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What (cyber)reading for the (cyber)classroom?

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Abstract In the present paper, we take as a starting point the debate on the relationships between the changes in writing supports and the changes in reading rituals, defending the need to pluralize the models and functions of literary reading so as to be able to approach different typologies of literary digital texts. Firstly, after revising and situating in a historical context the different types of reading rituals that the print text has developed, we reflect upon the type of reading that the academia is implicitly demanding in this new context through its use of ICCT and the design of learning sites. Secondly, we discuss how our readers, the students, are adjusting to the new digital literature and how can the teacher guide them through this permanently morphing scenario. We argue about the need to develop functional models for digital literary readings, and in the final section of the paper, we offer several reading strategies that can help teachers and students build a bridge between print and digital literary texts.

Keywords Digital literature · Learning · Reading strategies · ICCT · *Wreaders* · Digital texts

Technologies for literatures: in other words, fears and desires

We are all digital immigrants coming from national cultures in print. In fact, books used to be the great vehicle of aesthetic experiences, although throughout the twentieth century, the screen removed their primacy. The book was the best support for storing and accessing knowledge, but over the final quarter of the twentieth century, knowledge was also built on other supports. The book is still the most eminent vehicle for school learning, yet over the

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next decades of this century, digital spaces may take on this privilege. This is a phenomenon that we expect, yet we also fear.

Technologies are a primary site for fears and desires in a given society: they are related with radical transformation and with the future in the popular imagination, they are hopeful investments for resolving lacks and losses (Sturken et al. 2004). In literary domains, numerous challenges and possibilities are faced by expert readers of traditional literatures, as much as by *wreaders* of new digital literatures. In the present paper, we wish to take as a starting point an already well-developed debate on the relationships between the changes in writing supports and the changes in reading rituals, so as to confront different typologies of literary digital texts. By pluralising the models and functions of literary reading, we intend to offer a number of reflections on good practices for reading literatures on screen.

As a matter of fact: technologies are disrupting traditional academic perspectives. Within academic circles, knowledge is seen as the result, in a human mind, of understanding information and integrating it meaningfully with the pre-existent knowledge. In fact, human knowledge skills need include how to gather vast amounts of information, how to select and synthesize, how to interpret it and how to use it taking into account diverse cultural contexts (Rosado and Belisle 2007, pp. 6–8). Because the human mind cannot deal with great quantities of symbols simultaneously, technological tools have always been necessary to organize great amounts of information in readable patterns. Knowledge processes, such as searching texts for words, searching for labeled contents, summarizing texts, customizing information, clustering large quantities of information, are being taken over by technological tools. Nowadays, knowledge societies seem to base their development mainly on measurable or quantitative information, and scientific knowledge tends to designate strategic information within very specific contexts. We wonder whether the growing pervasiveness of mind empowering digital tools could change the relationship between literary reading and the knowledge of reading in general. For centuries, educational institutions and books have been monopolies of knowledge: monasteries, schools and universities have been providers of access to information and to knowledge building competencies. Nevertheless, the universal access to online cultural heritage and, moreover, the costly access to knowledge managed by private companies is becoming a real challenge to academic strongholds in the Humanities.

The advent of digital literature in the literary system has brought with it important transformations which affect, not only the reading pacts previously shared by writers and readers, but also the relations between teacher and student. The principle upon the pleasure of the text was founded, which managed the subtle equation between interpretative effort and gained insight, has metamorphosed into a new erotic of reading, one which needs to accommodate itself inside the reader before any pleasure can be extracted out of the electronic text. Teachers and students face a challenge inherent to the myriad of polymorphic *literary* manifestations, together with the added technological dimension that is used to replicate the literary experience, that is, the different code layers upon which the interface managed by the reader is dependent. Which role will the teacher perform in an environment that seems to elude a close-reading or even an interpretation? Will the community of readers (professional or novice ones) be dismantled by the disappearance of the fixed text? Teachers and students of digital literature need to rethink the whole field to literary criticism anew, capable of metamorphosing as quickly as them to be able to assess them.

In fact, we do not know exactly what kind of new *wreaders*—our students—are growing in the new polydialogical spaces where the multimedia formats are interconnected: which memories and which identification processes are being shared, which cognitive activities

are being developed, which seeing needs and desires of watching are being born among cyberculture's children in the different social sectors. New abilities of the under-30 generation (Prensky 1998) compared with up-30 generation's ones should be analysed more precisely (Bauerlein 2008): Parallel Processing versus Linear Processing, Random Access versus Linear Thinking, Graphics First versus Text First, Connected versus Stand-alone, Active versus Passive, Play versus Work, Payoff versus Patience, Fantasy versus Reality, Technology as Friend versus Technology as Foe. The full impact of all these changes will not be felt until the younger generation fully comes to power. One indicator of these changes is the swift displacement of users towards online education, due more to the pressure of demand than to institutional policy: we need only take a look at the evolutions towards online schoolbooks in France (from Gossin 2004 to the Ministère de l'Education Nationale 2009), or the evolution of the ODL at universities, such as is the case of our own Complutense University (https://www.ucm.es/campusvirtual/CVUCM/index.php?ac=estad).

In order to understand the so-called *third revolution of reading* (Cavallo and Chartier 1997) we are living in, scholars are drawing on their own traditions: either historical, cultural or experimental. Actually, many of us have learnt to think of reading in terms of the history of books as merchandise and machine from the revealing work of Febvre in 1958, up to the works of Chartier and Martin, MacLuhan, O'Donnell and Vandendorpe, and of course de Certeau (Febvre and Martin 1958, MacLuhan 1962, de Certeau 1993, Cavallo and Chartier 1997, O'Donnell 1998, Vandendorpe 1999, Martin 2000). But often, our reflections are too filled with printed culture models. We cannot see the wood for the trees. The Cultural Studies movement, coming from Richard Hoggart, Raymond Williams and Edward P. Thompson's theses, has facilitated the incorporation into our field of study the disquisition about subcultures, the ethnography of audiences and cultural industries. Moreover, the interest in visual culture as social construction has opened us up to the new cyber-visual spaces considered as new cultural and social spaces (Elkins 2003).

