Languages, Books, and Reading from the Printed Word to the Digital Text

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I would like to begin this reflection on languages, books, and reading in the age of electronic textuality with two fables, as the author calls them. The first relates an enduring nostalgia in the face of a loss of linguistic unity; the second presents the disturbing reality of its utopian restoration. Borges's "The Congress" was published in 1975 in *The Book of Sand.* In this fable, Alejandro Ferri, who, like Borges himself, wrote an essay on the analytical idiom of John Wilkins, is assigned to identify a language that should be used by the participants of the "Congress of the World," one that would "represent all men of all nations."[1] In order to find such a language of universal communication, the initiators of the project send Ferri to London. He describes his stay:

> I roomed at a modest boarding house behind the British Museum, where mornings and afternoons I studied in the library in search of a language worthy of the Congress of the World. I did not overlook universal languages, investigating both Esperanto—which Lugones qualifies as "impartial, simple, and economical"—and Volapük, which, declining verbs and conjugating nouns, attempts to work out all linguistic possibilities. I also weighed the arguments in favor of and against the revival of Latin, a nostalgia for which has endured down through the centuries. I even dwelled on an examination of John Wilkins' ana-

1. Jorge Luis Borges, "El Congreso," *El libro de arena* (Madrid, 1995), p. 35; hereafter abbreviated "EC"; trans. under the title "The Congress," *The Book of Sand,* by Norman Thomas di Giovanni (New York, 1977), p. 33; hereafter abbreviated "C" ("un Congreso del Mundo que representaría a todos los hombres de todas las naciones").

133

lytical language, in which the definition of each word is to be found in the letters that spell it out. ["C," p. 42][2]

Ferri examines the three types of languages that are capable of going beyond the infinite diversity of vernacular languages. First of all, he looks at the artificial languages invented during the nineteenth and twentieth centuries, such as Esperanto or Volapük that were supposed to assure understanding and concord between all peoples.[3] Second, he considers a possible return to a language that was, throughout the history of the West, a universal vehicle of communication: Latin. And, third, Ferri examines the formal languages that promise, as the philosophical language of Wilkins, a perfect correspondence between words in which each letter is a signifier and the categories, elements, and the individual things that the words describe. If we look at what Borges himself wrote on this language that was invented in England in 1668, we can see how the perfect language functions: "*de* means element; *deb,* the first of the elements, fire; *deba,* a portion of the element of fire, a flame."[4] In this analytical, perfect language, each word is defined by itself, and the language becomes a classification of the universe.

In the end, Ferri's research at the British Library proves useless. To convene a Congress of the World was ultimately an absurd notion, as Don Alejandro, the man who initiated the project, admits:

"It has taken me four years to understand what I am about to say," don Alejandro began. "My friends, the undertaking we have set for ourselves

2.

Me hospedé en une módica pensión a espaldas del Museo Británico, a cuya biblioteca concurría de mañana y de tarde, en busca de un idioma que fuera digno del Congreso del Mundo. No descuidé las lenguas universales; me asomé al esperanto—que el *Lunario sentimental* califica de "equitativo, simple y económico"—y al Volapük, que quiere explorer todas las posibilidades lingüísticas, declinando los verbos y conjugando los sustantivos. Consideré los argumentos en pro y en contra de resucitar el latín, cuya nostalgia no ha cesado de perdurar al cabo de los siglos. Me demoré asimismo en el examen del idioma analítico de John Wilkins, donde la definición de cada palabra está en las letras que forman. ["EC," pp. 45–46]

3. See Anne Rasmussen, "A la recherche d'une langue internationale de la science 1880–1914," in *Sciences et langues en Europe,* ed. Roger Chartier and Pietro Corsi (Paris, 1996), pp. 139–55.

4. Borges, "El idioma analítico de John Wilkins," *Otras inquisiciones* (Madrid, 1976); trans. under the title "The Analytical Language of John Wilkins," *Other Inquisitions 1937–1952,* by Ruth L. C. Simms (Austin, Tx., 1964), p. 102.

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is so vast that it embraces—I now see—the whole world. Our Congress cannot be a group of charlatans deafening each other in the sheds of an out-of-the-way ranch. The Congress of the World began with the first moment of the world and it will go on when we are dust. There's no place on earth where it does not exist." ["C," p. 47][5]

Therefore, the search for a universal language was as futile an idea as that of convening a Congress of the World because the world is already there, made up of an insurmountable diversity of places, things, individuals, and languages. To attempt to erase that multiplicity is to design a disturbing future.

In another fable also published in *The Book of Sand,* "Utopia of a Tired Man," the world of the future, in which the narrator is lost, has returned to linguistic unity.[6] The visitor to the future, Eudoro Acevedo, who, like the author, is a professor of English and American literature and a writer of imaginative tales and who, like Borges when he was director of the Biblioteca Nacional in Buenos Aires, has an office on Mexico Street, does not know how to communicate with the very tall man he encounters:

I tried out various languages, and we did not understand each other. When at last he spoke, he did so in Latin. I dusted off what I remembered from my now distant school days, readying myself for conversation.

"By your clothes, I see you come from another century," he said. "A diversity of tongues favored a diversity of peoples and even of wars. The world has fallen back on Latin. There are those who fear it may degenerate again into French, Lemosi, or Papiamento [a language that sounds like birdsongs, spoken by certain island peoples of Central America], but that is not an immediate risk. Be that as it may, neither the past nor the future interests me." ["U," p. 90][7]

5. "Cuatro años he tardado en comprender lo que les digo ahora. La empresa que hemos acometido es tan vasta que abarca—ahora lo sé—el mundo entero. No es unos cuantos charlatanes que aturden en los galpones de una estancia perdida. El Congreso del Mundo comenzó con el primer instante del mundo y proseguirá cuando seamos polvo. No hay un lugar en que no esté" ("EC," p. 51).

