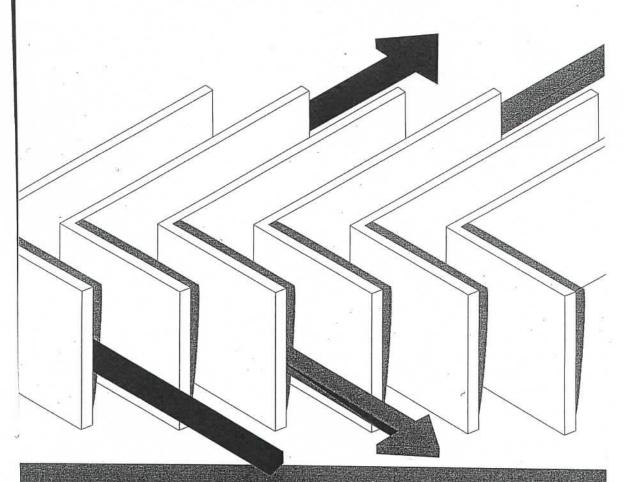
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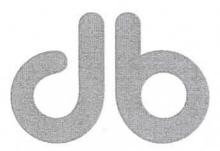
NEW APPROACHES IN TEXT LINGUISTICS

SYLVIE MELLET AND DOMINIQUE LONGRÉE



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Text and Hypertext Function, Reading, Learning

JEAN-MARC DEFAYS

University of Liège/Facultés Universitaires Saint-Louis jmdefays@ulg.ac.be

Abstract:

In this article, we begin by specifying a definition of "text" that will fit our present purpose; then, we will attempt to contribute, in the light of the demands involved in its treatment and the difficulties involved in learning it, to an explanation of its complexity, particularly its double construction, which is both linear and reticulated.

In order to do that, we will recall the conditions of its progression along the linear axis, where the reader establishes semantic, syntactic, thematic, logical and argumentative connections between words and propositions that follow each other; and the conditions of its organic composition, which allows the reader to incorporate the words, phrases and paragraphs so constituted into a global structure (sequences, parts of the text, its general structure) as a function of textual models he or she may have experienced. But we insist upon the fact that, in order for these two types of organisation - linear sequence and hierarchical inclusion - to constitute a text, it is necessary for them to be inscribed in an enunciative context and a communicative project that give the text its origin, its finality, and its function.

In view of the development of the use of New Information and Communication Technologies, we will ask ourselves to what extent these new supports, in terms of their nature as well as their modes of functionality, require or lead toward new linguistic and cognitive strategies for treatment of text, especially in learners, children and/or non-native speakers, and how these learners can perceive and construct the local and global coherence (semantic, logical,

argumentative...) of a document presented in a hypertextual form.

Key words: hypertextuality, sequentiality, network-likeness, navigation, reading strategies, cognition, literacy, didactics.

1. Introduction

It is still difficult to take the complete measure of the effects of ever-increasing and ever more intensive exposure to New Information and Communication Technologies (NICTs) - which are for all that less and less "new" - and its effect on language, its forms and uses, as well as on the conditions of production, reception, exchange, management and communication of verbal messages, especially when this concerns the texts that are the object of this

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study. On one hand, one might imagine that the passage from page to screen entails only incidental, circumstantial, superficial changes, and that the digitisation of language and text only make them easier to recognize without having any more profound effect upon their nature, with the same to be said for the various writing and reading practices they call for or give rise to. In view of this, we are indeed reminded that previous passages of this kind, to which this one is often compared - from papyrus or parchment to paper, from manuscript writing to printing, from books to magazines and newspapers, from in-person communication to telephones and radios -, did bring about significant changes in the history and the uses of language and texts. On the other hand, one might put forward the contrary hypothesis, namely that the changes induced by NICTs do not show up in the modalities of their presentation, but bear rather upon the very functioning of texts and their reading, and thus upon certain structures and principles that may be overturned. The ambition of this author is to offer a number of elements - and pathways for reflection - so as to guide a debate between these two positions, which we might characterize as reformist in one case, and as revolutionary in the other.

More specifically, our reflections will be brought to bear upon hypertext, which is probably the principal phenomenon with regard to the textual arrangements and practices via NICTs, and the questions we will ask ourselves on this subject, with an eye toward determining the scope of our research here, are as follows:

a) In relation to "classic" text (on paper), what are the linguistic, discursive and/or pragmatic particularities of hypertext as mediated via NICTs?

b) What new reading strategies or practices does hypertext bring about or lead to in the reader... or in someone learning to read?

c) Regarding those strategies or practices, what changes in the conception and construction of meaning do these differences and changes give rise to or indicate?