From the experimental perspective, what we essentially need are a wide range of research experiences to obtain guidelines for reading layouts and functional, usable and acceptable *e-reading* systems. Projects such as *LIRE* about encyclopaedias readings (Allusse et al. 2006) and *Eye Movement Laboratory*'s one about *E-learning Systems* (http://e-tracking.unipv.it/guideline%20List.html), or handboooks as Baccino's (2004) are providing visibility and readability evaluation layouts, comprehension and presentation models, interfaces ergonomy.

Many scholars (from Eco 2003 to Bauerlein 2008, and also in http://chronicle.com/free/v55/i04/04b01001.htm) regret the incompatibilities between reflexive reading and digital supports, which is considered to bring about reading that is based purely on consultation, superficial, urgent, fragmentary and iconic. There is a tendency to oppose diagonal, rapid and even frenetic reading, to immersive, intuitive and playful reading influenced by video games and blogs (Saemmer 2007, pp. 40–47). The lovers who read time and time again the email from their beloved so as to inhabit it would not agree with this. Nor would the creators of didactic hypertexts such as the *Victorian Web* (http://www.victorianweb.org/) or of a classic like *Patchwork Girl* (http://www.eastgate.com/catalog/PatchworkGirl.html), who base their efficiency and functionality on the option of returning, rereading, restarting a path, and thereby inventing it. Or the readers of the e-books Kindle I and Kindle II who, through their customer reviews, point out some enlightening clarifications: on-screen reading of e-books has allowed them to recover the pleasure of reading. In contrast to what might be expected, users of e-books on Amazon emphasize the fact that Kindle "disappears" the moment reading begins, that readers submerge themselves in its pages and very quickly forget the novelty of the support, they

even come to read works which, in their printed format, would have intimidated them because of their length.

Indeed, neither electronic textuality is one nor on-screen reading is one. The different functional models that may be activated for different online literary readings should be investigated. Textual typologies and acts of reading which can be amplified more or less by electronic technology must be distinguished from one another: classic literary texts in image mode (facsimile) or in text mode (for searches), in page mode (pdf) or in hypertext mode; literature created by and for electronic supports that requires singular reading acts for a textual and graphic material.

To those who celebrated the death of the author, and now mourn the death of the reader, three things should be pointed out: (1) it would be risky to put forth hypotheses without the data to cross-check regarding mass access to the high literature, on very distinct cognitive, cultural and social levels depending on the amplitude of the so-called *digital divide*; (2) we may be so forthright as to announce that all of those ergonomic features that seem to threaten deep and concentrated reading will eventually disappear (eye fatigue with the perfection of electronic ink, vertical screen positioning in favour of other angles, layouts of editing for screens), so that we should be more concerned with the cognitive models and the new tools for on-screen reading than with the ergonomy of on-screen reading; (3) it is true that a very wide audience accesses the Internet in search of information by way of a fast and dynamic exploratory sweep, but this does not entail that the screen only allows this kind of function. Let us remember that without ICT tools, science would be dead nowadays, since the majority of scientific documentation is only accessible on screen and thanks to subscriptions that only very well funded academic and scientific institutions can afford. Reflexive reading on screen is, therefore, possible. And last but not least: the first examples of human writing contained figures for keeping accounts, not poetry. But poems were finally written and read.

Rituals of readings

Reading practices are not only linked to the history of written objects, but also to the gestures, spaces and rituals which constitute them as such. Indeed, reading is not just an intellectual operation, but rather, a relationship with the body and with the object, a position in space. And such relationships change. Reading is not a strictly individual act, but a set of social practices with its protocols of exchange in a world built by others. And protocols change. Authors do not write books, but rather texts that technology transforms into objects, and objects choose their interlocutors in each time and in each space. We should study carefully how, this very day, reading rituals are being transformed within different *interpretative communities* (Fish 1980), which grant value to what is written based on different competencies and techniques. And we are intentionally laying much emphasis on the plural.

In fact, the sharing and contrasting of individual literary experiences has been based, up to now, on the existence of a common referent, a fixed text upon which interpretations have been progressively accumulating, forming communal symbolic objects that have joined the stream of our cultural heritage. Meaning making has been at the core of such sedimentation of interpretations. But this emphasis on deciphering the text meaning has not always been a central concern for literary critics: the ancient critics of the Classical Period equated language with action, rather than with signification. Therefore, when they discussed literature they paid close attention to the audience reaction, but not as a reception theorist

preoccupied with close readings of the text, but with the ultimate interest placed on the effect of literature to modify behaviour and consciences.

In order to understand how we have come to a *dominant literary reading in expert mode*, we should consider the two great mutations that reading has undergone within European culture (one scholastic and intensive, another immersive and extensive), so as to identify parallelisms and similarities with the desires and fears that we experience today, from the academic viewpoint, when facing the screen revolution.

We are referring, firstly, to the mutation which, during the 12th and 13th centuries, led to a scholastic model of reading (Hamesse in Cavallo and Chartier 1997, pp. 157–185). When books are read for knowledge of God and the salvation of the soul, then books should be understood, thought about and even memorised: the pages of the codex section the text, facilitating re-reading and locating. We emphasise that the codex with an intellectual function (meditation, preaching, commentary, study) divides up the written page into sequences and narrow columns, so that each line is contained within a unitary visual field. Total, concentrated and repetitive reading of few books was followed by "gulping" reading of many books, in an age—that of the scholastics—characterized by the multiplication of written texts, and by the demand for extensive, yet fragmentary, knowledge. And while literary production was continuously increasing, faster reading methods became necessary: florilegia and recompilations were produced, the visual (as opposed to auditory) study of texts triumphed, divisions were established, paragraphs were marked, titles were given to different chapters, concordance was established so as to quickly find the necessary quotations. Thus, *reading* became a scholarly exercise, with its own laws, and the place for this activity was school or university. With Humanism, this mode of reading and writing did not disappear, but rather, the authors of reference were diversified or changed (Grafton in Cavallo and Chartier 1997, pp. 281–328). Humanist readers did not just expect to find simply a classic text, but rather one surrounded by glosses, a print version of what was done in study halls, so that commentaries shortened and conditioned the text and the reader, pen in hand, would convert the book into the unique record of their own intellectual development. Reading has always been poaching (de Certeau 1990, p. 251).