6. See Borges, "Utopía de un hombre que está cansado," *El libro de arena,* pp. 96–106; hereafter abbreviated "UH"; trans. under the title "Utopia of a Tired Man," *The Book of Sand,* pp. 89–104; hereafter abbreviated "U."

7.

Ensayé diversos idomas y no nos entendimos. Cuando él habló lo hizo en latín. Junté mis ya lejanas memorias de bachiller y me preparé para el diálogo.

"Por la ropa . . . veo que llegas de otro siglo. La diversidad de las lenguas favorecía la diversidad de los pueblos y aun de las guerras; la tierra ha regresado al latín. Hay quienes temen que vuelva a degenerar en francés, en lemosín o en papiamento, pero el riesgo no es inmediato." ["UH," p. 97]

The linguistic unity that has been recovered thanks to a return to Latin at the same time signifies the loss of history, identities, and names: "'You said your name is Eudoro. I can't tell you my name, because I'm simply called Someone'" ("U," p. 91).[8] And, what is worse, this return to a world without memory, without museums, without libraries, leads to an accepted destruction. Leaving the house with its inhabitants, Eudoro Acevedo notices a disturbing building: "In the distance I made out a kind of tower, crowned with a cupola. 'It's the crematory,' someone said. 'Inside it is the lethal chamber. It's said to have been invented by a philanthropist whose name, I think, was Adolf Hitler'" ("U," p. 96).[9] The utopia of a world without differences, without inequality, without a past ultimately resembles death. Commenting in the epilogue of *The Book of Sand* on the different tales he had assembled, Borges states that "Utopia of a Tired Man" is "the most honest and melancholy piece in the collection."[10] Melancholy, no doubt, because everything that in classic utopias appears to promise a better future, without wars, without poverty or wealth, without governments here leads to the loss of that which defines the very humanity of human beings: memory, names, and differences.

These various lessons Borges teaches us are perhaps not irrelevant for a better understanding of the present. Indeed, what is the language of this new "World Congress" that is being constructed by electronic communication? Such a language recalls the three characteristics of the universal languages Ferri encountered in the British Library. The first, the most immediate, the most obvious characteristic is related to a domination by a specific language, English, as the universally accepted language of communication, within and beyond the electronic medium, both for scientific publications and for informal exchanges. Such domination reflects the control exerted by the most powerful—that is, American—multimedia companies over the digital database market, the websites, and the production and dissemination of information. As in the frightening utopia imagined by Borges, such an imposition of a single language and of the cultural model that it conveys can only lead to the mutilating destruction of diversity.

But this new way of raising the "questione de la lengua"—as the Italians of the Renaissance, from Pietro Bembo to Baldassare Castiglione, once

8. "Me has dicho que te llamas Eudoro; yo no puedo decirte cómo me llamo, porque me dicen alguien" ("UH," p. 99).

9. "Divisé una suerte de torre, coronada por una cúpula.—Es el crematorio—dijo alguien—. Adentro está la cámara letal. Dicen que la inventó un filántropo cuyo nombre, creo, era Adolfo Hitler" ("UH," pp. 105–6).

10. Borges, afterword to *El libro de arena,* p. 124; trans. under the title afterword to *The Book of Sand,* p. 124 ("La pieza más honesta y melancólica de la serie").

said—which is connected to the domination of English, must not obscure two innovations of electronic textuality. On the one hand, the electronic text reintroduces into writing an element of the formal languages that, beginning in the eighteenth century, or even the seventeenth, sought a symbolic language capable of adequately representing different processes and registers of thought. Thus Condorcet in his *Esquisse d'un tableau historique des progrès de l'esprit humain,* written in prison during the French Revolution, stresses the need for a universal language capable of formalizing cognitive operations and logical reasoning and that could be translated into different vernacular languages. Such a universal language could be written with conventional signs—symbols, charts, tables—which he calls technical methods, that enable the formal transcription of relationships between objects to be known and operations for knowing them. The universal language that Condorcet imagines is made possible by the invention and the dissemination of the printing press that allows the fixing and standardization of graphic conventions.[11] In the contemporary world a new formal language is being created in relation to the electronic text, a language that proposes pictographic signs that are immediately decipherable by everyone regardless of the idiom that they speak and write. Emoticons are symbols that use different keyboard characters (parentheses, comma, semicolon, colon) to indicate the emotional significance the writer wishes to attribute to what he or she is writing: joy :-) sadness :-(irony ;-) anger :-@ and so on. Emoticons reflect the search, within the language written on the screen, for a nonverbal language that, for this very reason, enables the communication of emotions and can unambiguously establish the semantic register on which the discourse should be understood.

On the other hand, it is possible to say that the English of electronic communication is at least as much an artificial language with a unique vocabulary and syntax as it is a particular idiom raised to the level of universal language. In a certainly less obvious way than what can be said of the languages invented in the nineteenth century, the English transformed into a lingua franca of the electronic world is nevertheless a sort of new language that reduces its lexicon, simplifies its grammar, invents new words, and multiplies abbreviations. The ambiguity of a universal language that is rooted in a specific language but which nonetheless utilizes original conventions has several important consequences.