... the final question is to determine whether we are observing the emergence of a new kind of literacy (and thus a new illiteracy, for those who prove unable to adapt to these changes).

The present reflection, which here shall remain introductory and quite general, even programmatic, will above all focus on (as our title indicates) a didactic perspective in the midst of the complexity of questions that might be asked, among the many approaches – theoretical or empirical – that might be adapted to the study of hypertext and hypertextuality. It is by choice that we limit ourselves here to outlining (without being able to explore the details) a number of problematics, disciplines, and developments that the analysis of this new object and/or textual practice gives rise to, whose very definition is the object of debate.

2. Text and Hypertext

We will not enter into technical details but will define hypertextuality in this context simply as the technique of placing a text on a CRT screen into relation with other texts that are brought up on the screen by clicking on zones of the screen (words, groups of words, icons) that are called "hyperlinks". Thus a hypertext is a text that continuously offers hyperlinks that send the reader to other texts, whatever they may be; a hypertextual reading is the reading that activates these hyperlinks and takes into account the other texts thus brought forward. Hypertextuality is multiplied, as it were, in being divided through what we call multi-channel quality or characteristics — which are those that allow us to use different channels of communication (text, sound, fixed image, moving image) at the same time, either all cooperating in one presentation, or not, and also by multi-referential characteristics, which allow different sources of information to be displayed or referenced in connection with a given theme, in the process of navigating across the entire Web (the World Wide Web).

The use of hypertextuality appears to have provoked (this seems widely accepted) a passage from linear reading to networked, arborescent reading. The former is continuous, forward-moving, discrete (in the Saussurian sense), homogenous, normative, closed and complete; in contrast, the latter is discontinuous, circular, zig-zagging, plural, unpredictable, eclectic, free and limitless. This violation of the rules and mechanisms of sequentiality, closure or syntagmatic unity is undertaken on behalf of the paradigmatic dimension of discourse, which is brought forward (in praesentia) and placed in operation, inasmuch as at various points in such a sequential reading, hyperlinks offer the reader the opportunity to go back, to substitute one thing for another, to search for still another thing, all of which are so many bifurcations toward still other texts. One might be led to ask oneself, in the manner of the semiotic analysis of poetry, if hypertextuality does not project the syntagmatic axis onto the paradigmatic axis. In the framework of an analysis of discourse, one might think that it is actually the interdiscursivity that is constitutive of all texts, which hypertextuality separates and projects over other texts: intertextual references, reported discourse, argumentation, divergent opinions, opinions and interjections from the "reporter", for example, are not integrated into the same text - which is smoothed out, so to speak - but are exteriorised and made as references to other texts within the same system or in other textual systems. These phenomena of disintegration and projection, which obviously should be studied in more detail, contribute to this type of "patchwork" composition (which has already contaminated the layout of "paper" pages in textbooks, journals and popularizing magazines, with all their boxes and tables and diagrams, etc.) and lead to the type of centrifugal reading we will describe below.

We shall also have to take into account a large variety of types of hypertextuality, first distinguishing internal hypertextuality, which involves

being directed to other texts in a manner that is intended and expected within a single computer programme or website, which we will simply refer to as a single textual system, a glossary for example, or additional information, an apparatus criticus, problems to work out, etc.; and following this, external hypertextuality, which points the reader toward texts belonging to other textual systems "online", accessible with the help of browsers. There can also be essential hypertextuality, when this is obligatory or at least indispensable if one is to understand in the correct manner or to make proper use of a textual system, and optional hypertextuality, when the relationship between text and reader remains linear. In some cases hypertextuality is complementary, if the initial text remains a base text to which one returns continually throughout reading, and it can be called broken hypertextuality if the initial text is only a starting point, or no more than the pretext for a hypertextual reading in which there is no longer any dominant text. One could even speak of directed hypertextuality, embarked upon based on a particular theme or project, and of non-directional hypertextuality, which proceeds in whatever direction may be offered by certain sites or by browser result pages. These distinctions are given here only as a means of illustrating the variety of hypertexts or hypertextual readings that should be described, differentiated and more precisely defined.