The question is: how scholastic, humanistic, encyclopaedic are we teachers, when we dream of transferring the old wheel of books into electronic thesauri, semantic markers and RSS feeds; *disputationes* into forums, news and e-prints; the list of glosses into annotation procedures, blogs and hypertext? And yet, nonetheless, we fear a *wiki* degree of culture.

The second great mutation of reading in Western society is situated by many in the eighteenth century (Wittman in Cavallo and Chartier 1997, pp. 331–364): with Rousseau, Bernardin de Saint Pierre, Goethe and Richardson, the most extensive kind of reading was brought about; in such reading the novel takes a hold of its readers and governs them in the way that religious texts used to do. Nevertheless, the myth of modernity was incarnated by Don Quixote and his literary madness as early as the sixteenth century. Not to mention the *romans héroïques* or the superproduction of *nouvelles historiques* with which France inundated Europe in the seventeenth century. In *Don Quixote*, this reading, which is no longer intensive, nor hermeneutic or allegorical, but extensive and immersive, provokes ire and condemnation. The housekeeper and the niece do not hesitate to seal off the door leading to that *other world* in which Alonso Quijano submerges himself; the priest and the bachelor throw into the bonfire just a few of those *other worlds* that they know and are also able to inhabit. This fear of immersion and of the empathetic play of reading communities reminds us of the fears held by many mothers nowadays of dark rooms where the only light is that of single-player videogames.

Again, as the printed object becomes more common, a more marked distinction of ways of reading takes place. There are many (Martin and Chartier 1982, pp. 380–445) declarations of horror regarding the excess of books, read quickly and poorly, of this familiarity that destroys the seriousness of deciphering, of a submissive and credulous reading of texts that is considered to be basically feminine (MacDowell 2004; Flynn 1986). These extensive and immersive readings took a long time to enter schools. But this extensive reading, covering all kinds of practical matters (travel, natural sciences, newspapers) and breaking down the tentativeness just illustrated, will end up transforming readers into useful members of society, capable of carrying out the tasks assigned to them, and thus be useful for moving up in the world. Likewise, nowadays the ability to read electronic texts requires a new kind of informational literacy, and is granting legitimacy to other reading rituals. In fact, changes in reading models produce social changes.

But everything worries us teachers: the difficulty of intensive reading, the end of extensive reading, immersive games and information overload. We forget that there are readings for searches, for building knowledge, for evasion, for fun, for identification, for transgression; that consulting documents has always been fast and fragmentary, widespread and perfectly integrated into learned reading; that nomadic luck, fortuitous encounters and gambles are also components of all of our readings.

Expert reading need not be unique, necessarily associated with one support, a ritual and a community: simply, a particular mode of reading has become canonical (Bourdieu 1992). In this respect, it might be useful to revise the different types of readers our students might be and to reflect upon the type of reading we have associated with the expert mode (Bleich 1986; Flynn 1986). Between submissive reading (of immersion, fusion, evasion: feminine) and dominant reading (characterized by detachment, resistance and projection of prejudices onto the text, and thus, silencing or overwriting the text's message), there may be a gradation in which reflexive reading can be situated. Actually, Schwab situates this reflexive mode of reading as an ideal type of reading that would help us avoid the trap of ethnocentrism. She distinguishes several ways of reading (introjection, rejection, projection) that mirror cultural patterns of relating to otherness, and she classifies them along a continuum that goes from "the archaic and the transitional to the highly sophisticated and reflexive readings required by modern and postmodern texts" (Schwab 1994, p. 114). This idea of an evolution in reading modes points to the fact that there is a scale for measuring difficulty and sophistication in reading, and that different texts require different types or levels of reading.

Yet the institutions have taught language through reading, and reading has been made intensive and methodical, sensitising and reflexive, critical, as the most illustrated humanism would have had it, expert reading, so very far from everyday practices that pupils abandon it each day as soon as they leave school. Schools have always spoken a *different* language, and have imposed it on writing: Latin and non-vernacular languages, *François* and not *patois*, Spanish and not Galician. Today it is the language of the academy and of science, necessarily for the initiated because it requires categorisation and construction, because it creates élite groups.

We would be better off beginning with practices of co-lingualism when studying the dynamics of the norms of literary reading. We would be better off pluralizing our models of learned reading also at the university. We would be better off identifying good practices for literary text reading on electronic supports, also for slow, extensive and linear reading.

Thus it becomes necessary to reflect upon the type of reading rituals we are developing in our everyday practice of screen reading within an academic context: firstly, which type of reading is the academia implicitly demanding in this new context through its use of ICCT and the design of learning sites, and secondly, how are the readers, the students,

adjusting to the new digital literature and how can the teacher guide them through this permanently morphing scenario.

Developing functional models for digital literary readings

Nowadays, print models of reading are being integrated into the digital sphere. The resulting combinations reach varying degrees of integration of print and digital models of reading, creating new syntheses. Moreover, different screen ergonomies are selecting different screen literacies and are reproducing different literary reading strategies. The debate concerning the predominance of words versus images, of a linguistic versus a visual perspective of reading, takes its place in this context, since digital spaces have the potential to promote either mode of reading.