First, there is a reinforcement in the United States of the belief in an unshared hegemony of the English language and thus the implication that

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11. See Chartier, *Culture écrite et société: L'Ordre des livres (XIVe–XVIII siècle)* (Paris, 1996), pp. 20–24.

it is unnecessary to learn other languages. A long time before the development of the digitalized world, a former governor of Texas, "Ma" Ferguson, declared: "If English was good enough for Jesus, it's good enough for the children of Texas."[12] In our times, according to statistics published by the *New York Times* in April 2001, only 8 percent of American high school and college students study a foreign language.[13] Second, electronic English to a certain extent implies a specific training that is not necessarily obtained through the study of the English language in its classic form. As Geoffrey Numberg points out: "The English that one finds on the web is in some ways more difficult than that which is required to be able to write formal texts."[14]

A third consequence is the graphic imperialism of English, a language that has neither tildes nor accents, and which often forces languages such as French, Italian, Portuguese, or Spanish to eliminate them on the computer screen. As Emilia Ferreiro notes, linguistic imperialism is thus accompanied by a graphic imperialism that subjects other languages to its laws when they are written or read through the medium of electronic communication.[15]

It is possible to qualify these statements because the gap between the English-language community and others in the electronic world is narrowing. Nevertheless the data published by the electronic site Global Internet Statistics show that an overwhelming majority of electronic addresses are located in English-speaking countries—45 percent, as compared to only 4.5 percent for Spanish, 3.7 percent for French, and 2.5 percent for Portuguese.[16] Such an imbalance is a clear reflection not of the respective demographic weight of the different linguistic communities but of their unequal level of development, whether economic, social, or cultural.

The second reality is that progress in the teaching and learning of languages, particularly in Europe and Latin America, if not in the United States, has enabled the possibility of communications in which each person uses his or her own language while being capable of understanding that of someone else. It is from this perspective that we might define a modern polyglotism such as that which Umberto Eco proposes in his book on the search for the perfect language:

12. The quote can be found at www.austinchronicle.com/issues/dispatch/2002–06–14/pols-capitol.html

13. See *New York Times,* 16 Apr. 2001, pp. A1, A10.

14. Geoffrey Numberg, "La Langue des sciences dans le discourse électronique," in *Sciences et langues en Europe,* p. 254.

15. See Emilia Ferreiro, *Pasado y presente de los verbos leer y escribir* (Mexico City, 2002), pp. 55–56.

16. See Global Internet Statistics, http://www.euromktg.com/globstats/index.php3

> Generalized polyglottism is certainly not the solution to Europe's cultural problems, like Funes '*el memorioso*' in the story by Borges, a global polyglot would have his or her mind constantly filled by too many images. The solution for the future is more likely to be in a community of peoples with an increased ability to receive the spirit, to taste or savour the aroma of different dialects.[17]

Here we have a fundamental challenge concerning linguistic studies that should enable individuals not to speak or write every language, but at the very least to understand a rather large number of them so that multilingual communication will become possible. This also implies a pedagogical project that has consequences for the teaching of languages and a civic project that alone can prevent the domination of a single language, whatever it might be.

Monolingual or polyglot, the world of electronic communication is a world of textual overabundance in which the written texts that are offered go far beyond the reader's ability to take advantage of them. Often, literature has denounced the uselessness of accumulated books, the excessive number of texts, the overload of information.[18] Such a diagnosis expresses a strong concern over a growing textual world that has become uncontrollable. In the utopian world of "Utopia of a Tired Man," the dialogue between Acevedo and the nameless man he has encountered in the future describes this anxiety in its own way. Acevedo leafs through a 1518 edition of Thomas More's *Utopia* and declares:

> "It's a printed book. At home, I had over two thousand of them, though they were neither as old nor as valuable as this one." I read the title aloud.
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> The man laughed. "No one can read two thousand books. In the four centuries I have lived, I haven't read more than half a dozen. Besides, re-reading, not reading, is what counts. Printing—which is now abolished, since it tended to multiply unnecessary texts to the point of dizziness—was one of man's worst evils." ["U," p. 92][19]

17. Umberto Eco, *La ricerca della lingua perfetta nella cultura europa* (Rome, 1993); trans. under the title *The Search for the Perfect Language,* by James Fentress (Oxford, 1995), pp. 350–51.

18. See Ann Blair, "Reading Strategies for Coping with Information Overload ca. 1550–1700," *Journal of the History of Ideas* 64 (Jan. 2003): 11–28.

19.

"Es un libro impreso. En casa habrá más de dos mil, aunque no tan antiguos ni tan preciosos."
   Leí en voz alta el título.
   El otro se rió.

More than three centuries earlier, the dialogue that Lope de Vega invents in his *comedia Fuente Ovejuna* between Barrildo the peasant and Leonelo, a student who has just come back from Salamanca, illustrates the same lack of trust in the multiplication of books brought about by the invention of the printing press—a recent invention in 1476, the date of the historic events recounted in Lope's *comedia.* Barrildo praises the effects of the printing press ("So many books are being printed now, / There's not a soul but boasts he is a sage!"), and Leonelo responds: "It seems to me they know less than before, / Because the great excess of books creates / Confusion in the minds of readers now, / And avid readers are the most confused / By all the titles." Surprised by this remark, Barrildo asserts: "But printing is important, all the same," of which the "*licenciado*" is hardly convinced: "The world got on without it very well / For many centuries, and in this one / There is no St. Jerome or Augustine!"[20] The increasing number of books is a source of confusion rather than of knowledge, and the printing press that generated such an excessive number of books did not produce any new geniuses.

This leads us to a question regarding the present: how are we to view reading when we are confronted with textual offerings that are increasing even more rapidly through electronic technology than they ever did with the invention of the printing press? In 1725 Adrien Baillet wrote in a work entitled *Jugemens des savants sur les principaux ouvrages des auteurs:* "We have reason to fear that the multitude of books that is increasing every day in a prodigious manner will put the centuries to come into as difficult a state as that in which barbarity had put the earlier ones after the fall of the Roman Empire."[21] Was Baillet right, have we fallen into a textual barbarity similar to that which followed the fall of the Roman Empire and do we share the same anxiety vis-à-vis the excessive number of texts, information overload, and uselessness of accumulated discourse? To respond to this question, we must carefully distinguish between the different levels of changes that characterize the revolution of digital texts. The first changes relate to

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"Nadie puede leer dos mil libros. En los cuatro siglos que vivo no habré pasado de una media docena. Además no importa leer, sino releer. La imprenta, ahora abolida, ha sido uno de los peores males del hombre, ya que tendió a multiplicar hasta el vértigo textos innecesarios." ["UH," p. 100]

20. Lope de Vega, *Fuente Ovejuna,* trans. William E. Colford (Woodbury, N.Y., 1969), pp. 63, 65. Spanish text: "Barrildo: Después que vemos tanto libro impreso, / no hay nadie que de sabio no presuma. Leonelo: Antes que ignoran más siento por eso, / por no se reducir a breve suma; / porque la confusión, con el exceso, / los intentos resuelve en vana espuma; / y aquel que de leer tiene más uso, / de ver leteros sólo está confuso" (ibid., p. 62).