This arborescent reading would have the advantage of allowing the reader to choose the steps of his or her reading process according to his or her needs and interests, and thus to increase the level of reader (inter-)activity, motivation, autonomy and responsibility reading. Some have put forward the hypothesis according to which hypertextuality corresponds to the mode of the neurological organisation or functioning of the human brain, and also to that of languages (the hyperlink is supposed to be analogous to the synapse), and that in any case this type of reading follows the modalities of spontaneous learning, with its associations of ideas, its varying attempts, its trial-and-error sequences, its pathways and detours, in the breakup and recomposition of data... Cognitive, linguistic, psychological or neurological sciences, whose rapid progress obliges those who construct theoretical models to revise them frequently, could soon support the analogy, at present still of a metaphorical nature, of hypertextual functioning and brain function. But even if this were to be confirmed, such similarity of modes of functioning would not prove that hypertextuality is any more favourable to acquisition, retention, mobilisation, or (re-)use of knowledge or skills, linguistic or otherwise, than is linear reading; this should be the subject of other experiments, involving mother tongues and foreign languages alike. In the meantime, we will discuss below the risks of readings, lacking coherence and depth, which are characterised by hypertextual "zapping", including a cognitive overload that has negative effects concerning the management of the power of attention and, eventually, the use of memory.

Before carrying this comparison much further, we must quickly relativise the difference between hypertexts on one hand and classic texts and reading on the other. We must insist on a plurality of "texts" and "readings", of which there are many kinds: essays, diaries, dictionaries, novels, a police procedural or a sentimental novel, etc., are not all similarly presented so as to be read in the same way, although any one text may be read in different ways, lending itself to readings that may be philological, consultative, poetic, diagonal, interpretative, critical, a learning method or perhaps a simple rereading, each of which is associated with different linguistic and/or cognitive strategies. Besides, many "paper" texts are presented in a discontinuous fashion, with quotations, text boxes, footnotes, endnotes, illustrations, etc., to say nothing of the intrinsic discursive heterogeneity (sequentialization, segmentation, envelopment...), such that these different levels and segments are comprised in a single body of text. Otherwise, a reader might practice hypertextual reading without a computer, skipping pages, going back to earlier parts, referring to notes or appendices, and taking breaks at will in order to read in several books open upon the table or to leaf through others in a library. From this point of view, NICTs only call for, amplify, and finally weave themselves into multiply interwoven reading patterns that existed before hypertextuality. So there is no qualitative leap involved in passing from paper to screen - just a technical development. By making an effort, one can practice a hypertextual reading of linear texts, just as it is always possible to proceed with a linear reading of a text that was designed to be read as hypertextual, if one is willing to make certain sacrifices.

3. Textual and Hypertextual Readings

There are numerous publications, both scientific and practical, concerning the use of NICTs in learning methods, referring sometimes to "cyber-reading". Our approach here is different to the extent that our linguist's reflection begins with the object and/or concept "text" (in accordance with positions that need not be argued here), its basic principles and its modalities of treatment (reading, writing), concerning which we shall first propose a dynamic analysis along three axes, before examining how hypertext may modify all this. In order to appreciate these effects, we will base our reflections upon several observations we have been able to make while correcting papers, essays, reports, or theses written by university students, for which they conducted research, whether or not this was suggested to them, using NICTs and all kinds of websites to which they gained access by means of NICTs. These students' use of hypertext, whether by beginning students of those close to graduation, is particularly interesting, since they represent a new generation of intellectuals (scientists, humanists, teachers...) who will acquire knowledge and skills at university, use these skills, transmit them and develop them in turn through their professional activity. Thus the question of the transmission (discussion, creation) of knowledge is raised here in a critical manner, as well as the still more essential question of the construction of meaning, which up to the present day has been handled using linear and structured texts in a manner we have referred to above. Even if the textual habits and skills of students are not always determined by such texts, we may ask ourselves if the exercise of hypertextual reading (perhaps clumsy or naïve at first), whether by reason of qualitative or quantitative differences (as mentioned above), does not in fact place the traditional practices in question, and indicate that new practices are emerging.