Up to now, the digital medium has incorporated both strategies. On the one hand, the features of the codex: framed in a plurality of bars, each one having its own function, page marking, tables, indexes, boxes and fragmentary sections relate and index content, as occurred in the medieval tradition. Today's new codex standard is made up of four or five columns filled with more information than images. On the other hand, texts tend to unfold vertically and become linear, as in a volume, hooked onto a list of menus located preferably on the left the order of which is rarely hierarchical, semantic or even alphabetical. The use of icons is generally decreasing in favour of the text. We need only compare the evolution of educational platforms which are widespread in university teaching: as opposed to the iconic, mural and markedly hypertextual interfaces of the first versions of the WebCt and Blackboard, we find the graphic, serial and vertical, hypermedial interface of Moodle. Finally, a third kind of logic is in play: the sequencing of the hypertext. But practice has very much limited the hypertextual revolution. Ted Nelson created the word *hypertext* dreaming of a huge intertextual project that would cover everything that is written, fascinated by the multiplication of trajectories, the semantic openness of the pregnant word, the interaction between images and words, the temporal action of links. But in practice, functional limits are being proven: links cannot lead to more than three or four levels without the reader getting disoriented.

In order to use ICCT (*Information and Communication and Culture Technologies*, as they are called by Romero and Sanz 2007, p. 329) for teaching people to read literatures, some decisions should be taken. First of all, the values that underlie decisions should be clearly established: strengthen citizenship, foster academic excellence, train students professionally? We are conscious that educational institutions have always served political and economical purposes: let us remember Jules Ferry School for the construction of the French Republic or the Humbold University at the service of a ruthless nationalism. Even improvements need a direction and a purpose so that they can be effective, since innovation and change are not absolute and magic values in themselves. We consider that ICCT, due to their communicative, hypertextual and hypermedia possibilities, may be tools for developing intercultural and transliterary readings (García Carcedo 2008).

Secondly, we are aware that the mere presence of ICCT does not resolve the cognitive difficulties of the process for the comprehension and use of electronic texts. In order to favour an instrumented reading, an authentic *augmented reading* thanks to the use of search engines, integrated dictionaries, analytical tools, relational links, we must be very attentive to the possibilities of our students' e-literacy and, thereby, of their reading modes. We have available the resources and standards of the *International Society for Technology in Education* (http://www.iste.org/), the National Curriculum for Britain on ICT (http://curriculum.qca.org.uk/key-stages-3-and-4/subjects/ict/index.aspx), the results of the

DigEuLit project (http://www.digeulit.ec/default.asp) and the Standards on Information and Communication Technology for Pre-Service Teacher Development of the Department of Education of Chile (http://www.oei.es/tic/Estandares.pdf).

Thirdly, one may wonder what to do in order to recuperate what the prefix *hyper* expresses for literary readings: an intensity or quality above the average, not just quantity or abundance. We ought to ask ourselves whether modifying reading mechanisms thanks to ICCT may allow us to carry out improved cognitive and complex metacognitive operations. Morin's definition of *complex thought* (not complicated, nor complete) and *organised complexity* (Morin 1999: 43-77) would be our starting point here:

> A thought which isolates and separates needs to be substituted by a thought which differentiates and connects. A disjunctive and reductive thought needs to be substituted by a thought of the complex, in the sense of the term *complexus*: that which is woven together. (Morin 2000, p. 117)

This definition of complexity does not deal with a linear and irreversible progression, but with looping feedback, difficulty and poly-dimensionality. The generating capacity of complexity invites to create new relations: it is that endless self-regeneration so demanded by employers. We are interested in Morin's priority in the necessity of fostering self-awareness, as well as in the principle of the constant reintroduction of the expert subject in any knowledge, because knowledge is not a ready-made tool to be used: its nature must be examined continually. Metacognitive skills help to develop the adaptation capability, the productive recursivity, scheduling and self-control. We consider these competences suitable for the cultivation of complex thought at the university level and for safeguarding the capacity of critical response required by employers. This kind of principles should inform the thoughts of computer programmers and ODL educational material designers. We will give way to that complexity so as to get out of the video game aesthetic. Perhaps we will have to cast aside the easy premise prevalent up to now: if it works as a play-station machine, it is simple, it is good.

In order to achieve our aims, we should pay attention to the (good) practices of ICCT users for reading and learning. Social practices are slower than technological changes, and new ways of reading are not born immediately after a technological invention, just as typographic innovations associated with the relationships between the eye and the brain have always been slow (Martin 2000), but for this very reason, they are observable. In the graphic and ergonomic domain, for example, the amount of time it took to guarantee the visual horizontality of the line by way of serif typeface, the isolation of the characters, the aired page, the distribution of black on white, the disappearance of marginal texts in favour of a centred text with well-defined paragraphs, the two columns of the pages slightly centred with respect to the axis of the books. In the same way, we find it hard to remember that, just as Adrien Miles insisted, *A web is not a page* (http://cs.art.rmit.edu/hyperweb). In order to facilitate on-screen reading, it is enough to be aware of such simple details as the use of Arial or Verdana fonts, which have evolved towards the separation among letters and line spacing, contrary to Times, a font designed in the thirties for the very newspaper *The Times*. We must be aware of the development of *Guidelines on browsing and layout for e-learning* (http://e-tracking.unipv.it/guideline%20List.html) or to quality balances, as the UCM is (https://campusvirtual.ucm.es/SCRIPT/jornada-58115445-3/scripts/serve_home).

From the methodological point of view, we can learn from the good practices of Landow on his *Victorian Web* (http://www.victorianweb.org/), and from the project *Perseus* (http://www.perseus.tufts.edu/) directed by Greg Crane and Elli Mylonas at Brown University. The Collex programme may be particularly useful, an open code development

for professors and the basis for *N I N E S* (Networked Infrastructure for Nineteenth-century Electronic Scholarship: http://www.nines.org/), developed by Jerome McGann (University of Virginia), as well as the development of specific software for literary reading provided by the platform at the University of Zurich, *Textmachina* (http://www.textmachina.uzh.ch/project) thanks to professor Stefan Hofer, or the CULTOS tool set up by the University of Tel-Aviv (http://www.cultos.org).

