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INTRODUCTION

One could be forgiven for assuming that anyone who talks about the future of the book nowadays will be chiefly interested in saying whether it has one. The public discussion has been dominated by prophecies of the people the press likes to describe as “computer visionaries.” They give us a future where printed books, brick-and-mortar libraries and bookstores, and traditional publishers have been superseded by electronic genres and institutions; where linear narrative has yielded in all of its important functions to hypertext or multimedia; where the boundaries between traditional media and disciplines have been effaced; and where like as not print society has been replaced by a more harmonious and equitable discursive order. It is a vision calculated to provoke the indignant reactions of bibliophiles, like the declaration by the novelist E. Annie Proulx (cited by James O’Donnell in his essay here): “Nobody is going to sit down and read a novel on a twitchy little screen. Ever.”

Still, the parties have more in common than either of them supposes. The bibliophiles’ reactions are undeniably colored by fetishism, as witness their disproportionate concern about the difficulty of curling up in bed with a computer. (What’s more, as George Landow astutely points out here, the fetishism is a little delusional, inasmuch as the morocco-bound ideal that bibliophiles tend to invoke has little to do with the form in which most students encounter the classical texts, in cheap paperback editions that will not survive even a single reading intact, and even less to do with the cobbled-together collections of photocopies in which they most often encounter the secondary literature.) But the enthusiasts of the new technology are not exactly innocent of fetishism either, both for their sleek new toys and for the obsessive, idle manipulations that they encourage. And it is probably these conflicting fetishisms that lead both sides to adopt a particularly concrete and implacable variety of technological determinism. They assume not just that the future of discourse hinges entirely on the artifacts that mediate it, but that artifacts and hence cultural epochs can only supersede one other – the doctrine most famously proclaimed by the arch-

deacon in Hugo's *Hunchback of Notre Dame* as "Ceci tuera cela." (As Umberto Eco observes in his afterword, no conference or collection of essays on the future of the book would be complete without someone citing these words, so I may as well get them out of the way at the outset.) In the story the visionaries tell, that is, the computer has to kill the book, rather than merely maim it or nudge it aside a bit. And because the partisans of the old order implicitly accept this point, they feel obliged not just to passionately defend the book, but also to disparage the technology that is supposed to replace it, "twitchy little screens" and all.

In its broad outlines, of course, the dialectic is not new. As Paul Duguid points out in his essay here, the doctrine of supersession has close affinities with the theoretical program of postmodernism, with its insistence that history moves by abrupt and sweeping discontinuities. It's clear, too, that most of the visionaries have been directly influenced by some version of Daniel Bell's notion that we are standing at the threshold of a postindustrial age, as the social order built around the production and distribution of goods yields to one determined by theoretical knowledge. And even closer to home, the program obviously owes an enormous debt to the paleo-post-Gutenbergianism of McLuhan. Indeed, if we take a longer view of things, as several of the contributors do here, the past can come to seem an unbroken stream of proclamations that man is living an epochal moment. As Proudhon once said, "La révolution est en permanence dans l'histoire."

Still, the current prophesies of the end of the book have some features that set them apart from the claims of a lot of the other millenarians. There is first the matter of periodization. Here the visionaries line up with McLuhan rather than with the postmodernists or postindustrialists, locating the beginning of the passing age in the fifteenth century rather than the eighteenth or early nineteenth, and explaining the crucial features of these later eras, like industrialism or the Enlightenment, as simply the delayed consequences of the introduction of print. (Or as people often put it, these things followed from the "logic" of the technology, a trope that implicitly reduces the needs and desires of human agents to a set of universal axioms.) The facile determinism of this picture is taken on here by Carla Hesse, who examines the parallels between the effects of the current digital revolution and the changes in publishing that were brought about in the wake of its rather more sanguinary predecessor of 1789. It was a period not unlike our own, she notes, which witnessed a pullulation of new forms,

media, and institutions that underlay the “modern literary system,” with its new conception of intellectual property. But what brought about these changes, she argues, was not technology but events like the Terror: “... there is no evidence of any clear link between the advent of printing and the emergence of the notion of the individual author as the source of knowledge or truths.”