Placing ourselves in the situation of a reader (we could have taken the position of a listener, a speaker, or a writer), we can say that the text requires three types of operations of the reader, which are inextricably linked to one another, so much so that the reader is not aware of their difference, but which must be distinguished here in order to highlight the effects of hypertextual reading.

a) By definition, linear text (or rather, its reading) progresses from one unit, word, group of words, phrase or idea to another, like a column of dominoes set up so as to knock each other over in a chain reaction. The reader has to master the linguistic procedures that establish these chains, and by making appropriate use of them, the reader can follow or establish (according to the case and point of view) the proper unfolding of the text from its first to its last words, all of which we refer to as - without entering into the debate about this term the cohesion of the text. The mechanisms that thus place successive units in relation are well known. The procedures, morphological (simplifying: adjective > noun) and syntactic (subject > verb > complement), then semantic (semes > isotopy) and diaphoric (antecedent > anaphora) begin with the constitution of the phrase and make possible its association with following phrases; while procedures that are thematic (theme > rheme), informational (unpredictable > predictable), chronological (before > after), logical (cause > effect), argumentative (premise > conclusion) and conversational (proposition reaction > ratification) cover larger and larger units. One might form the hypothesis that the reader must be able not only to use these procedures, but also to combine them, perhaps by activating them in succession, from the most local (morphologically) to the most general.

In contrast, hypertext leads the reader inevitably to break up this discursive continuity, to fragment it: the basic textual sequentialities – semantic, anaphoric, informational, (chrono-)logicality, argumentative connection... – are broken, suspended, such that linearity itself unravels, in favour of cross-cutting thematic or occasional connections; the levels and segments of the text are disarticulated and projected onto different texts, bringing forth phenomena of cascades and telescoping sequences, with attendant risks of confusion; finally, this breakup gives rise, as we have already noted, to a smoothing out of all the texts set in a hypertextual relation, which the reader-writer has to recompose (at the cost of considerable difficulty) into a single text. If this decomposition, this delinearisation is not a problem in and of itself, is it then necessary that it ends up turning into a linear reconstruction imposed by appropriation and (re)construction of meaning in a new text? We must admit that students have a harder and harder time mastering the mechanisms and the markers for linear integration; the "cut and paste" procedure many of them like to use, without

being in itself a form of plagiarism, is too often relied upon at the expense of an understanding of the cohesion and the internal dynamic of the text.

b) But it is not enough to follow/establish these sequences in order to understand a text that is constructed at the same time it is "unrolling". In fact, on the formal level as well as on the level of content, the units of the text do not only follow each other; they also are assembled together, as in the construction of a model, each time forming units of a higher level, up until the last level, which corresponds to the totality of the text. That which we designate here as the coherence of the text is based on this hierarchical and integrative organisation which permits the text to constitute a complete and coordinated whole on the basis of prototypical models (intertextual, genotextual) that structure the text totally or structure the sequences that compose it (succession, hierarchical inclusion, alternation). The reader at this level must be able to recognize the model(s) the author is using, in terms of general structure as well as the parts, and to follow its/their implementation during the course of reading, including any modifications and transformations. The principal models of prototypical coherence are also well known - descriptive, explanatory, narrative, argumentative and dialogal - even if the question of their exhaustive nature, their linguistic, cognitive and cultural foundations, and their universality (in the sense of the Formes simples of A. Jolles) remains unanswered. These prototypical models can be declined, varied and combined in many ways, giving rise to an equal number of generic classifications. As above, we may all the same wish to ask ourselves if these models imply each other, from the smallest (the descriptive model) to the largest (the dialogal model, which can come to include all the others), and in what order the reader, expert or novice, employs them.

Here as well, hypertext risks complicating and compromising the construction of meaning to the extent it causes a de-contextualisation of the sequences the reader reaches directly, by clicking, without passing through the various stages of the organic composition of a complete text, which thus finds itself disarticulated or ignored. Brought haphazardly onto the screen by the hyperlink, the (extracts of) other texts are presented as isolated and disparate pieces from a puzzle for which we do not have a picture of the whole, like the visible tops of icebergs that are nine-tenths hidden from the view of the web surfer. The reader thus may have difficulty is making reference to models of structure and development that would nonetheless give the text, and consequently its extract, all their meaning. Without even speaking about the confusions that such a fragmentary reading might cause (principal or secondary information, facts or opinions, hypotheses or conclusions,...), the hypertextual reader risks losing sight of any notion of textual construction. This reader consults the hypertext like a dictionary in which all the information found has the same value. Synthesis, often laborious, is thus reduced to a catalogue of decontextualised information the reader is content to plough through, juxtaposing this piece and that, little prepared to have recourse to a new model

that would be adopted for the purpose of taking into account this material by reorganising it. The models are not only often mixed up, but also end up being dissolved in a hypertext without form, which judging by the writings of many students, leads to the creation of linear texts that have little structure, in which each piece of data, each idea, each argument appears to be a separate thing, unrelated to the rest.