21. Adrien Baillet, "Advertissement au lecteur," *Jugemens de savants sur les principaux ouvrages des auteurs* (Amsterdam, 1725). I owe this reference to Ann Blair.

the order of discourse, the second to that of reason, and the third to that of property.

In the order of discourse, we are confronted with what is perhaps the most fundamental rupture of all. Indeed, in the written culture as we know it, such an order is established from the relationship between objects (the letter, the book, the newspaper, the magazine, the poster, the form, and so on), categories of texts, and different uses of the written word. This connection, which links types of objects, categories of texts, and forms of reading, is the result of a historical layering of three fundamental innovations. The first took place in the early centuries of the Christian era when the codex as we still know it, that is, a book made up of leaves and pages gathered into the same binding or covering, replaced the scroll or *volumen,* that book of a completely different structure which belonged to Greek and Roman readers.[22]

The second rupture occurred in the fourteenth and fifteenth centuries, before Gutenberg's invention, with the appearance of the *libro unitario,* as Armando Petrucci called it, the book that, for texts in the vernacular, assembled in the same binding all the works of a single author, or even just one sole work.[23] Although this type of book was already the rule for juridical collections, canonical works of the Christian tradition, or the classics of antiquity, the same was not true for texts in the vernacular that, in general, were assembled into miscellanies made up of works of different dates, genres, or languages. It was around figures such as Petrarch or Boccaccio, Christine de Pisan or René of Anjou that, for "modern" writers, the unitary book was born, that is, a book in which the connections between the material object, the work (in the sense of a specific work or of a series of works), and the author were finally established.

The third legacy is, of course, the invention of the printing press in the mid-fifteenth century. From that moment on, without it having caused the disappearance of scribal publication—far from it—the printing press became the most utilized technology for the reproduction of the written word and for the production of books.[24]

22. See Colin H. Roberts and T. C. Skeat, *The Birth of the Codex* (London, 1987); *Les Débuts du codex: Actes de la journée d'étude,* ed. Alain Blanchard (Turnhout, 1989); and Guglielmo Cavallo, "Testo, libro, lettura," in *Lo spazio letterario di Roma antica,* ed. Cavallo, Paolo Fedeli, and Andrea Giardino, 5 vols. (Rome, 1989–91), 2:307–41 and "Libro e cultura scritta," in *Storia di Roma,* ed. Aldo Schiavone, 4 vols. (Torino, 1988–93), 4:693–734.

23. See Armando Petrucci, "From the Unitary Book to Miscellany," *Writers and Readers in Medieval Italy: Studies in the History of Written Culture,* trans. Charles M. Radding (New Haven, Conn., 1995), pp. 1–18.

24. See Elizabeth Eisenstein, *The Printing Press as an Agent of Change: Communications and Cultural Transformations in Early Modern Europe* (Cambridge, 1979) and *The Printing Revolution in Early Modern Europe* (Cambridge, 1983), and Adrian Johns, *The Nature of the Book: Print and Knowledge in the Making* (Chicago, 1998).

We are the heirs of these three historical developments, as much for the definition of the book that is for us both an object different from other objects of written culture and an intellectual or esthetic work endowed with an identity and a coherence assigned to its author, as for a perception of written culture based on immediate, material distinctions between objects that are associated with different textual genres and usages.

It is this order of discourse that electronic textuality calls into question. Indeed, it is the same apparatus, in this case the computer screen, that enables different types of texts to appear in front of the reader, texts that, in the world of the scribal and a fortiori printed cultures, were distributed among distinct objects. In the digital word, all texts, whatever their genre, are produced or received through the same medium and in very similar forms, usually decided on by the reader him- or herself. Thus a textual continuity is created that no longer differentiates discourses on the basis of their materiality. Hence the anxiety or the confusion of readers who must confront or overcome the disappearance of the most strongly internalized criteria that enabled them to distinguish, to classify, and to categorize different types of discourse.

Because of this, the perception of individual works as works becomes more difficult. Reading in front of the computer screen is generally a discontinuous reading process that seeks, using keywords or thematic headings, the fragment that the reader wishes to find: an article in an electronic periodical, a passage in a book, or some information in a website. This is done without the identity or coherence of the entire text from which the fragment is extracted necessarily being known. In a certain sense, one might say that in the digital world all textual entities are like databases that offer fragments, the reading of which in no way implies a perception of the work or the body of works from which they come.

Regarding the order of discourse, the electronic world thus creates a triple rupture: it provides a new technique for inscribing and disseminating the written word, it inspires a new relationship with texts, and it imposes a new form of organization on texts. The originality and the importance of the digital revolution must therefore not be underestimated insofar as it forces the contemporary reader to abandon—consciously or not—the various legacies that formed it. This new form of textuality no longer uses printing (at least in its typographic sense), it has nothing to do with the *libro unitario,* and it is foreign to the material nature of the codex. It is therefore a revolution that in the same period in time, and for the first time in history, combines a revolution in the technical means for reproducing the written word (as did the invention of the printing press), a revolution in the medium of the written word (like the revolution of the codex), and a revolution

in the use of and the perception of texts (as in the various revolutions in reading). This no doubt explains the confusion of the contemporary reader who must transform not only the intellectual categories he or she has employed to describe, structure, and classify the world of books and of other written materials but also his or her most immediate perceptions, habits, and gestures.

