How Interactive Can Fiction Be?

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Let me begin with a puzzle: why are readers with a promiscuous appetite for contemporary fiction—colleagues, students, friends, myself—by and large not drawn to the "interactive" fictional texts one finds on the web and in other electronic form? Shrewd critics have, after all, demonstrated that electronic fiction (also called hyperfiction) offers some of what is most adventurous, playful, and innovative in contemporary writing, indeed, that the very structure of the form encodes many of the features that recent theoreticians of literature have most prized. I would like to be convinced by their arguments, yet in gamely clicking my way through screens I have rarely felt the singular delight that keeps returning many of us to literature, indeed, to art in general—the sense that someone is playing with our minds and our senses in a way that, for reasons not wholly apparent, we enjoy or admire. Why? Are my age, education, or obsolete reading habits to be blamed? Surely they do not help, but that cannot be the whole story; hardly any of my students, all of whom have grown up with the internet, seek out these texts either. It is tempting to shrug off the whole form as what the *New York Times* has termed www.claptrap.com, but with that gesture one would also have dismissed the opportunity to reflect on a set of immensely rich issues with important consequences for our understanding of *all* literature. The question of why potential readers of hyperfiction decline to become actual ones touches on matters far beyond the scope of electronic textuality, for to learn why hyperfiction maintains only a loose hold on our attention is

I am grateful to Fritz Breithaupt, Marie Deer, Jonathan Elmer, and David J. Levin for their valuable comments.

Critical Inquiry 31 (Spring 2005)

to learn what grips us about traditional, printed literature in ways not obvious from a perspective lodged in print.

1

Many technical explanations have been offered for the awkward fit between literature and electronics: that computer displays strain our eyes; that with the dissolution of the page as a fixed unit of presentation we also lose our bearings within the text; that manipulating the text remotely, with keyboard and mouse, rather than directly using our hands, disturbs our haptic relationship to the book; that our posture vis-à-vis the monitor is all wrong for fiction. By focusing on the glitches that unavoidably plague a young medium—the oldest electronic hypertexts appeared little more than fifteen years ago, and the web began to attract attention only around 1992—one risks avoiding an analysis of more fundamental features of the medium, ones that may well not be remedied with improved displays and more pliable computers. Besides, a medium's youth need not hinder the production of sophisticated art—think of how photography and film gave rise to exceptional artistic uses within a decade or so of their introduction.

One need not be a media determinist to recognize that the changes wrought by the tandem technologies of electronic computers and optical data networks—both of them digital—will continue to press themselves on all facets of the ways we generate and disseminate information. How deep these changes will cut and what specific transformations they will engender is a matter of speculation, but the momentousness of the shift is not; it has been noted by such shrewd—and otherwise dissimilar—observers as Jacques Derrida, Niklas Luhmann, and Michel Serres, each of whom has commented on how powerfully social arrangements will be affected by the electronic inscription and transmission of information.[1] There is no reason to believe that literature will be spared the pressures exerted by this new medium.[2] This is true especially of verbal fiction making, the part of liter-

1. See Jacques Derrida, *Archive Fever: A Freudian Impression,* trans. Eric Prenowitz (Chicago, 1996), p. 17; Niklas Luhmann, *Die Gesellschaft der Gesellschaft* (Frankfurt am Main, 1997), p. 117; and Michel Serres, "Der Mensch ohne Fähigkeiten," *Süddeutsche Zeitung,* 28 Mar. 2002, p. 18.

2. Some would say literature has already begun to react to the new medium, not so much by switching to the computer, but by responding to it formally and thematically even in its paper-bound medium. See Joseph Tabbi, *Cognitive Fictions* (Minneapolis, 2002), and N. Katherine Hayles, *Writing Machines* (Cambridge, Mass., 2002).