Adjusting our print reading strategies to the digital domain

The reader's experience of previous texts constitutes one of the most important reading strategies that are applied to new texts. The high interconnectivity allowed by the digital medium has produced textual structures that have boosted the use of expansions, appendixes, asides, digressions, background information of all sorts, deforming the genre frames to which the reader is accustomed.

But it is worth noticing that the movement towards an explicit intertextuality increasingly overloaded was already the general tendency in printed texts, both academic and literary. In this respect, cultivated readers already possess the tools needed to cope with an excess of intertextual relations that they are not always able to identify, and nevertheless, still enjoy the reading experience. They have become used to filter relevant information from a sea of data by projecting onto the text patterns of meaning and reading objectives, and they have become accustomed to deal with a great deal of ambiguity, chaos and nonsense.

A greater familiarity with digital literature in general also fosters the development of a literary competence that will allow the reader to construct with more easiness mental maps of the document structure. Moreover, one can also learn to trigger effects by exploiting the interactive buttons, and to avoid redundancy by paying attention to the clues about navigation which offers the screen (such as recognizing the address of a link we have already visited, and stopping the loading of the page to return quickly, etc., that is, actions that can be referred to as screen literacy).

We see how, progressively, our previous knowledge of digital texts begins to be incorporated to our intertextual reading strategies. However, not every reader manages the conventions of the new medium with the same degree of dexterity. Landow (1994) highlighted the importance of such conventions, and proposed hypertext and hypermedia authors to use a set of techniques, some sort of user manual, to help readers face the main problems they encounter: (1) the lack of orientation, which inhibits them from reading efficiently and obtaining pleasure from the reading experience; (2) the lack of information with respect to what type of data each link is going to yield, which produces the encounter with non-required or already read information; (3) the need of information regarding the overall functioning of the document, which will help the reader feel more at ease.

In general, digital works of literature are improving in their use of reading instructions and orientation tools, even if in some cases, as Shelley Jackson's *Patchwork Girl* reading instructions, they revert into another sort of information overload (see Fig. 1). The Spanish work *Diorama*, by Ortiz (2004) presents an interesting hypertextual structure that seems to stretch or fold in ways that keep the reader constantly oriented with respect to his or her position inside the hypertext. The tags above the cube inform of the type of information each link yields: a theme, a quotation, a commentary of the author, an external link, a drawing, picture or image, the title of a book, or an interactive application. Before entering the document, the reader also receives some instructions regarding the actions he or she can elicit with the mouse and the functioning of the document. The actions the reader can perform include rotating the cube (the three-dimensional space where we find the links

Press the Treemap View button, at the top of every map window, to open a new view window showing the map as a treemap.

Press the Outline View button, at the top of every map window, to open a new view window showing the map as an indented outline.

Press the Chart View button, at the top of every map window, to open a new view window showing the map as a hierarchical chart.

Fig. 1 Reading instructions for Jackson's *Patchwork Girl*

Fig. 2 Navigation instructions of *Diorama* by Ortiz

interconnected), accessing the link information, isolating inside the cube related topics, or accessing content through the upper menu (Fig. 2).

Rupture of the concept of genre. Reading strategy: a synaesthetic approach

An added difficulty for the reader of digital literature is that many of these works, like *Diorama* or *Patchwork Girl*, which are midway between the essayistic and the literary style, do not conform to traditional generic conventions. Nearly everything has to be relearned anew when approaching a different digital work. Like a new Sisyphus, the reader will have to start all over again with each new work, adjusting to new reading instructions, new rules and configurations, new mixtures of registers, styles, and types of text, new combinations of text and image, of movement, speed, music, and—in the most extreme cases—the reader is even proposed literature without words. This final proposition, which would dynamite all previous conceptualizations regarding the literary, has been implicitly made by several collectives that have included works such as *Sisyphus* under the rubric of "digital literature" (Fig. 3).

The award-winning artist Abad[1] created his piece *Sisyphus* as a representation of his fight against himself. Later transformed for the Internet, the work acquired new meanings

[1] Abad, winner of the Prize ARCO Electrónico in 1999, has been the first Spanish artist to sell his net-art to an institution (the healthcare foundation Sanitas bought his work 1.000.000 presented in ARCO in February 1999).

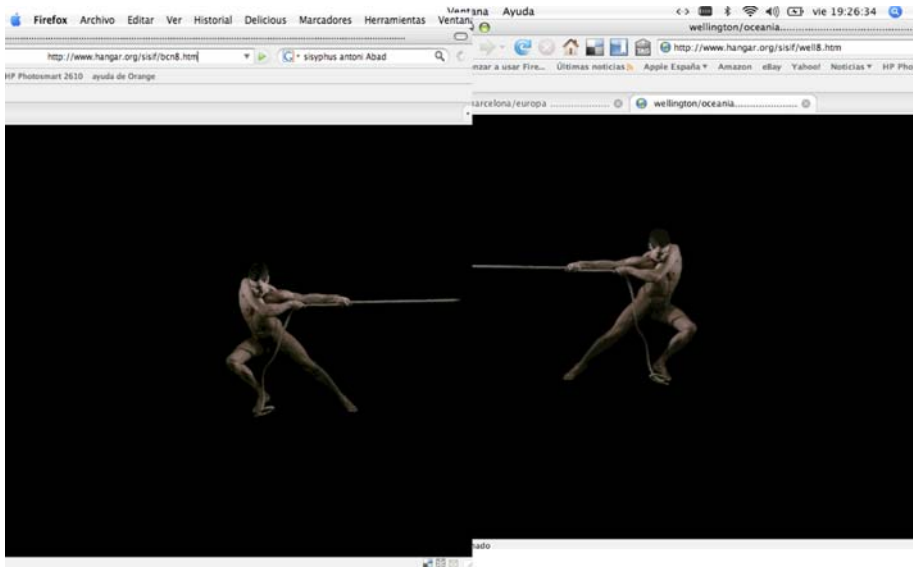

Fig. 3 *Sisyphus* (1995) by Abad

as its two screens were staged by different servers, one based in Barcelona and the other in its antipodean cousin, Wellington, New Zealand.