But unlike the postmodernists and postindustrialists – and indeed, unlike McLuhan – most of the enthusiasts of the new technologies have no real interest in advancing a historical thesis. The invocations of Gutenberg serve chiefly to demonstrate that the present situation is at least epochal, if not wholly unprecedented.¹ And the point of their historical determinism, you sense, is chiefly to establish their right to control the cultural moment and the material resources that it commands. This is how the future will be, they say, and the only choice we have in the matter is to get on board or to stand in the station as the train pulls away. People who say that tomorrow belongs to them are usually angling for a piece of today. (Thus are the words “vision” and “visionary” made banal, to the point where employees at some Silicon Valley companies are made to file “vision statements” as part of their annual review.)

It’s important not to lose sight of this point when we evaluate the visionaries’ prospective claims for the technology, which are anchored in immediacies far more than they are let on to be. No one doubts that digital technologies will have profound effects on the way our discourse is conducted and promise to lead to the emergence of a new “mediasphere,” to use Régis Debray’s term, a new regime of discourse. But the technology itself is changing so rapidly and unpredictably that even those who tend to think of it deterministically should have severe qualms about trying to predict what form it will wind up taking or what its cultural consequences are likely to be. When you hear someone making confident predictions about the state of the technology fifty or seventy-five years from now, you might think of some Eocene race-track tout trying to call the winners of future Kentucky Derbies on the basis of observations about the herd of eohippi grazing about his knees.

Over the short run, to be sure, there are some technological predictions we can make with confidence. It is certain, for example, that the “twitchy little screens” will soon be replaced, perhaps by the amorphous silicon displays, which already exist in the laboratory, that rival offset in their contrast and resolution. And it’s reasonable to assume

that we will have displays before the turn of the century that are almost the equivalent of paper in their weight and flexibility, as well. Still, as Duguid and Debray both point out here, the utility and significance of the form of the book doesn't begin and end with the printed page. And we should bear in mind that the applications of digital technologies are not limited to the presentation of texts on screens, but promise to work fundamental changes in print publishing as well (the point tends to be neglected in these discussions, perhaps because ordinary consumers don't often see these technologies at work.) Digital printing, for example, eliminates a lot of the costs of production, storage, and distribution associated with previous methods of short-run printing, all to the immediate benefit of small presses, university presses, reviews, scholarly journals, and reprint houses (which now perforce include the proprietors of all the backlist titles and digitized library collections available for digital reprinting.) Initial printings can be smaller with additional copies made available on an on-demand basis, so that a small press, say, can publish more titles than would be feasible with traditional offset printing, and keep them "in print" indefinitely. (Small presses are also likely to profit from the advertising advantages of the web, where they can post catalogs that allow readers to sample a chapter or two of a prospective purchase.) Even with these new efficiencies, of course, these sectors will remain relatively marginal in the larger scheme of things, but so long as they remain healthy it would be hard to claim that "the book" is in its death throes.

Indeed, as Eco suggests, the very pervasiveness and generality of the technology make it difficult to identify any single digital *ceci*. You can see the problem in the way enthusiasts of the new technology have tried to locate its essence in each of its successive manifestations – the searchable digitized text, the bitmapped display, hypertext, multimedia, virtual reality, MOOs and MUDs, the Web – usually with a one-dimensionality that recalls those science-fiction worlds (the jungle planet, the desert planet) that are given over to a single ecology. And it is no less difficult to identify the predigital cela that the technology threatens to kill. After all, as Raffaele Simone observes here, the book is a heterogeneous form that can lodge a number of diverse textual guests. If we take the book in its broad sense to refer simply to bound, printed volumes, then most books will likely disappear soon, but the majority of these are the sorts of records whose existence in codex form has no particular cultural significance – parts catalogs, technical