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ature that I am interested in here, which seems to depend on the integrity of the book to a far greater degree than does lyric poetry.[3]

What exactly will become of fictional literature when the media in its environment undergo drastic changes? Some have understood this to be a question about the future of the book, arguing with impeccable logic that because what we call literature is a particular product of, and thus dependent upon, print technology, the demise of printing would also spell the end of literature. Maybe. There are few signs of the looming end of the book. What is more, such reasoning misses the heart of the question. If we think of literature as belonging to an activity that comprises more than a storehouse of works, motifs, genres, and technologies, but see in it a way of giving expression to a widespread and deeply entrenched—perhaps universal—human practice to tell and to listen to made-up stories under the constraints of print technology, then we are in a position to ask what might happen to the needs currently satisfied by printed fiction under new media conditions. How might complex fictional worlds be constructed by means of the networked computer, regardless of whether or not we end up calling that activity or product literature?

2

Hyperfiction follows the basic structure of hypertext, a term coined by the computer programmer Ted Nelson, whose definition remains the pithiest, perhaps because it was phrased before there was an internet: "By 'hypertext,'" Nelson writes, "I mean *non-sequential writing*—text that branches and allows choices to the reader, best read at an interactive screen. As popularly conceived, this is a series of text chunks connected by links which offer the reader different pathways."[4] Notice Nelson's judicious phrasing "*best* read at an interactive screen." It reminds us that hypertext is by no means confined to the computer. There is a rich tradition of texts in the medium of ink and paper that attempt to implement some of the structural features Nelson describes.[5]

3. Lyric poems, visually and linguistically compact as they often are, would seem to cross media boundaries fairly easily. Yet oddly their appearance on greeting cards, billboards, buses, shopping bags, and webpages remains anomalous. To learn why would require a separate discussion, for the lyric behaves according to generic codes very different from those operative in fictional accounts (narrative or otherwise). I will therefore limit the term *literature* to comprise what one is likely to find in a bookstore under that rubric: the many ways of creating fictional worlds with words.

4. Theodor Nelson, *Literary Machines* (1980; Sausalito, Calif., 1993), p. 0/2. See George Landow, *Hypertext 2.0* (Baltimore, 1997), p. 3.

5. In Europe, this tradition stretches from Llullian *ars combinatoria* via baroque and romantic poetry to surrealist *écriture automatique,* the aleatory experiments of the Oulipo collective in the 1960s, and recent novels such as Milorad Pavic's *Dictionary of the Khazars.* In China, it reaches back three thousand years to the *I Ching,* a book of wisdom that works according to a randomized

Though hypertext can be instantiated in many media, computers are particularly well suited to its structure. Indeed, the standard description of textual objects in the World Wide Web is called the Hypertext Markup Language (better known as HTML) in homage to Nelson's conception. As a result, most documents on the web follow the hypertext structure: the author presents a text with a certain number of built-in links, which, when selected, take the reader to a different node of what is in effect a global textual network, for the selected link may lead to the next paragraph or to a document stored on the other side of the world. And, because of the computer's ability to process any collection of data capable of digitization, the text in a hypertext may include writing, music, still or animated images, or spoken words. Most hyperfiction makes use of the basic interactive structure in which the reader makes his or her own path through a textual web, and many rely on pictorial and aural material just as much as they make use of the alphabet. Some add kinetic features; others introduce combinatorial elements or other randomized methods of manipulating the text; still others let the machine generate a part or all of the text. The texts I have in mind may use any of the features made available by the networked computer to construct a fictional world.[6]

3

This has more to do with the idea of literature than it may at first seem. You merely need to scratch the surface of the concept of hypertext to recognize that what we encounter every day on the web appears to contain, in its very structure, highly promising conditions for the production of artistically advanced texts. Jay David Bolter, like Nelson at once an early theoretician and a practitioner of hypertext, has offered a conception of this form of textuality that makes its artistic potential more apparent:

> A hypertext is like a printed book that the author has attacked with a pair of scissors and cut into convenient verbal sizes. Electronic hyper-

combinatorial method. For further examples, see Espen Aarseth, *Cybertext: Perspectives on Ergodic Literature* (Baltimore, 1997).