This net-art work exposes the actual blurring of boundaries between different forms of art and their convergence in the Internet. Of course, its classification as literature is polemic. The argument for considering these pieces digital literature is grounded on theories regarding the intermedial nature of the digital text and its integration into the still predominantly wordy matrix of Internet. The Electronic Literature Organization, for example, admits as digital literature computer art installations which ask viewers to read them or otherwise have literary aspects. The nature of these literary aspects is, however, left unspecified. Abad's *Sisyphus* is also included in their directory and described as a multimedia work.

When words share a space with other types of signs, the question becomes: How many words do we need to make a multimedia work a work of literature? How do we assign a literary value to these new formations? A closer look into *Sisyphus* allows us to realize the central function that words play, even if they are not the words of its author but of its curator, Roc Parés, glossing the work. Without Parés' singular commentary, which appears when clicling the image of the rope at the center, the piece would lack a fundamental context in which to make sense (see Fig. 4). Beginning with a quote from Paul Virilio regarding his aesthetics of disappearance, this text also provides clues for the work's reading. ("Sisyphus is nowhere, it only exists when someone asks for it, in this sense it resembles a stretch or a word. In order for it to work it needs people to go and visit it.")

We could also say that literature only exits in the mind of the reader. So, if we suspend our criticism for a moment and take up the challenge of reading Abad's work as literature, we would arrive to the conclusion that we need to exercise different ways of approaching the visual text in conjunction with the linguistic. These approaches or transformations of our perceptive habits can be useful to understand other pieces of digital art that combine different media. For example, in order for the work *Sisyphus* to be seamlessly "converted"

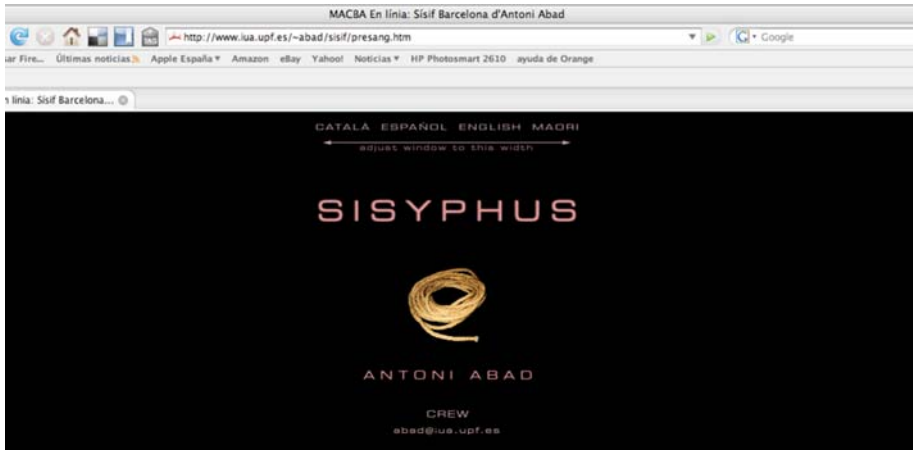

Fig. 4 *Sisyphus* opening page

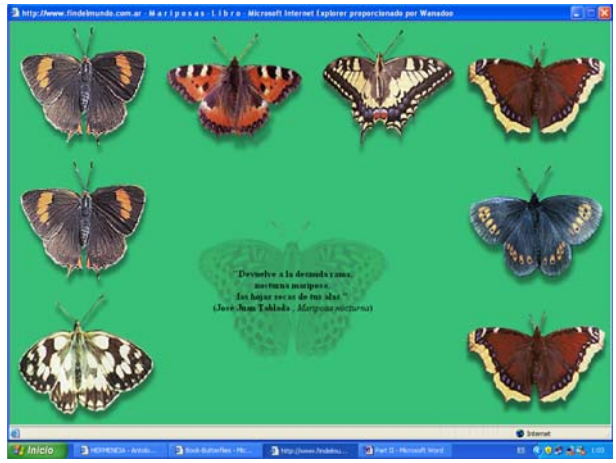

Fig. 5 *Book-Butterflies* (1999–2001) by Gache

into literature, the spectator might need to modulate his or her mind to a synesthesic mode of perception: "see" words when looking at an image, in a way that consciously imitates the mental dislocations of people living with this neurological condition, the synesthetes,[2] who see a color when they look at a number, or hear a tone when they look at a color (Fig. 5).

Interpreting these images in conjugation with the title of the piece would require a synesthetic approach to the image as text, reading its parts in a syntagmatic order, placing our interpretations in relation with other texts, contextualizing the piece in its wider textual

[2] Curiously enough, it has been recently discovered that synesthesia is much more frequent than it was previously thought, occurring perhaps in one of 200 people. According to neuroscientist V.S. Ramachandran, from the University of California, San Diego, synesthesia is much more common in artists, poets, and novelists (Zandonella 2006).

reference, the Internet. The myth of Sisyphus is juxtaposed to the myth of Narcissus, since two identical naked figures fight against each other. Thus, the struggle against oneself manifested by the artist in this piece is placed in the context of digital communication, producing a variety of messages which acquire even deeper significance when inserted in the on-going debate about digital art: a discourse in which the themes of solipsism and recurrence in the digital work of art have already received critical attention. See, for example, Scrivner's article "The Echo of Narcissism in Interactive Art and Hypermedia" (2007), Heim's "The Erotic Ontology of Cyberspace" (2001), or Dery's "Escape Velocity" (1996).