manuals, directories, regulations and legal records, and so forth. (And so much the better; as Eco notes, there are already too many books.) Among the books that people tend to care about as books, by contrast, the process of conversion is likely to be slower and much more selective. Scientific journals are almost certain to move to digital distribution, but for popular newspapers and magazines, the economic case for conversion is less compelling. CD-ROMs have already cut heavily into the sale of print encyclopedias, to the point where there are unlikely to be any left a generation from now, but the sales of print dictionaries seem largely unaffected by digitization (a recent edition of the *American Heritage Dictionary* wound up a bestseller in both print and digital versions). As for poetry reviews, novels, self-help books, political memoirs, critical editions, art books, travel guides... well it is simply too early to say. Some will probably continue to rest chiefly on printed supports, some will divide their lives between print and digital media, some will emigrate definitively, taking their place along a variety of utterly new digital genres.

Prediction, as James O'Donnell observes, is a mug's game. Still, I am willing to venture at least one more prediction here: by the end of the decade all our current talk of the "end of the book" will sound as dated and quaint as most of the other forecasts of this type that Duguid and Eco cite as historical precedents – photography will kill painting, movies will kill the theater, television will kill movies, and so on. ("Le cinéma va-t-il disparaître?" read the cover of a 1953 number of *Paris Match* that I saw at a bookstall not long ago, alongside a photograph of Marilyn Monroe of such evident glamour that a modern reader is left to wonder how the survival of the medium could have ever have been in doubt.) For one thing, the complexity and heterogeneity of the new mediasphere should by then be as evident as the heterogeneity of the world of film and television had become by 1960 or so. For another, these proclamations inevitably lose their value as positioning moves once the technology is no longer the property, material or intellectual, of a privileged faction. Indeed, access to the Internet has already become so widespread that many of the academics and technologists who pioneered its development have begun to complain about its vulgarization and to avoid its discussion groups; the Net has become like the fashionable restaurant about which Sam Goldwyn is reported to have said: "It's so crowded these days, nobody goes there anymore." Within a few years, there will be no predigital bourgeoisie left to *épater*.²

This will be all to the good, I think, since it will clear the air for other discourses about the future of the book that are likely to be much more fruitful. The shift is already evident in the technical and professional worlds. At the ubiquitous “digital libraries” conferences, for example, the Borgesian note has become almost inaudible against the buzz of discussions of client-server architectures, markup languages, middleware standards, and the like – all the questions that arise when we think of “the future” as a time we can actually plan for. (Or try to plan for, like the designers of new library buildings who find themselves in the position of having to accommodate the requirements of technology as much as 100 years in the future. You think of the challenge facing the city planners of the last *fin de siècle*, when the streets were just beginning to swarm with mass-produced bicycles.)

But the end of millenarianism makes place for another discourse as well, where we take the question of “the future of the book” as an occasion for critical reflection on the relation between technology and communication. For all their individual particularities, it’s safe to say that all the contributors to this collection write with this object in mind. Certainly they are all enthusiastic about the possibilities opened up by digital technologies, and the majority of them have been actively involved in developing new technologies or applications (and while some have reservations about the technology, you will find no complaints here about “twitchy little screens”). But none of them takes “the book” for granted, in either the narrow or broad sense of the term. They may disagree about how central its future role will be, but none assumes that the digitization of discourse can be effected without some wrenching dislocations, and it’s fair to say that none accepts the simplistic determinism of the visionaries. Ultimately, that is, the technologies cannot themselves determine how or where they will be deployed. This is left to us to decide, in the light of a far more nuanced understanding of the features of print culture that we invoke when we talk about “the book.” Indeed, one reason why these technologies have attracted the interest of many writers, even those who have no immediate stake in their implementation, is that they provide such an excellent occasion for reflecting on the forms of discourse. (There is an obvious parallel here with the debates provoked by the ability of the computer to simulate other human activities, like perception or reasoning, which has naturally led to reflections on the nature of these capacities.)