6. Some prominent examples include Michael Joyce, *Afternoon: A Story* (Watertown, Mass., 1987); Stuart Moulthrop, *Victory Garden* (Watertown, Mass., 1991); Shelley Jackson, *Patchwork Girl, or, A Modern Monster* (Watertown, Mass., 1995); and Mark Amerika, *Grammatron,* www.grammatron.com. The Electronic Literature Organization lists more than two thousand works in its comprehensive directory; this includes texts that, while literary or otherwise artistic, make no claim to be fictional. See http://directory.eliterature.org. Many instances of hyperfiction can be found on CD-ROM only, allowing their reception without recourse to the network. But this does not constitute a separate technical medium, for it results from a basically economic decision: people seem to be willing to pay for some things on disk that they would expect to receive without charge on the internet. There are no technical or aesthetic reasons why the entire content of CD-ROMs should not be available via networks.

> text does not simply dissolve into a disordered bundle of slips, as the printed book must, for the author also defines a scheme of electronic connections to indicate relationships among the slips . . . . A hypertext has no canonical order. Every path defines an equally convincing and appropriate reading, and in that simple fact the reader's relationship to the text changes radically. A text as a network has no univocal sense; it is a multiplicity without the imposition of a principle of domination.[7]

Interconnected textual slips; a network with no authorized beginning or end, in which the reader is forever blazing new paths of reading; texts whose arrangement avoids "canonical order," "univocal sense," and the yoke of "domination": have we not heard this somewhere before? Is it possible that hypertext realizes precisely the ideal text that, for example, Roland Barthes had in mind in 1970?

> In this ideal text, the networks are many and interact, without any one of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one; the codes it mobilizes extend *as far as the eye can reach,* they are indeterminable (meaning here is never subject to a principle of determination, unless by throwing dice).[8]

Here, in *S/Z,* twenty years before the invention of the World Wide Web, the crucial outlines of hypertext seem to be prophesied with eerie precision. It's all there: the plurality of paths, the multiplicity of approaches, the infinity of codes, even the principle of randomization. It has therefore become something of a truism to claim, with N. Katherine Hayles, that "Roland Barthes uncannily anticipated electronic hypertext by associating text with dispersion, multiple authorship, and *RHIZOMATIC* structure."[9]

To many theoreticians of hypertext, only the transfer of writing to the computer overcomes the limitations of printing on paper—its immutability, its rigidity—opening the path to the sort of text that Barthes and many other poststructuralist theorists attempt to describe, at times even to prescribe.[10] The technical features of hypertext are taken to be so well adapted

7. Jay David Bolter, "Topographic Writing: Hypertext and the Electronic Writing Space," in *Hypermedia and Literary Studies,* ed. Paul Delany and Landow (Cambridge, Mass., 1991), pp. 111–12.

8. Roland Barthes, *S/Z,* trans. Richard Miller (New York, 1974), pp. 5–6.

9. Hayles, *Writing Machines,* p. 30.

10. I have attempted to gauge some of the consequences of the mutability of electronically mediated writing for the cultural archive in Chaouli, "Was bedeutet: Online lesen? Über die Möglichkeit des Archivs im Cyberspace," *Text + Kritik* 152 (2001): 65–74.

to the core concepts of poststructuralism that critics have noted how "hypertext creates an almost embarrassingly literal embodiment of such concepts."[11] Thus while the reader of traditional literature must undergo laborious training to become a Barthesian reader, the reader of hypertext has no choice but to choose and thus to construct his or her own narrative. According to its theorists, hypertext wears the contingency of meaning on its sleeve. "To perform dissemination," we are told, "is to electrify the signifier."[12] In cyberspace, it seems, all texts have always already self-deconstructed, and all readers, it seems, are poststructuralists, even if they may not quite realize it.

The problem with which I began has become more puzzling, rather than less so. If the account of the critical potential of hypertext is right, then why does the ocean of data on the web contain barely a rivulet of literature? Even setting aside the texts currently on offer; can we imagine formal configurations in the computer medium, distinguishable from other arrangements within the same medium, that introduce the reader-recipient into the kind of fictional world that myths, fables, novels, plays, and films open up? How might we understand their workings, regardless of whether we decide to call them literature?