c) Finally, in order to create meaning, is it necessary that these two types of organisation - linear sequentiality and hierarchical inclusion - should be inscribed in an enunciative context and a communicative project? Informed by the context, the support, the paratext, and by his or her given and relative referential, cultural and encyclopaedic knowledge of the environment, and by his or her given and relative experience of previous readings, the reader, even before beginning a new reading, feels in an anticipative way and in preparing for what will come, the enunciative coordinates of the text, the relations that its author must establish between the three founding terms of any communicative project, which are the subjects, the world (as referent and as context) and the text(s) (metatext, intertext). Thus, from the beginning, the reader can put forward a whole series of hypotheses concerning the communicative project that the author of the text is offering, hypotheses that the reader will verify in the course of his or her reading. Understanding a text is above all understanding the nature of such a project, the finality that this text (as a macro-act of language) gives to itself, that characterises it, that justifies it in relation to the persons implicated, for the world concerned, for discourses that are called for, and which gives it its meaning, its "significance" as well as its "destination", that is, its pertinence. In fact, these coordinates represent the group of conditions required in order that a text may not only succeed, but also become possible.

A hypertextual reader who encounters a new text without preparation, without co-text, without context, without paratext, can only take into account its enunciative coordinates with difficulty. One might therefore fear that when hypertext is badly handled, it neutralizes these enunciative coordinates, the text's interactive positioning, the intertextual relationships inherent to any communicative project, indispensable to their proper reading. The consequences of this may be important; we will mention three of them.

First, it is useless to insist upon what determines the correct interpretation of a text, nor upon the risks of mixing up scientific treatises, newspaper editorials, university courses, advertisements, personal blogs, abstracts of books, encyclopaedia articles, sectarian writings, etc., which the hypertextual reader finds more or less in the same format on a screen, while their paper versions have particular kinds of supports, on the shelves, in publishing houses, and in a variety of contexts. Hypertext has a tendency to level all texts, hiding their generic character, so that texts of widely varying value can take on comparable value in the mind of the student who is not very experienced with this kind of reading: by their uniform appearance, they give

this student the impression that the conditions of production of all these texts (nonetheless very different) are similar, and thus the Web does not encourage surfers to modulate their modalities of reading. In short, hypertext contributes in the end to a dangerous confusion of genres.

Second: one may applaud the interactivity of NICTs, which allow broadly based exchanges, as well as participation in collective writing, e.g., on the editorial boards of online magazines or encyclopaedias (the "wiki" phenomenon), but one may also worry, long-term, given the complexity and anonymity of the Web, that the welter of intertextual connections will erase not only the principles of intellectual property, but of intellectual responsibility as well. The students lose themselves in the Web to such a degree that universities are forced to take precautions against plagiarism, such as purchasing software to detect it. Perhaps we are witnessing a significant mutation of the concept of intellectual property, a return to universal cultural heritage property, as it was before the humanists of the Renaissance began to sign their works.

Third, one often has the impression that the critical awareness of students becomes weaker as they navigate the Web, and one may ask oneself how far this attitude is linked to the lack of enunciative guideposts, which prevents the reader from recognizing the status and the intentions of the author, and from taking his or her critical distance and precautions with regard to the communicative project in which he or she happens to be engaged, as if the virtual and sometimes anonymous character of such communication conferred upon the author a certain neutrality. Furthermore, hypertext, which does not incorporate the positions or opinions of the other, to whom it sends the reader with a click and no more, also has a tendency to leave those positions or opinions without critical analysis, leaving a space for freedom, but also casting a responsibility onto the reader... if he or she is prepared to take it.