The second change concerns the order of reasoning, if by that we mean the way an argument is organized and the criteria that a reader might employ to agree or to disagree with it. For the author, electronic textuality enables the development of demonstrations and arguments following a logic that is no longer necessarily linear or deductive, as is the logic imposed by the inscription, however it is done, of a text onto a page. It enables an open, fragmented, relational articulation of the reasoning, made possible by hypertextual connections.[25] For the reader, the validation or the refutation of an argument can henceforth occur by consulting texts (but also images, recorded speech, or musical compositions) that are the very object of the study, provided, or course, that they are accessible in digital form. If that is the case, the reader is no longer constrained to trust the author; he or she can in turn carry out all or part of the author's research. Here we have a fundamental epistemological mutation that profoundly transforms the techniques of proof and the modalities of the construction and validation of the discourse of knowledge.[26]

Let us take an example: In the world of the printed word, the history book assumes a pact of trust between the historian and the reader. Notes refer to documents that the general reader will not be able to obtain. Bibliographical references mention books that the reader, most often, will only be able to read in a library. Citations are fragments that the historian alone chooses to extract, without the reader being able to know the complete text out of which they came. These three classic means for a proof (notes, references, and citations)[27] are profoundly modified in the world of digital

25. For the new possibilities in argumentation offered by the electronic text, see David Kolb, "Socrates in the Labyrinth," in *Hyper/Text/Theory,* ed. George P. Landow (Baltimore, 1994), pp. 323–44, and Jane Yellowlees Douglas, "Will the Most Reflexive Relativist Please Stand Up: Hypertext, Argument, and Relativism," in *Page to Screen: Taking Literacy into the Electronic Era,* ed. Ilana Snyder (London, 1988), pp. 144–61.

26. For the definitions of hypertext and hyperreading, see J. David Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing* (Hillsdale, N.J., 1991); Landow, *Hypertext: The Convergence of Contemporary Critical Theory and Technology* (Baltimore, 1992) and *Hypertext 2.0* (Baltimore, 1997); Snyder, *Hypertext: The Electronic Labyrinth* (Melbourne, 1996); and Nicholas C. Burbules, "Rhetorics of the Web: Hyperreading and Critical Literacy," in *Page to Screen,* pp. 102–22.

27. On the citation, compare Michel de Certeau, *L'Écriture de l'histoire* (Paris, 1975), pp. 109–13; on the note, compare Anthony Grafton, *The Footnote: A Curious History* (Cambridge, Mass., 1998).

textuality from the moment when the reader is in a position to be able to read a book read by the historian and to directly consult the analyzed documents him- or herself. The first uses of these new modalities in the production, organization, and accreditation of scholarly discourse show the importance of the transformation of cognitive operations implied by the use of electronic texts.[28]

A third level of change is linked to the order of property, meaning property both in a juridical sense, that of literary property or of copyright, and in a textual sense, that of the characteristics proper to each written text or genre. The electronic text as we know it or have known it is a moving, malleable, open text. The reader can intervene not only in its margins, but in its very content, by removing, reducing, adding, or reworking textual units. Unlike the manuscript or printed objects in which the reader can add his or her writing only within the blank spaces of the handwriting or typographical composition, with the digital world the reader can intervene within the text itself. The consequences are important. They lead to the disappearance of the name and the presence of the author because the text is constantly modified by a multiple and collective writing. One might think that this possibility offers writing the new form Michel Foucault has dreamt of many times while imagining an order of discourse in which the individual appropriation of texts would disappear and in which each writer, anonymously, would leave his or her mark in the layers of an authorless discourse.[29]

But the mobility of the open and malleable text seriously challenges the criteria and the categories that, at least since the eighteenth century, established the author's ownership of his or her works and consequently the publisher's ownership of the works he or she has acquired. The recognition of copyright (the word appeared in 1704 in the registers of the Stationers Company) implies that the work can be firmly identified in its uniqueness and originality. Thus in the eighteenth century Blackstone, one of the lawyers involved in the trials that have contributed to the birth of the notion of

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28. For an example of the possible connections between historical demonstration and documentary sources, see the two forms, printed and electronic, of the article by Robert Darnton, "Presidential Address: An Early Information Society: News and the Media in Eighteenth-Century Paris," *American Historical Review* 105 (Feb. 2000): 1–35 and *AHR* webpage: www.historycooperative.org/ahr/. See, as examples, for theoretical physics, Josette F. de la Vega, *La Communication scientifique à l'épreuve de l'Internet: L'Émergence d'un nouveau modèle* (Villeurbanne, 2000), in particular pp. 181–231; for philology, *Filología e Informática: Nuevas tecnologías en los estudios filológicos,* ed. José Manuel Blecua (Barcelona, 1999); and for history, Rolando Minuti, *Internet et le métier d'historien: Réflexions sur les incertitudes d'une mutation* (Paris, 2002).