4

The secondary literature on hyperfiction has found many ways of addressing the literariness of computer-based texts, but in every case much of the promise the electronic medium is imagined to hold lies in the idea of what is called interactivity. I have thus far failed to find a coherent account of interactivity on a level of description useful to textual analysis (for example, technical, aesthetic, phenomenological, or cognitive); it may well be that such a description proves impossible for the simple reason that interactivity and communication may turn out not to permit a final ontological distinction. What is instead communicated in nearly every instance is what a good thing interactivity is. It is a moral category packaged as a technical feature, applicable to an improbably large number of actions. Given its slipperiness, it may be more useful to bracket the question of what it *is* and see what it is thought to *do*.

Thanks to interactive communication, it is often claimed, the hierarchy

11. Landow and Delany, "Hypertext, Hypermedia, and Literary Studies: The State of the Art," in *Hypermedia and Literary Studies,* p. 6. The idea that hypertext is, as Bolter puts it, a "vindication of postmodern theory" is ubiquitous in the secondary literature on hypertext, particularly in the euphoric writings of the early 1990s (Bolter, "Literature in the Electronic Writing Space," *Literacy Online: The Promise (and Peril) of Reading and Writing with Computers,* ed. Myron Tuman [Pittsburgh, 1992], p. 24).

12. Mark C. Taylor and Esa Saarinen, "Styles," *Imagologies: Media Philosophy* (New York, 1994), p. 5.

of author and reader can be flattened, presenting entirely new possibilities for the creation of artworks. Leveling the communicative playing field is usually understood in two main ways. First, the economic argument asserts that, because of the modest cost of entry, every consumer of data on the internet can also become a producer. (Compare this with the financial barriers in other media: a book needs on the order of a thousand consumers to pay for itself, a film or a TV program, several million.) Such a view, while accounting for the increase in the *number* of data producers, which is certainly a culturally significant development, leaves untouched the *roles* of producer and consumer. There may be many more authors now than before, but this fact does not in itself diminish the structural difference between reader and author. It is the second aspect of electronic communication that, according to theorists, troubles this structural difference. For not only is every receiver of data in a computer network a potential producer, but every act of reception is itself productive; every receiver of digital communication has the option, sometimes even the obligation, to sort and reorder data, in short, to rewrite them, even if only through a simple mouse click. In this limited sense, the reader becomes a cowriter or, in the industry's apt locution, a user.

While most instances of communication via networked computers affect the roles of reader and writer only modestly, theorists have argued that the ease and speed of communication can, in principle, substantially reshape the relationship between producers and consumers of information, in fact reshape it so drastically that the two roles become indistinguishable. Thus Mark Taylor and Esa Saarinen claim that "in the hypertextual network, all authorship is joint authorship and all production is coproduction. Every writer is a reader and all reading is writing."[13] This claim has attained nearly axiomatic status in the secondary literature, even though it is both empirically implausible and analytically feeble. Without the distinction between reader and writer the very concept of textual communication would fold. The claim's attraction seems to lie in the extravagant conclusions to which it leads critics (or to which critics permit themselves to be led). For many, the presumed change in the technical and cognitive functions of writing and reading entails far grander things than a potential renewal of aesthetic forms of communication; the redistribution of the roles of reading and writing becomes the catalyst for a redistribution of power, and hypertext, the agent that helps restore the balance in skewed social relations.

Once its effects are described in terms of social power,[14] hypertext, merely

13. Taylor and Saarinen, "Telewriting," *Imagologies,* p. 6.

14. For instance, see Delany and Landow, "Managing the Digital Word: The Text in an Age of Electronic Reproduction," *The Digital Word: Text-Based Computing in the Humanities,* ed. Delany and Landow (Cambridge, Mass., 1993), p. 13.

by permitting the reader the option of actualizing different versions of a text, acquires the melodramatic role of holding off "the imposition of a principle of domination" (as Bolter would have it). A widely noted programmatic essay from 1992 by Robert Coover, himself an accomplished novelist, offers the narrative of salvation by hypertext in its most condensed form: the novel—"patriarchal, colonial, canonical, proprietary, hierarchical and authoritarian"—is to be redeemed by hypertext, "a radically divergent technology, interactive and polyvocal, favoring a plurality of discourses over definitive utterance and freeing the reader from domination by the author."[15] While some of the euphoria accompanying information technology has faded (Coover, for example, has since modified his views, and Michael Joyce, a pioneer of electronic hyperfiction, has declared that he will henceforth publish in print), the notion that the abolition of *symbolic* forms of domination will have an ameliorative effect on *political* forms of domination continues to animate the promise that electronic technology holds for many. And the path to improvement is in all cases the same: a reduction in asymmetrical relations leads to a dedifferentiation of social functions ("Every writer is a reader and all reading is writing") and, presumably, to justice and happiness.

