the production of electronic books has been held back. Readers of discourse in these different formats (which fulfill needs which cannot be met by electronic pages, and vice versa) refer to each of the reading processes in the corresponding format. Many publishers therefore have decided to suspend publication of electronic books, because each of the media has its own possibilities and conditions, and it seems that both forms will continue to exist side by side. The Web page is not, therefore, a substitute; it generates another kind of experience, another kind of metaphor for human action.

10 The Web page as inserted on the Internet must not then be thought of in terms of Beginning—Development—End, but rather using the idea of Opening—Accesses—Closing. In this sense, the traditional notion of *Dispositio*/Arrangement is displaced by a new framework, but order still remains important. Discursive nonlinear strategies still are structured in function of persuading the audience. A balance, for instance, between mechanisms of logos, pathos, and ethos as devices that allow one to grant character to the speaker, an argumentative logic that renders the information credible, adaptation to the conditions of the exchange, and organization that rewards the emotional participation of the audience, still regulates the structuring of the parts and the linking mechanisms. Some Web pages, for example, have had recourse to a reactivation of what in the *Dispositio* (arrangement) of traditional rhetoric was known as *Exordio*, a part destined to the introduction of the discourse to awaken the public's interest. This can be seen in the so-called "flash entries" that usually present the Web page with movements and sounds (logos or slogans build up, words are put together, and so on). But this mechanism is not used in all Web pages, and some take us straight to the information. It would seem that, if we adapt to reader's expectations that the Net should serve as an active and fast way to seek information, these entries are superfluous, unless the introduction effectively enriches the reading or the understanding of the content. The Web page demonstrates its character on the basis of the atmosphere produced and the links it allows for. This structuring can be thought of rhetorically if one is aware of the conditions it needs to fulfill. Some researchers into the rhetoric of Web pages have precisely thought of these structures according to their

conditions of persuasion. For example, Orujo Millon points out that “writing for the Web has its own unique rhetorical devices. The use of hyperlinks, for example, affects the overall visual impression of a Web document, the bits of colored text adding credibility and suggesting further avenues of exploration, thus adding depth and authority to the document.”³⁷ Thus, an intelligent navigation system demonstrates the credibility due to the institution or person it represents, and therefore would be a decisive instrument of persuasion. With the atmosphere and the navigation system, the character of the orator is felt, and a style is adopted; the links and the interactive proposals speak of the culture supporting the discourse, as was proposed in classical rhetoric such as Cicero’s. Thus, in the art of Persuasion, Arrangement, Invention and Style were talked of as objects upon which the strategies of discourse were built, and electronic pages are organized according to these principles.

The hermeneutic experience at the computer screen which has been analyzed here shows, on the one hand the continuity of the discursive principles which were set out from classical days and, on the other, the extension of these principles into unknown situations within the written and graphic print tradition. One can speak of the digital revolution in the sense that new ways of reading, education, and communication have been opened, but it is also necessary to understand that these are based on a deepening of previous habits of persuasion. The reordering of these possibilities gives the *raison d’être* to design as a vehicle of reflection and production for these innovations. Nevertheless, if the traditional order of discourse was held to impose a kind of power on the basis of the hierarchical organization of thought (the idea on which the criticism about the linearity of discourse is built), it must be said that with this new nonlinear, multi-access order, the power and control have not disappeared but rather have taken on new forms. Among the precursors of postmodernism the need to transgress had been turned against linear structures, and the central theme was control arising from the hierarchization of the parts. Foucault said that “in every society the production of discourse is controlled, selected, and redistributed by a certain number of procedures whose function is to ward off power and danger, dominate random happenings, and evade their powerful and frightening materiality.”³⁸ Something similar can be said about the digital organization of information, which in its nonlinear form has expanded the realm that grants discourse its persuasive power and its capacity to generate social action, especially since its expansion globally. Many people these days consider that organizations registered on the Internet are vouched for on the new information scene, and their presentation and organization on the Web are new ways of obtaining credibility (which is why they must be seen as subjects of rhetoric). In this sense, nonlinearity is not neutral nor does it reduce the sense or desire to conquer, but rather it reinforces it by bringing a metaphor onto the screen which is, in turn,

37 Orujo Millon, “The Rhetoric of Hypertext”, (1999) on-line text: www.quaypress.com/creativecontent/rhetoric.html.

38 Michel Foucault, *El Orden del Discurso*, 29. The English version is “A Discourse on Language” in *Archeology of Knowledge* (New York: Pantheon Books, 1972).