In this sense most of the essays in this book fall in a long tradition

of critical meditations on the cultural effects of new forms and new media, a line we can trace back through Raymond Williams, Carlyle, and Coleridge or through Benjamin and Baudelaire. Or, as James O'Donnell shows, well before that. Modern antitechnologists, he suggests, seem to take their model from "pragmatists of the old" like the fifteenth-century abbot Trithemius, whose *de laude scriptorium* was an extended criticism of the new technology of print, and who, though admiring print in the abstract, couldn't bring himself to accommodate it in a picture of monastic life. The visionaries can find an antecedent, less remotely, in a "theorist of the new" like McLuhan, whose extravagant prophesying and intolerance to any criticism of the new media ensured his media success and his intellectual failure. A better model than either, O'Donnell suggests, is in the "pragmatists of the new," like Cassiodorus, who undertook the practical enterprise (in the end, unsuccessful) of trying to adapt the new monastic culture to the preservation of the Christian Latin tradition. We might do the same, he says, by trying to adapt the new technologies to the preservation of cultural memory – which is, in the end, what we care for, rather than the books that have been its bearers.

I suppose it isn't surprising that classicists like O'Donnell (and Jay Bolter, as well) should be more readily disposed than most humanists to find the book ultimately dispensable, since the cultural tradition that most concerns them has already survived several fundamental shifts in its material support. For others, though, the prospect of the disappearance of the printed book raises considerable difficulties. As Paul Duguid points out, all the familiar talk of replacement and supersession presupposes that content is a kind of neutral substance that can be dislodged without change from its material base. This assumption underlies what he calls the "liberation theology" of technology, with its implication that, as he puts it, "a new Prospero will finally free the textual Ariel from the cleft pine – or at least from the wood products in which it is now trapped." But as he notes, echoing writers like McGann, McKenzie, Genette, and others, "all text relies to some degree on the very material embedding from which the technological liberation aims to give it independence." Social practice has turned the physical properties of the book – its bulk, its palpable inscription in space, its materially discrete pagination, its covers – into both interpretive and social resources. In fact, he suggests, the book may have a long life left in it.

Régis Debray makes a similar case, but in connection with the spir-

itual rather than the instrumental implications of the codex. He begins with a reading of the passage in Sartre's autobiography that recounts the writer's experience of his grandfather's library, and the importance of its essential physicality: "Even before I knew how to read I revered these raised stones, straight or slanted, ranged like bricks on the shelves of the library or lined in noble avenues like menhirs." In this "minuscule sanctuary," Sartre transformed himself through what Debray describes as a reverse eucharist into the "man-book," an inert object become a kind of gendered being. It is, Debray suggests, a microscopic cross-section of the history of this technology of memory: the codex as the symbolic matrix with which we link up with the world of meaning. In its permanence and fixity we, like Sartre, find an emotional stability, a shelter against the rush of time and death. "No culture without closure," he says, and suggests that the very capacities of digital media to overcome the material and temporal limits of print must lead to a kind of fundamentalist reaction to them. "The old man has not yet said his last word."

But what of the new electronic media that continue to emerge? Here, the challenge is to find modes of being that allow them to be true to their natures while preserving their cultural connectedness. As Carla Hesse observes, for example, the modern literary system was predicated on certain intrinsic properties of the mode of literary production, most notably its spatiality and objectification. In nineteenth-century France, only the book was exempted from prepublication censorship, because it took longer to produce and distribute and so was held to be more considered and less effective than newspapers or handbills, say, as an incitement to unreflecting action. But digital technologies, she notes, introduce a new mode of cultural production, in which the spatiality of print is replaced by a predominantly temporal mode of organization. In such a world, the categories of print discourse are inevitably reformulated. We may continue to talk about "books," for example, but they will no longer impose the physical and temporal distance between composer and reader that was an uneliminable property of their print antecedents. The challenge that faces us, she suggests, is how to reinvent the literary system and its mediators, books, libraries, and the rest, in the continuing service of "the cultural mission of civic humanism."