29. See Michel Foucault, "Qu'est-ce qu'un auteur?" *Dits et écrits, 1954–1988,* ed. Daniel Defert, François Ewald, and Jacques Lagrange, 4 vols. (Paris, 1994), 1:789–821.

literary property, justified the ownership of the author by stating that a work is always the same if, beyond the variations in its material forms, what he described as sentiment, style, or language can be recognized. A close connection is thus established between the unique identity of the texts, always detectable and perpetuated, and the juridical and aesthetic regime that attributes ownership to their authors.[30] This is the foundation of the notion of copyright that protects a work that is assumed always to be the same regardless of the forms of its publication. It is obvious that the palimpsestic and polyphonic texts of digital textuality challenge the very possibility of recognizing such a fundamental identity.[31]

This challenge has led to a reflection that has begun in the last few years regarding whether or not it is possible in digital textuality to reconstitute a perpetuated and perceptible identity for texts or, at least, for certain texts. This has also led to the suggestion for a reorganization of the digital world so that authors' rights, as well as those of their publishers, can be protected. This reorganization could lead to a stronger distinction (even if it is made difficult by the medium, which is a single machine transmitting different sorts of texts) between, on the one hand, electronic communication as we know it, which makes it possible to send or receive open, mobile, free texts, and on the other, electronic publishing, which is the result of editorial work and implies that the text is fixed, delimited, and closed so that its ownership is clearly defined and, by that fact, so are the rights of the author and the income of the publisher. This discussion has truly crystallized around the advent of the e-book because this new type of computer product does not allow the transmission, copying, modification, or even printing of texts published in an electronic form and placed on the market. Electronic publishing, which implies the same operations as conventional publishing (the preparation of texts, the creation of a catalogue, copyediting) would thus be defined in contrast to the free and spontaneous communication on the digital network.[32]

The tension between the free communication of ideas and research and electronic publishing that fixes and closes texts is a major issue in the conflicts between scientific communities and publishers. In the last few years, a very heated controversy has opposed scientific journals, which have increased the number of electronic editions protected by passwords that pro-

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30. See Mark Rose, *Authors and Owners: The Invention of Copyright* (Cambridge, Mass., 1993), pp. 89–90.

31. See Jane C. Ginsburg, "Copyright without Walls? Speculations on Literary Property in the Library of the Future," *Representations,* no. 42 (Spring 1993): 53–73.

32. See Darnton, "The New Age of the Book," *New York Review of Books,* 18 Mar. 1999, pp. 5–7.

hibit the copying or printing of articles in order to maintain a captive market for journals, subscriptions to which can cost up to $10,000 or $12,000, and researchers, in particular those in the biological and cognitive sciences, who demand free access to the advances in research. Two different logics are at issue here: the logic of free communication, which is associated with the ideal of the Enlightenment that upheld the sharing of knowledge, and the logic of publishing based on the notions of an author's rights and of commercial gain. For reaching a compromise, certain journals, such as *Molecular Biology of the Cell* or *Science,* have agreed to allow their articles to be freely consulted after a few months or a year of restricted access.[33]

The example of journals illustrates the profound difference that exists between readings of the "same" text when it is moved from a printed medium to an electronic form. The case of newspapers is particularly illuminating. In the printed newspaper, the meaning the reader gives to each article depends on the presence, on the same page or in the same issue, of other articles or other elements (photographs, cartoons, advertisements, and so on). The reader constructs the meaning of any article by relating it, even unconsciously, to what precedes it, accompanies it, or follows it, and from his or her perception of the editorial intent and of the intellectual or political design that governs the publication. In an electronic form, a reading of the "same" article is organized out of the logical architecture that structures the domains, the themes, the headings, and the keywords. Such a reading proceeds in the same way as the analytical language of Wilkins, that is, from an encyclopedic organization of knowledge that proposes texts to the reader that have no other context than that attributed by their belonging to a certain theme. This difference must be pointed out at a time when, in all the libraries of the world, people are discussing the need to create digital collections, in particular of newspapers and journals. Digitization projects that will enable long-distance communication are absolutely essential. But they must never lead to the abandonment or, worse, the destruction of printed works in their original form.

The heated debate opened in the United States over novelist Nicholson Baker's *Double Fold: Libraries and the Assault on Paper,* devoted to the deplorable effects of microfilming collections of books and newspapers, shows that the fear of more destruction, through digitization this time, is not without precedent.[34] Since the 1960s, the Council on Library Resources has upheld a policy of reproducing millions of volumes and periodicals on microfilm, citing two justifications: the need to empty out library storage

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33. See *Libération,* 14–15 Apr. 2001, pp. 16–17.
34. See Nicholson Baker, *Double Fold: Libraries and the Assault on Paper* (New York, 2001).

areas to make room for new acquisitions and the importance of preserving texts by transferring them onto a new medium. This policy was carried to the extreme in England in 1999 when the British Library decided to sell or destroy all its collections of American newspapers dating after 1850 after microfilming them. The consequences were disastrous on both sides of the Atlantic, with the disappearance of entire collections, destroyed during the work of microfilming itself or broken up in order to sell individual issues. The scandal was such that in England and the United States a step was taken backward in the assault on paper and the great massacre of newspapers and books was halted.[35] But the losses are immense and irreparable. That lesson must not be forgotten today, when the possibilities offered by digitization increase the number of collections accessible from a distance but also reinforce the idea that there is an equivalence between media and that a text is still the same regardless of its form: printed, microfilmed, or digital. That notion is fundamentally wrong since the processes through which a reader attributes meaning to a text depend, consciously or not, not only on the semantic content of the text but also on the material forms through which the text was published, distributed, and received.[36] Therefore, it is essential that the ability to consult texts in their successive forms be preserved and that the process of digitization—completely necessary, by the way—never lead to the destruction of the objects that transmitted written works to the readers of the past and even of the present.

As D. F. McKenzie strongly emphasizes, "forms effect sense."[37] A text is always conveyed by a specific materiality: the written object upon which it is copied or printed; the voice that reads, recites, or otherwise utters it; the performance that allows it to be heard. Each of these forms of publication is organized in its own unique fashion, and each form, in different ways, influences how meaning is produced. Thus, looking only at the printed text, the format of the book, the layout, the divisions of the text, typographic conventions, punctuation, all are invested with an expressive function. As a result of different intentions and interventions (those of the author, publisher, printer, typesetters, or copyeditors), these elements are used to give a status to the text, to constrain its reception, to control the reader's understanding of it. Guiding the reader's—or the listener's—unconscious, they govern, at least in part, the process of interpreting and appropriating the written word.