Rupture of narrativity. Reading strategy: the principle of serendipity

The minimalism of Abad's work contrasts significantly with the artistic manipulations of written texts, which appear in a baroque profusion of different shapes and structures in digital literature. A common feature to many of them is the rupture with traditional narrative forms, making obsolete the reader's intertextual habit of presupposing a linear structure for texts. The narration loses its temporal dimension, debilitating the plot and character construction. This might leave in the reader a sensation of loss, of provisional nature. However, if we try to search for its positive aspects, we will discover a new reading pleasure at finding unexpected effects. This idea [pointed out by Borràs as she recapitulates over her teaching experience with hypertext (2005, p. 67)] can be applied, for example, to the work *Book-Butterflies* of the Argentinean writer Gache (1999–2001). Gache's introductory statement ("Writing detains, crystallizes. In a way it kills the word and keeps its corpse. An ethereal corpse like a desiccated butterfly") prepares us for an ephemeral reading experience in which there is not any possibility of retracing one's steps. Clicking in the image of a butterfly elicits a quote from a literary work whose only suture point with previous or following quotes is its reference to butterflies.

The principle of serendipity can be described as the chance discovery of a literary effect. But, as it happens with chance discoveries in science, the reader must be trained to recognize them, to have a sense of fulfillment when they appear. The ideal reader of a text such as this one could obtain pleasure out of at least two operations: the construction of an imaginary narrative, threading the quotes into a meaningful chain,[3] and the recognition of the quotes' sources, contrasting the personally constructed story with the previous readings the original texts once evoked. However, for the average reader, only the first operation is readily available, since the second corresponds to either a very erudite reader, well-versed in world literature and with an extraordinary memory, or to the personal reading history of the author herself.

As many other hypertext theorists have pointed out (Coover, Clement, Landow), this reading strategy, which obliges the reader to play with analogies and metaphor, to read using selective perception, and find generalizing themes, is closer to a poetic reading than to a narrative one. This poetic reading requires a reader who is well-prepared to deal with ambiguity, open-endedness, and lack of closure; a reader who, in short, has so many intertextual resources himself or herself as to be able to project a literary structure over an amorphous collection of quotes.

[3] For example, a random selection of quotes from texts by Severo Sarduy, Chuang-Tzu, and Elena Poniatowa can yield the following sequence: Wings of a butterfly imitating a dead leaf>A man dreaming he is a butterfly>A lover feels her happiness has gone when she sees her partner desiccate a butterfly.

The loss of meaning. Reading strategy: dream-reading

The excess of indetermination, produced by textual fragmentation and lack of structure, augments the difficulty of some of the functions normally undertaken by the reader, such as the creation of cohesive hypotheses and their later verification. The data which fail to find a space into a meaningful structure, become irrelevant, and revert into information overload. A competent reader will, therefore, be the one who has acquired the skills to deal successfully with it, by being able to construct a manageable symbolic object that has found a balance between chaos and order, redundant and relevant information, ambiguity and determinate meaning.

Digital literature vindicates its amorphous, monstrous nature. As we can observe in the following two fragments from works by Abad and Jackson (Fig. 6, 7), the lack of narrativity, of interconnection between text fragments or events, is frequently thematized:

...stretch by stretch I have renegotiated my life as if it were an intermittent space for ruined illusions and stretch by stretch I have suppressed in it all the commas likely to accumulate oxygen and all the full stops that would provide it with a new liberating space in order to organize it like a sort of perpetual vomiting of gratuitous acts lacking in the slightest sense of organization with no other richness than its own which stems from its purest captivating gesture in its brutal, absurd audacity incapable of reorienting it towards a territory minimally doted with sense as emptying my existence of reasons and projects which generate illusions and new perspective I recognize that I have reached the supreme level and paradoxically of being finally possessed by life through the neurotic contemplation of my most primitive functionality and from that I am sure I will reach happiness beyond my wildest dreams thanks to the quantification of time measured stretch by stretch...

Fig. 6 *Minor Measures* (1994) by Abad (continuous video projection, text)

Both fragments point self-referentially toward the new reading strategies that would allow the reader manage chaos, inside and outside the text. Abad's text alludes to the strange paradox of being finally possessed by life as he becomes aware of his own machine-like functioning, of the cyborg in him ("through the neurotic contemplation of my most primitive functionality"). Through the video projection of a hand repetitively measuring space-time stretch by stretch, Abad represents the mechanical aspect of our body systems for apprehending the real. Reading should not be more complicated than that: a self-referential awareness or contemplation of our own pulsations as we advance, stretch by stretch, through the text.

Jackson seems to describe a complementary mode of reception when she refers, in the following link entitled "Dreams," to the solution for apprehending the textual skein she has created: "the answer, of course, is to look with my dream eyes, not the eyes of my body." Dream-reading is not so much a matter of rational classification or remembrance of textual fragments or passages, but of trusting memory's ability to recall them from a subconscious reservoir once they become a marked feature by contingency with other pieces of the puzzle. This type of subliminal reading or unconscious scanning is the dream-reading of Bachelard, which Barthes (1980, p. 37) describes as: "a homogeneous (sliding, euphoric, voluptuous, unitary, jubilant) practice." This mode of reception is also considered by Schwab (1994) as a way of creating an interface or a transitional space where primary modes of experience (subconscious, irrational) can connect with secondary modes (rational, conscious). Schwab has termed texts which require this mode of reception as