The idea that correcting the imbalance between readers and writers will somehow foster a community of equals was not born with the internet. It is the flip side of the suspicion with which writers such as Plato and Paul have eyed media that supplant face-to-face conversation, placing themselves between speakers and listeners, driving them apart and making them invisible to one another. (For both Plato and Paul, the *bête noire* was the dead letter of writing.) The worry about the mediation of immediate conversation intensifies with printing and comes to a head around 1800, when we find innumerable fantasies of the disappearance of media, mainly but not only of the printed word.[16] By the twentieth century this romantic idea undergoes a crucial shift, for rather than wishing away the media entirely in order to establish "real" communication, writers begin to think of the media as embodying the promise of curing the very ills the media themselves are thought to have caused.[17] And the fact that writers place their

15. Robert Coover, "The End of Books," *New York Times Book Review,* 21 June 1992, p. 23.

16. This is the burden of Friedrich Kittler's main argument in the first part of his landmark book *Discourse Networks 1800/1900,* trans. Michael Metteer and Chris Cullens (Stanford, Calif., 1990). Niels Werber, "Der Cyberspace als Medium der Literatur? Zur semantischen Tradition der Entdifferenzierung und der Technik der Literatur," www.diss.sense.uni-konstanz.de/lesen/werber.htm, provides a useful historical overview of the forms the desire to level the functions of writer and reader has taken in the past two centuries.

17. Bolter and Richard Grusin call this process "remediation"; see their rich *Remediation: Understanding New Media* (Cambridge, Mass., 1999).

hopes in media that, from our point of view, can hardly be described as interactive only demonstrates the lure of the notion of interactivity. For Bertolt Brecht, the radio performs the task of making listeners into speakers. When Walter Benjamin, in his 1936 essay "The Work of Art in the Age of Its Technological Reproducibility," diagnoses a cultural shift in which "at any moment the reader is ready to turn into a writer," he has in mind the institution of the letter to the editor. And the alleged democratizing force of film flows from the fact that "the newsreel offers everyone the opportunity to rise from passer-by to movie extra."[18] One may or may not view the change from passerby to extra as an advance, but either way the decisive distinction between spectator and filmmaker remains untouched. When, in 1970, one of the sharpest cultural critics of the postwar years, Hans Magnus Enzensberger, declares that "electronic technology does not recognize an opposition in principle between sender and recipient," his examples include cable TV, the VCR, microfiche with electronic access, the eight-millimeter camera, and the magnetophone—technologies that, insofar as they have not already made their way into museums, would hardly be associated with the abolition of the tyranny of the author.[19] The utopian pull of this idea seems irresistible.

Whether the move toward equality in social relations is hastened by liberating the signifier can be debated, yet the prior step in the argument—that the lopsidedness of author and reader represents a tyranny to be abolished for the good of art—strikes me as erroneous. The opposite seems to me to hold: "interactivity"—high communicativity of any sort—interferes with the unfolding of literature, particularly with writing that means to lead us into fictional worlds. Even the technically modest oral narrative demands a highly artificial communicative situation: someone speaks, and all others remain silent. Driven by a moral impetus that finds hierarchies of all kind anathema, many critics (particularly in the United States, where a robust suspicion of hierarchy is woven into the nation's ideological DNA) have made it their charge to topple them wherever they might encounter them. In the process, they tend to ignore the fact that in order for art to occur, communication must be distributed unevenly: some narrate, write, dance, or sing, while others listen, read, or watch. The productive, and satisfying, side of this asymmetry reveals itself in the eagerness with which

18. Walter Benjamin, "The Work of Art in the Age of Mechanical Reproduction," *Illuminations,* trans. Harry Zohn, ed. Hannah Arendt (New York, 1969), pp. 232, 231.