equivalent to the modern order of things and the rules of economics. Just as cities no longer have only one center but many (mainly commercial centers that, in many ways, in part or wholly reproduce the same order), electronic pages on the Web also show this multi-centrality, symbolizing in this way their adhesion to the new economic and social order. The theses which suggest irrationality or purely technocratic discourse do not allow one to see the role played by these new events, even though they exist, especially the social events present in this process. As De Vecchi points out, “the debate on the book versus the computer is not always approached from a neutral standpoint because behind it lie all kinds of interests, behind each kind of media there are several industries which have something to lose. Probably this is why discourse so often has been seen on a merely technological level, on the level of interfaces, and almost pure ergonomics.”³⁹ That is why there is so much insistence that digital media do things which cannot be done by other media. Although this is not always revolutionary, it is often used to maintain conservatism and commonplaces—even the discourse on nonlinearity has become commonplace.

However it may be, the digital era triggers numerous reflections. Initially, these are related to rhetoric and its central role in education and communication, insofar as this used to be the art that took into account the organization of discourse and established guidelines for discursiveness. Janice Walker, for example, suggests that rhetoric’s classical canon—Invention, Arrangement, Memory, Delivery, and Style—could be drawn up anew according to the changed circumstances. Invention must be related with commonplaces because, in classical times, a common reserve of knowledge was considered to exist from which all discourse started. This communal participation in knowledge was lost with the coming of printing and the notion of authorship, which implied the idea of property over ideas, as in copyrights: places were no longer common, each author possessed his or her own place. But with global on-line writing, says Walker, “we are, perhaps, returning to a communal view of Invention as a shared ‘database’ of knowledge, in which our Western notions of plagiarism and ownership of intellectual property are called into question.... We need to reconsider both our definition of Invention and our rules of attribution as we consider how to write and teach writing in this era of global and collaborative information.”⁴⁰ On Arrangement, one must think of the new possibilities of organization offered by hypertext, and the introduction of sound and videos into the multi-ordered argumentative construction. Memory, another part of rhetoric for oral delivery (and maybe forgotten with the coming of print), in turn could be reactivated as collective memory, available on-line, since it could be built up electronically (computers reactivate the notion of memory, this time digital memory, as a decisive support for discursive participation and reading) and be located in a communal database.

39 de Vecchi, *El Hipertexto y su Lenguaje. Afternoon de Michael Joyce y Rayuela de Julio Cortázar, un Estudio Comparativo*, 145.

40 Janice Walker, “Reinventing Rhetoric: The Classical Canon in the Computer Age” (University of South Florida, 1997), on-line at www.cas.usf.edu/english/walker/papers/rhetoric.html.

Delivery, a phenomenon in which oral rhetoric relied enormously on gesticulation and expressed emotions, also could be reactivated with the participation of emotive elements (sound and images) which animate reading. Walker says, "Nonverbal elements are a very important part of communication. When we consider Delivery in the on-line world, we also must consider the types of files we are 'delivering', the protocols or software that will be necessary to 'view' or 'read' the files, and how the various elements of the on-line world, such as different browsers, might affect the presentation of our masterpieces."⁴¹ The new stylistic rules of electronic writing also must be taken into consideration, and its own norms by which its stylistic and cognitive clarity are established. In spite of the innovations and experimental procedures which are taking place through computers and their connection to the Worldwide Web, and despite the possibility of digitally manipulating information, a new canon is being drawn up, a canon that does not contradict the classical discursive sources of the Western world, but is in tune with them. And this is why R. Lanham also points out that "to explain reading and writing on computers, we need to go back to the original Western thinking about reading and writing—the rhetorical Paideia that provided the backbone of Western education for 2,000 years. Digital expression indeed fulfills the postmodern aesthetic, but also a much larger movement that comprehends and explains that aesthetic—a return to the traditional pattern of Western education through words. We are still bemused by the three hundred years of Newtonian simplification that made "rhetoric" a dirty word, but we are beginning to outgrow it. Digital expression, in such a context, becomes not a revolutionary technology but a conservative one. It attempts to reclaim, and rethink, the basic Western wisdom about words. Its perils prove to be the great but familiar perils that have always lurked in the divided, unstable, protean Western self."⁴²

41 Janice Walker, "Reinventing Rhetoric: The Classical Canon in the Computer Age," (University of South Florida, 1997), on-line text: www.cas.usf.edu/english/walker/papers/rhetoric.html.

42 Richard Lanham, *The Electronic Word*, 51.