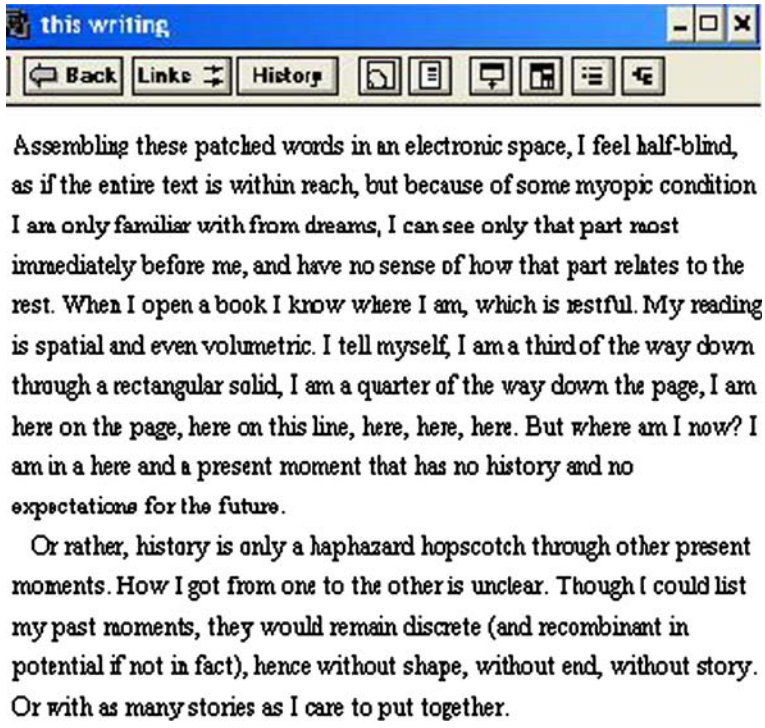

Fig. 7 *Patchwork Girl* (1995) by Jackson. Sequence of links: Title Page>Broken accents>Phrenology>X>**This writing**>Dreams

"transitional texts," for example experimental modern and postmodern texts, such as Joyce's *Ulysses*, Pynchon's *Gravity's Rainbow*, or Cortázar's *Rayuela*.

The reading cyborg that emerges as the ideal reader of digital narratives has not made its appearance from a cultural void. On the contrary, its literary competence has been nurtured in print narratives that have stretched previously conceived boundaries regarding literary aesthetic conventions. These transitional narratives have fostered a way of reading characterized by a high degree of self-reflexivity, and over abundance of apparently futile information, a synesthetic mixture of different artistic genres, and sensitivity towards technological metaphors that long preceded the digital medium. It goes without saying that digital literature students would greatly benefit from reading such print literature as a vaccination against the pitfalls of ambiguity and information overload.

The fear of solipsism. Reading strategy: building context

We should not ignore, however, that the authors of the previous extracts, Abad and Jackson, either driven by an aesthetic choice or forced by the constrictions of the new medium, have renounced to comply with the implicit covenant upon which readers bestow a great amount of reading pleasure: the expectation that the writer will make the artistic effort of providing with unity and coherence a sequence of events, of creating a virtual reality which is symbolic, significative and explanatory, a titanic effort which the reader appreciates and contrasts with the apparent meaningless sequence of ordinary events in real life.

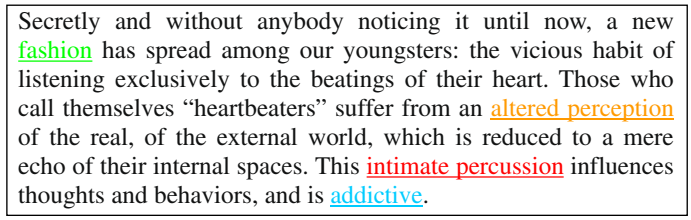

Fig. 8 *Heartbeat* (1999) by García

When the reader assumes this role traditionally performed by the writer, as well as other navigating functions, he or she certainly develops an authorial personality that was previously lacking in more traditional texts. Too much projection on the part of the reader over the indeterminate and fractured structures of digital texts can lead, however, to a dominant reading lacking in intersubjectivity. The world of the text is too indefinite to present a counterpoint to the narcissist projection of the reader's subjectivity. Eventually, we, as solitary readers, might suffer from a solipsistic reading, a reading that reflects without distortion our own self-image and desires, and denies access to otherness.

The fear of a solipsistic fall is another common theme in many hypertextual narratives. For example, the multimedia artist García's work *Heartbeat* (1999), is a hypertext story dealing with a disease or vice that can also afflict the cyborg reader in front of the computer (Fig. 8).

If training at complex information processing, experienced by readers familiarized with "transitional texts," is invaluable when transported to hypertext or hypermedia reading, there is another activity belonging to the reading experience which is more necessary than ever in the context of digital literature: contextualizing individual interpretations of texts inside a bigger frame of reference, the community of readers and the critical discourse of cyberculture.

Digital literatures share with other artistic products of the digital age a set of anxieties and common themes that entangle the reader into the critical discourse of cyberculture. They touch upon the paradox of simultaneous superconnectivity and isolation, showing the reader the dangers inhabiting the very same medium the text uses to propagate. The digital artist warns the reader of the progressive dissolution of that communal dimension reading, as well as other human practices, once enjoyed. Taking heed of this warning, it is up to us what kind of cyber-readers we want to become: those who fall into a cacophony of voices, in which everybody "talks" (writes) but nobody "listens" (reads), or those who want to find a balance between their personal projections and interpretations, and the communal experience shared by a community of readers.

It will become necessary to reflect upon the different rituals of reading we are already performing in our daily life, upon the manner in which previous rituals developed around the printed text, are now being integrated into the digital sphere and morphing with new habits of screen reading to form new rituals of reading. These new rituals will have to be studied along with a new typology of digital texts and a new reading environment. Thus, we have briefly traced the historical evolution of reading and the actual practices in the digital domain in an effort to pluralize textual typologies and reading modes. From now on, it will be important to observe attentively the development of new practices as signs of paradigmatic changes.

As we have seen, the creative digital text seems to privilege some reading strategies over others. The use of synaesthesia and serendipity, the management of ambiguity and

chaos through a subliminal type of reading, the need to contextualize become necessary in order to extract some pleasure and sense from reading. The literature teacher will also have an important role introducing students to the wider discourse of cyberculture: the contextual frame in which literary notions have acquired new meanings, such as narrativity; old concepts have morphed, such as the idea of *wreader*, and new genres have emerged, such as hypertext. Cybercultural artefacts demand an interpretative context of their own, a new rhetoric of reading and writing that we have to be prepared to accommodate inside our daily teaching practices.

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