19. Hans Magnus Enzensberger, "Constituents of a Theory of the Media," trans. Stuart Hood, *The Consciousness Industry: On Literature, Politics, and the Media,* ed. Michael Roloff (New York, 1974), p. 97; trans. mod.

recipients willingly cede communication for the sake of the pleasures the narrative experience affords.

Not only aesthetic pleasure but critical engagement, too, paradoxically depends on shutting down (or at least severely diminishing) the return channel of communication, for only when participants are released from the labor of constructing a text on a material or topological level (becoming "passive recipients" in that respect) can they become hermeneutically active and think their own thoughts about what they are reading, seeing, or hearing. Friedrich Schlegel's ideal reader, the template of all critical readers to come, can only be imagined as "not resting and dead, but alive and counteracting," when on the level of inscriptions he or she does rest and refrain from acting.[20]

To see why, it is useful to recall that the unprecedented flexibility hypertext permits in navigating a vast textual network is founded on, and in turn promotes, a phenomenon we experience every time we use the web, yet one few of us reflect on. Because every node on the web can potentially be linked to any other node, a given link can mean virtually anything at all. It may denote a tight semantic coupling of nodes (as when clicking on a word calls forth an explanation), or a semantic link so loose as to appear entirely meaningless (as in the case of much of the unmotivated linking one finds on the web), or some other degree of coupling in between. Links may inform, promote, tease, elaborate, cite, amuse, ironize, deceive, confuse, or, frequently enough, lead to the dead end of missing data. Their semantic range is so indeterminate that the link may well be the most polysemous sign with which we now routinely operate.

One may wish to describe this loosening of semantic bonds as a liberation of the reader from the tyranny of the author (or of the book), but then one is apt to overlook the fact that the reader's critical wings are being clipped in the process. For the burden of sense making does not disappear; it merely shifts from one side of the communicative act to the other, from writer to reader. When avant-garde or experimental works (among which hyperfiction likes to be counted) are approvingly called demanding, it is useful to keep in play the coercive connotation of the term: such works insist on our attention and our engagement more fully than do more conventional works. The relationship between the freedom of the author in forming a work and the freedom of its readers in receiving the work can be described as a simple function: the more liberties the author takes in giving shape to the work, the more forcefully are readers enlisted in its construction; the

20. Friedrich Schlegel, *Philosophical Fragments,* trans. Peter Firchow (Minneapolis, 1991), p. 14; trans. mod.

greater their responsibilities for semantic coherence, the narrower their latitude. Conversely, the readers' freedom—to range over their memory of earlier readings, to laud or denounce what is being read, to skip phrases or lines, to fantasize—increases in the degree to which the text imposes formal constraints on itself, thus releasing its readers from the burden of constructing the load-bearing scaffolding of meaning. Increased interactivity entails diminished freedom while reading. (This also applies to the present text: insofar as I have managed to construct a cogent argument, readers of these pages are in a far better position to object, demur, concur, or otherwise react to my line of thought than they would be if confronted with a concatenation of textual chunks whose interconnections they would first need to determine.)

In praising hypertext for instantiating polysemy, indeterminacy, contingency, and difference, critics fail to distinguish between the text and the actions and reaction the text occasions in the reader. Indeterminacy and difference are of interest to critics not as features of the text itself (even though we often ascribe them to the text) but as mental events. Indeterminacy is prized because it sets the reader's mental activity in motion in ways thought to be desirable. But this mental mobility requires textual rigidity. Why this should be the case has been explained by Wolfgang Iser and his concept of the textual blank, which refers to all those silent spots where the text's meaning remains implicit. According to Iser, the interpretive challenge—as well as the pleasure—of reading consists in the process by which the reader comes to fill these textual blanks with his or her projections. "Now as the blank gives rise to the reader's projections, but the text itself cannot change," Iser explains, "it follows that a successful relationship between text and reader can only come about through changes in the reader's projections."[21] Reading consists of continuously shifting projections in the reader's mind because "the text itself"—and filling in Iser's blank, we may add: the *printed* text itself—"cannot change." Once the text becomes mutable, however, the status of the blank—and hence the reader's ability to fill it with projections—changes radically, for the reader can no longer be sure whether the blank is a silence within the text (of the sort that Flaubert embeds in his dialogues with devastating effects) or merely a gap caused by the machine or the user's manipulation. The kind of ambiguity that literary study thrives on takes for granted the topological (as opposed to semantic) overdetermination of textual blanks, for only then can they be recognized as the conscious or unconscious expressions of an agent (be it a person or an impersonal discourse) worthy of our projections.