Such a perspective forces one to reject all critical approaches according

35. See Darnton, "The Great Book Massacre," *New York Review of Books,* 26 Apr. 2001, pp. 16–19.

36. See D. F. McKenzie, *Bibliography and the Sociology of Texts* (London, 1986).

37. Ibid., p. 9.

to which meaning is produced only out of the automatic and impersonal functioning of language. This position, which completely detaches the text from its materiality, is the one held by structuralist critics or by the New Criticism. It is based on several postulates: the reduction of the text to its verbal structure alone, the insignificance of the author whose intention is without any importance, and the separation between the single or several meanings of the work and the historical modalities of its transmission, reception, and interpretation.

In a 1977 essay McKenzie proposed an approach that was completely different from the one that viewed a text as having no materiality, no author, and no readers.[38] The analysis of the innovations introduced into the 1710 publication of the works of William Congreve, by the playwright himself; his publisher, Jacob Tonson; or the master printer, John Watts shows how material and formal changes, apparently devoid of textual significance (for example, the change from the quarto to the octavo format, the numbering of scenes, the presence of an ornament between each scene, listing at the beginning of each scene the names of the characters to be present at the same time on the stage, stage directions) have an important effect on the status and the understanding of the plays.

On the one hand, such changes enable a reader of the plays to experience something of the dramatic movement, how the actors move, how the scenes unfold. On the other hand, the typographic layout used in the publication, which imitates editions of French plays, gives a new status to Congreve's works, granting them a legitimacy that led their author to eliminate certain licentious passages in order to make the plays more appropriate to the dignity that their new printed form granted them.

We can derive many lessons from this pioneering study: in contrast to an abstraction of the text, which reduces it to its semantic structure, it demonstrates that the status and the interpretations of a work depend upon its successive forms; in contrast to the death of the author, according to Roland Barthes's expression, it emphasizes the role that the author can play, along with others (the publisher, the printer, the typesetters, the editors) in the always collective process that gives texts their materiality; in contrast to an absence of readers, it reminds us that the meaning given to a text is a historical production, located at the crossroads of the abilities or expectations of the readers and of the designs, both graphic and discursive, that organize the objects being read.

38. See McKenzie, "Typography and Meaning: The Case of William Congreve," *Making Meaning: "Printers of the Mind" and Other Essays,* ed. Peter McDonald and Michael F. Suarez (Amherst, Mass., 2002), pp. 198–236.

In stating that "new readers . . . make new texts, and that their new meanings are a function of their new forms," McKenzie leads us to consider the relationship that connects the varied forms in which written works are presented, the definition of the audience of their potential readers, and the meaning that those readers attribute to the texts they appropriate.[39] Thus we can understand how the status and the reading of theatrical works are changed by the transformations in the way they are published.[40] Multiple are the effects of such transformations—for example, the theological consequences, very strongly emphasized by the concerns of John Locke, of the dividing of the Bible into verses; or further, the many instances of the play between typographical layout and textual meanings Joyce introduced in the original 1922 edition of *Ulysses*—and which have been lost in all subsequent editions that have changed the layout of the text. The novel, at least from the time of Richardson, is another example of the effects produced on the text by the changes in its materiality, either because they alter its literality, as is the case with abridged versions or anthologies of remarkable passages[41] or because, without altering the work, they present it in forms that anticipate very diverse expectations and reading habits: the serial in a magazine or publication in installments, both of which present the work over time, the book intended for the circulating libraries that fragments the work into several volumes, cheap editions, fiction anthologies, the "works" of a single author, and so on. In each case the very form of the publication of the "same" text demands quite different modalities of categorization, classification, or of the understanding of the "same" work.

Such a position leads to two essential conclusions. On the one hand, it is clear that, far from being mutually exclusive, a morphological analysis of the materiality of texts and a social and cultural analysis of readers and reading must necessarily be combined. It is in function of the assumed abilities and expectations of the targeted readers that the author, publisher, or printer decide on the forms that texts will be given. But those forms, in fact, have their own dynamics that can, or may not, create a new audience (for example, one that is wider and less elite) and encourage a new appropriation of texts that previously circulated in other ways and among other readers. An emphasis on the very materiality of texts enables one to challenge a too narrow sociological approach that implicitly states that prior, crystallized

39. McKenzie, *Bibliography and the Sociology of Texts*, p. 20.

40. Compare David Scott Kastan, *Shakespeare and the Book* (Cambridge, 2001), and Margreta De Grazia and Peter Stallybrass, "The Materiality of the Shakespearean Text," *Shakespeare Quarterly* 44 (Autumn 1993): 255–83.

41. See Leah Price, *The Anthology and the Rise of the Novel: From Richardson to George Eliot* (Cambridge, 2000), pp. 13–42.

social divisions necessarily govern the unequal circulation of texts. On the contrary, it points out how, thanks to the diversity of their forms, texts are able to be revisited and reinterpreted by the different audiences that they reach or create.

The great variety of forms and thus of meanings of the same text establishes the decisive role that libraries must play at present and in the future. Granted, the electronic revolution has seemed to signal their end. The ability to transmit electronic texts anywhere in the world makes their universal availability conceivable, if not immediately possible, while at the same time the library is no longer believed to be the obligatory place for the conservation and communication of written culture. Every reader, regardless of where he or she reads, will be able to receive on the screen any text from the library without walls, where ideally all the books of humanity will exist in digital form.