The librarian Patrick Bazin comes to much the same conclusion, if by a different route. He is concerned with one aspect of this new system, the development of the tools that will mediate our access to

collections in a textual universe where we can no longer rely on the three types of boundaries essential to the printed text: “that of the text itself, in its spatio-temporal extension; that which separates reader and author; that, finally, which distinguishes text from image – that non-text *par excellence*.” This “Copernican overturning” places greater prominence, he argues, on “tools of knowledge” adapted both to the form of the digital text itself, protean and elastic, and to the range of relationships that its various author-readers can assume. In short, he says, we have to create a system of “meta-reading” that transcends individual texts with their fixed boundaries, places, and roles, but which does not leave the reader with the sense of disorientation that can accompany the loss of all fixed reference points, the way one can feel, say, when wandering the Web. And in this, he adds, institutions like the library have a crucial role to play, not just as conservators, but by providing the kind of access that offers citizens – here there are close echoes of the conclusions of Hesse, Debray, and Eco – “the chance to reinvent together, in the context of relativism and virtuality, the public space of knowledge.”

But the dislocations occasioned by electronic texts have to be addressed not just in the external means of access we impose on them, but also, at least to the extent the distinction makes sense in this domain, in their inherent form. To this end they require a new rhetoric and a new typography (taking the word in its broader, seventeenth-century sense.) And here, too, the technology must find a way to accommodate both its own material properties and the culturally determined modes of reading that it engages. This is the problem taken on in the essays of Luca Toschi and George Landow, each of whom draws on his experience in designing hypertext systems to try to arrive at the rhetorical principles that will govern the organization of such systems. Toschi in particular stresses the historical roots of this rhetoric. He begins by making the point, too often slighted, that the seeds of the new hypertextual forms are already present in the modernist tradition in a writer like Pirandello and adds that “electronic writing requires among other things good philology and an awareness of rhetoric, aesthetics, and of the history of writing, considered in its most diverse forms... By means of the language of hypertext, it is finally possible to make manifest what has always been done in practice, to create systems where the connections that paper can only suggest to the mind... are physically realizable and accessible to manipulation.” In

this sense, he suggests, hypertext can serve among other things as an ideal medium for collating and presenting textual variants that lead to the establishment of an authoritative literary text (and so, by-the-by, of overcoming one of the putative limitations of print that Trimethius noted five centuries ago). Above all, he suggests, a literary hypertext remains an authorial text, shaped by a single consciousness.

Landow, by contrast, tends to stress the discontinuities in new forms like multimedia and hypertext, which take us "beyond the book" by creating new modes of reading and "new forms of intellectual and cultural interchange." It may be that most of what is out there now is crude and self-indulgent, but then it is early days yet (after all, he points out, it took a hundred years after the introduction of the book for people to come up with the title page). And as opposed to Toschi, he stresses the collaborative nature of hypertext and the Web, which permit the creation of texts which "embody multiple points of view" and which blend genres and modes. This is an idea developed in a slightly different context by Raffaele Simone, who sees in the future of the book a dissolution of the membrane that has surrounded the historically constructed "closed text" – original, authorial, perfected, a space that resists all intrusion – and a return to the medieval notion of the "open text," an object that is "penetrable, copiable, limitlessly interpretable." Unlike Landow, who comes the closest to technological determinism of any of the authors here, Simone sees the premonitory signs of this shift in the emergence of print forms like the nonbook (for example, user's manuals or compilations of phrases, jokes, or citations), which set the stage for the interactive books and book-games that the computer makes possible. But for him, as for Landow, the shift presages a new textual consciousness and the disappearance or at least the occlusion of the author: "Sooner or later no one will remember the closed and protected text."