21. Wolfgang Iser, *The Act of Reading: A Theory of Aesthetic Response* (Baltimore, 1978), p. 167.

Against this background, it becomes ever more evident that what leading theoreticians of the digital medium diagnose as the "convergence of critical theory and technology" in hypertext rests on a fundamental conceptual error.[22] Claiming that hypertext "creates an almost embarrassingly literal embodiment" of concepts found in literary theory sidesteps the question of whether the literal embodiment of a concept functions exactly the way its metaphorical instance does. The far-reaching consequences that emerge when it is not the *understanding* of a text but the *text itself* that remains uncompleted, requiring construction by the reader, cannot be described by means of a theoretical short circuit that takes the literal for the metaphorical. Barthes, the patron saint of hypertext theorists, keeps the two carefully apart. *S/Z,* his most innovative book, in which he develops the idea of a plural, playful, "writerly" text consisting of "a galaxy of signifiers," performs its exuberant semiotic demontage not on a collection of randomly collected textual fragments but on a classic example of narrative literature. It is obvious—so obvious that Barthes loses not a word about it—that *Sarrasine* can only be carved into 561 lexia because Balzac's text continues to be available in its unfragmented, readerly version (indeed available in the appendix to *S/Z* itself). If one believes that dissemination can be performed simply by "electrify[ing] the signifier," one has failed to take into account the discontinuity in the operation of dissemination the moment it is turned into a materially concrete form. It would hardly be an overstatement to claim that the distinction between literal and metaphorical levels of textual description founds the idea of the active reader on which contemporary literary and cultural theory depends; only when the reader remains communicatively passive, refraining from rearranging the artwork and accepting its structure as given, can he or she become an active and critical interpreter. Only when texts hold still are we in a position to let our intellectual agility play and the signifier float. In short, metaphorical deconstruction depends on literal stability.[23]

5

Some of the difficulties with reading hypertexts derive from the curtailment of interpretive freedom we experience when the text burdens us with cognitive demands, when, for example, it places the onus of determining the semantics of a link squarely on us. But the disappointment many feel

22. Thus the subtitle of Landow's important book *Hypertext: The Convergence of Critical Theory and Technology* (1992; Baltimore, 1997).

23. This is one way we can measure the extent to which poststructuralism itself is a phenomenon of print technology. While it does not follow that its concepts are therefore unsuitable for an investigation of nonprint media, their suitability cannot be taken for granted.

when reading hyper*fiction* has still other sources. When offered communicative options, such as a choice of links, each presumably leading to a different node, readers are supposed to be drawn in by having an investment in the narrative turns that the story takes as a result of their intervention; that, after all, is the idea behind the reader as cowriter. Yet I have found the opposite to be true: when confronted with a series of narrative forks, a certain mental blankness sets in, and it is not immediately clear why that would be. Some critics have blamed the chronological instability of hypertext narratives, contending that shuffling textual elements against the grain of a narrated temporality violates a basic experience of our lives, namely, our submission to time.[24] Plausible though this explanation sounds, it merely describes an instance of the general semantic laxness I discussed earlier and therefore addresses a feature, not of fictional texts alone, but of all hypertexts. The special problems arising from hypertexts making fictional claims may become clearer if we turn to an example. The artist and author Mark Amerika offers us the following narrative situation in his hyperfiction *Grammatron,* which was selected for inclusion in the 2000 Whitney Biennial of American Art. Superimposed on a background consisting of barely legible words (among which "worries" and "worthless" can just be made out), the passage reads in its entirety:

> pl-ease
>
> "Please," she said, "don't give in too fast. You need to be more in control. You need to be able to outlast yourself. There are so many preprogrammed outcomes and all of them want to absorb your data. It can happen that fast. They are waiting to eat you alive. "[25]