The dream is no doubt seductive. But it should not mislead us. Indeed, more than ever before one of the essential tasks of libraries is to gather, protect, catalogue, and make accessible the physical objects that have transmitted the written works of the past. If these works were exlusively communicated or, worse, if they were conserved only in an electronic form, there would be a great risk of losing the intelligibility of a textual culture that is inseparable from the objects that have transmitted them. To maintain the communication of the texts in the various forms that they have, simultaneously or successively, received is essential so that we may understand the practices and readings of their previous readers. The electronic conversion of old texts and their hypertextual publication is no doubt a precious innovation that makes, paradoxically, the diversity of the forms of the "same" work more immediately obvious than does the printed word.[42] Nevertheless, it cannot be considered comparable to the intelligibility that comes from the analysis of the very objects that previous readers have held in their hands. This conclusion is valid for the most canonical of works, but is equally true for the more humble and recent products of print culture that have been and still are the first victims of the illusion that texts are only linguistic structures without material existence.

In 1978 Borges asserted: "People speak of the disappearance of the book; I believe that is impossible."[43] He was not entirely right; in his country, for two years, books were burned or destroyed and authors and publishers disappeared, assassinated. But obviously his diagnosis expressed something

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42. On the electronic publishing of the plays of Shakespeare, see Kastan, *Shakespeare and the Book,* pp. 125–36; on that of the works of Nietzsche, see *HyperNietzsche,* ed. Paolo D'Iorio (Paris, 2000).

43. Borges, "El libro," *Borges oral* (Madrid, 1998), pp. 21–22.

else: a confidence in the survival of the book in the face of new means of communication such as films, television, and recordings. Can we continue to express the same certainty today? The question is recurrent, but perhaps it is badly put insofar as the reality of our present is characterized above all by the appearance of a new technology and modality of inscription, of distribution, and of the appropriation of texts. The screens of the present are not screens of images that are to be contrasted to the culture of the written word. They are in fact screens of the written word. Granted, they convey images, both fixed and moving, sounds, spoken words, and music, but above all they transmit, multiply, perhaps in an uncontrollable excess, the written culture.

And yet we do not know how this new medium offered to readers transforms how they read. We know, for example, that reading the *volumen* in antiquity implied a continuous reading, involving the entire body because the reader had to hold the scroll with two hands, and this prevented the reader from writing while he or she read. We know that the codex, first handwritten and then printed, enabled practices previously impossible. The reader could leaf through the book, which was henceforth organized by quires, leaves, and pages. The book could be paginated and indexed, which enabled the reader to cite precisely and to easily find a given passage. Thus the form of reading encouraged by the codex is discontinuous, but it is a discontinuous reading in which the overall perception of the work, imposed by the very materiality of the book, is always present.[44] How might we characterize the reading of an electronic text?

We may advance two observations borrowed from Antonio Rodríguez de las Heras,[45] which distance us from our inherited habits or our spontaneous practices. First of all, we must not consider the screen as a page, but as a three-dimensional space, possessing width, height, and depth, as if texts arrived on the surface of the screen from deep within the monitor. Consequently, in digital space, it is not an object that is folded, as in the case of the printed page, but the text itself. Reading therefore consists of unfolding this moving and infinite textuality. Such a reading brings ephemeral, multiple, and unique textual units onto the screen, units that are created following the will of the reader, and they are in no respect pages set down once and for all. The image that has become so familiar, that of surfing the web, clearly indicates the characteristics of a new way of reading: segmented, fragmented, discontinuous. If such reading is suited to encyclopedic texts,

44. See Stallybrass, "Books and Scrolls: Navigating the Bible," in *Books and Readers in Early Modern England: Material Studies,* ed. Jennifer Andersen and Elizabeth Sauer (Philadelphia, 2002), pp. 42–79.

45. See Antonio Rodríguez de las Heras, *Navegar por la información* (Madrid, 1991), pp. 81–164.

whose fragmented structure corresponds to that type of reading, it is disturbed or disoriented by genres the appreciation of which implies familiarity with the work in its entirety and a perception of the text as an original and coherent creation. The success of electronic encyclopedias, the *Encyclopaedia Britannica* or the *Encyclopedia Universalis,* for example, as well as the disappointments of the pioneers in electronic publishing of monographs or novels, clearly attest to the connections that exist between certain ways of reading and certain literary genres and also to the greater or lesser ability of the electronic text to satisfy or to transform these inherited practices. One of the great questions of the future is whether or not digital textuality will be able to overcome the tendency toward fragmentation that characterizes both the structure of texts and the modes of reading that it proposes.

Another challenge relates to the discordance, particularly strong in the case of the youngest generation of readers who (at least among those with sufficient means) have entered into the written culture in front of a computer screen, between, on the one hand, the categories that have been established throughout the centuries to define works by their coherence and totality and, on the other, a practice that very immediately and very spontaneously fragments all types of texts. The potential consequences of such a discrepancy are not insignificant because they will lead either to the introduction of conceptual and technical devices into digital textuality that would be capable of perpetuating the classic criteria for identifying written works or to the abandonment of those very criteria in favor of a new way of perceiving and of conceiving of written texts considered as discourse that the reader feels quite free to cut up and reconstruct.

Will electronic textuality be a new and horrifying book of sand, whose number of pages was infinite, which no one could read, and which had to be buried in the storerooms of the Argentine National Library on Mexico Street?[46] Or, with the promise it offers, will it lead to an enrichment of the dialogue that each book undertakes with its reader?[47] The answer is uncertain, and no one knows it. But every day, as readers, without necessarily knowing so, we are fashioning an answer.

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46. See Borges, "El libro de arena," *El libro de arena,* pp. 130–37; trans. under the title "The Book of Sand," *The Book of Sand,* pp. 117–22.

47. See Borges, "Nota sobre (hacia) Bernard Shaw," *Otras inquisiciones,* pp. 157–60; trans. under the title "For Bernard Shaw," *Other Inquisitions,* pp. 163–66.