To sum up: if we distinguish, in the dynamic of the text, three axes, as we have done here, concerning its cohesive progression, its coherent composition, and its enunciative pertinence, all of which contribute to its constitution and its reality as well as to its effectiveness,

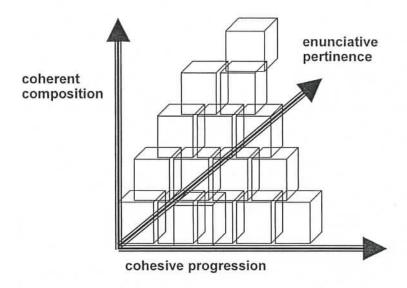


Figure 1: The three axes of the textual dynamic

We may wish to ask ourselves how a reader faced with hypertext can fulfil these three requirements, in terms of:

- 1. **linear progression** (*cohesion*): how can we establish semantic, syntactic, thematic, logical and argumentative connections between units in sequence;
- 2. **organic composition** (*coherence*): how can we incorporate the series of units thus constituted in a global structure (sequences, the parts of the text, its overall structure) as a function of textual models the reader has experienced;
- 3. **enunciative conditions** (*pertinence*): how can we establish the context and the enunciative project that is the source of the text, its meaning, its justification, its function, its finality, as well as the role the author gives himself or herself, and the role given to the text itself?

Further: how will this reader manage to articulate these three axes, passing from one to the other, projecting onto the others all the information and intuitions that the reader draws from one axis, through the system of interaction and reciprocal enrichment that traditional reading constitutes? According to strategies that are well known, readers project the data they take in via the axis of cohesion onto the axis of coherence, and arrange them according to one or another prototypical model they may have recognised. At the same time, readers take advantage of model(s) of coherence in order to understand, select and anticipate data that come in a linear stream, and thus transfer to long-term memory the pertinent data recorded by the short-term memory. Finally they associate the data

regrouped and assembled in this manner with a context and an enunciative project, such as was determined by the author through his or her intention. Will the hypertextual reader activate these reading strategies in other ways, or implement still others? In any case, a field of investigation is open for linguists and cognitivists, who will have to answer the question of knowing how meaning (understanding, analysis, synthesis, critique, memorisation, production) is (re)composed in the mind of a hypertextual reader.

4. Conclusion

To conclude: taking account of the reservations indicated above concerning the multiplicity and the complexity of factors in play, there remain strong reasons for concluding that by ignoring, by transgressing, by disarticulating the principles, the arrangements, the classical mechanisms of textual functioning, hypertext obliges the reader to search – in a linguistic or cognitive sense – new cohesive sequences, new models of coherence, new principles of pertinence; this change will lead or is already leading toward other types of texts and/or toward other types of readings of texts. In the meantime we observe, as many teachers have done, that hypertext and/or hypertextual reading at present places one who is learning to read, to write or how to act as an intellectual, but who encounters difficulties – in his or her textual activity – in the process of making sequences (cohesion), in synthesizing and composing (coherence), in properly attributing and in criticizing (enunciation) and, finally, in understanding and communicating through the recomposition of texts (articulation).

More generally, are these difficulties with textual de-/re-/structuring balanced out, or will they be, by the benefit of new reading strategies, by adaptations, perhaps even forms of cognitive progress? One will recall in this connection that the technical forms of progress that affected linguistic exchanges – principally the invention of writing, printing, telecommunications – also brought in their wake linguistic, cognitive and social sacrifices (ability to memorise, mastery and status of spoken language, intuitive uses of knowledge, conviviality in communication...). We may ask ourselves what compensations may appear, if as we hypothesized, linear, structured, closed-end text is no longer to be the (principal) medium involved in the construction and transmission of knowledge.

At any rate, we must at least recognize that the increasing reliance upon NTICs cannot be summed up in terms of a simple change of medium that has no effect on textuality or on reading (one proof of this is the commercial failure of the e-book concept, which shows that one medium cannot be exchanged for another across all categories of readings and texts), and that this phenomenon causes inevitable recalibrations among different vectors of reading and the transmission/creation of knowledge, relationships with language, relationships with the world (real/virtual; local/global; subjective/objective...) and relationships between subjects (author/reader; cognitive/social-affective). In order not to

create new forms of illiteracy and, in the process, elitism, exclusion and alienation, we must insist, in closing, upon the necessity not only of pushing further the research on the collateral effects of the development of NICTs, which is often connected to commercial interests, and of pursuing debate concerning what may be at stake in the massive use of NICTs, while not omitting at all levels an effort to educate people with regard to NICTs, not just in technical terms to which such education is generally limited, but also on the semiotic, linguistic, discursive, pedagogical, ethical and ideological levels.

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