Still, it may be a mistake to make too much of the apparent differences among these approaches to the new media. The writers have had, after all, different aims: Toschi has been concerned with producing a synoptic critical edition of a classical printed text, Landow with creating a new text to be built by accretion by numerous contributors, and with the uses of hypertext in literary creation. Taken together with Simone's, these essays make the point that a medium like hypertext does not impose a unique rhetoric or mode of application independent of its application or the social construction of particular modes of reading.

Landow closes his essay with some remarks on virtual reality, a

form that may seem to allow us to “dwell in fiction,” as one writer has put it. But Landow notes too that so immediate a form of experience poses the risk of taking us not just beyond the book, but beyond language, with its necessary abstraction. This is the theme that Jay David Bolter develops at greater length in his essay. Bolter suggests that the emergence of multimedia and virtual reality represents a progression toward increasingly more “natural” signs, a process that is already well under way in the “breakout of the visual” that is evident in newspapers like *USA Today* (another nice reminder of the extent to which the effects of these technologies have been prefigured in recent print discourse.) Indeed, some have seen in the technology of virtual reality the advent of a wholly natural and unmediated system of signs – for example, in representations of height that can induce genuine symptoms of fear in acrophobics. Bolter agrees that these media clearly favor the ascendancy of the visual, to the point where they may even signal the end of prose (as daring a prediction as ventured by any of the contributors here), but he also avers that no representation can escape the sign entirely. There is no road back from semiosis. And indeed, the hypertext novelist Michael Joyce makes a similar point in a meditation on the phenomenology of digital reading occasioned by a poem by Milosz. Joyce argues that one of the effects of the “infantile seamlessness” of virtual reality is to arouse in the viewer the desire to violate the illusion, “running full-speed for the edges of the representation, boundary testing, bursting through, blowing away the whole wire-frame world.” Perhaps there will someday be virtual worlds that can contain our flight, he says, “but they too will be a structure of words; everything we see from now on is made of words.” (Indeed, they may still be chiefly words in the literal sense. At least Umberto Eco refuses to accept Bolter’s assumption that the technologies militate for the predominance of the visual. McLuhan’s fundamental mistake, he says, was in insisting that image was coming to dominate alphabet in the new media, a mistake repeated by the theorists of digital technologies. Whereas in the computer, he claims, we have an ideal tool for manipulating information in its alphabetic form.)

But these differences in approach come with the territory and mirror the emergent heterogeneity of the subject matter. And they remind us too how much the category of “the book” is itself the result of a fortuitous concourse of institutions, genres, and technologies. The one thing that is certain is that the introduction of new technologies will be

accompanied by a dispersion of the cultural and communicative functions we associate with the book. There was never any essential reason why we should consign our novels and parts catalogs to the same artifacts, or why we should sell poetry and cookbooks in the same retail outlets, and now that we can imagine doing things otherwise, the contingency of the present is brought home to us. It leads us to a view of the future that is far from the determinism of the visionaries: when everything is possible, nothing is forgone.

Notes

¹ One widely known enthusiast is fond of saying that the analogy to Gutenberg doesn't do the computer justice; what we should really invoke, he says without apparent irony, is the domestication of fire or perhaps the evolution of opposing thumbs. (And what, you want to ask, of the bicycle?) But this is just the other side of the doctrine of supersession as a means of establishing the exceptionality of the present moment: not just "never again," but "never before."

² Access to digital technology is likely to be a middle-class prerogative for some time to come (in the United States, PCs are right now about four or five times as frequent in white households as in black), and as these technologies become increasingly important as vehicles of cultural transmission, the cultural divisions between classes may become still further marked. It is true that the absolute cost of computational power has been declining at a sharp and constant rate, but this does not presage the end of technological disparities between rich and poor, since access to each new level of digital communication – the Web is the latest example – requires a correspondingly greater capital investment.