It does not seem especially hard. All I, as reader-user, have to do is to click on one of four underlined choices to move on. But almost at once difficulties present themselves. How to decide? Why choose "preprogrammed outcomes" rather than, say, "data"? Nothing in the text, neither on this screen nor in any of the others I read (whether I read all of them, I cannot know), seems to encourage me to choose one over any of the other links. Yet choose I must, for otherwise no new text will appear. In most printed fiction, I am not required to make such navigational decisions; I may obediently turn the page or freely skip passages or entire chapters, read the ending first and the beginning last, or randomly access any other section I please. (Barthes has observed how skipping text is a way of taking pleasure in it.)[26] This latitude in using and abusing the text rests on the crucial fact

24. See, for example, Tim Parks, "Tales Told by the Computer," *New York Review of Books,* 24 Oct. 2002, p. 50.

25. http://grammatron.com/gtronbeta/pl_ease_722.html

26. See Barthes, *The Pleasure of the Text,* trans. Miller (New York, 1975), pp. 10–12.

that I am not required to assemble the body of the text. Precisely because the material shape of the text does not depend on it, the reading itself may wantonly range over the text. The lack of choices on one level (the topology of the text) creates limitless choices on another (the phenomenology of reading).

Once we consider the choices in the passage I quoted, an entirely new problem takes shape. While at first four appeared to be too many options, once the notion of choice has been established, we begin to wonder about the constraints that put a limit on the number. Why not five or ten or indeed all the passage's words? How are we to read the author's choice to provide the reader with these choices? Paradoxically, a hypertext, precisely by offering some choices (but not others), has a way of making the limits of the space it encompasses even more readily visible than does the "hierarchical and authoritarian" text produced by the printing press. A printed narrative tells the story that it tells us. We can ask counterfactual (or counterfictional) questions about it—why won't Werther just get a job? why does Charles put up with Emma?—but these are questions that implicitly accept the fixity of the narrative. But once a reader is presented with nontrivial choices, the constraints become painfully evident. Why only these options? Why can I not click on "don't" or "too" or the quotation marks? Why not reverse, recombine, or otherwise manipulate the text in the innumerable ways the author did not anticipate or, for whatever reasons, foreclosed, but which are well within the powers of the medium in which the text is presented?

The confusion we sense results in part from the semantic looseness that marks all hyperlinking (for every click is a leap into uncertainty), but it is exacerbated here by the fictional status of the text. How? A set of distinctions that Dorrit Cohn has articulated may be of help. The functional, rather than ontological, difference between fiction and nonfiction she proposes is that it would be senseless to deny claims an author makes about a fictional world; *true* or *false* are criteria we may apply to accounts of reality (science, history, biography, and so on), but not to fiction. We are free to be dissatisfied with the representations of a fictional world, but we would have missed the point of fiction if we disputed it.[27] The asymmetry in the distinction between fiction and nonfiction can also be put in slightly different terms: fiction always contains a latent reference to reality by means of which the reader determines the rules of the fictional world. In this world, we think, very small people appear to be capable of pinning down an average-sized Englishman. And we silently add: *unlike* in the real world. Descriptions of reality, by contrast, the other side of the distinction, require no reference to fiction. In

27. See Dorrit Cohn, *The Distinction of Fiction* (Baltimore, 1999), p. 15.

terms Niklas Luhmann likes to use, the distinction between fiction and reality is redoubled on the side of fiction by means of a reentry; a copy of reality is always inserted into fiction (but not necessarily the other way around).[28] This operation does not, as it might first appear, constrain the range of fiction, but allows it rather to arise in the first place and enables the construction of immensely complex fictional worlds.

When in my role as the reader-user I am obliged to manipulate the text by choosing a link, I violate not the distinction of fiction and reality but rather the far more crucial copy of this distinction within fiction itself. For through my choice I intervene in the fictional world, and I do so urged on by my real appetites and anxieties. Instead of extending the range of fiction to myself, my self advances into the fiction. In contrast with ritualized acts of reception (such as turning a page or circling a sculpture), when reading hyperfiction I change the course of the narrative according to my own motivations, which may remain opaque to me. The moment a part of reality appears in its stark nonfictional form within fiction, the latent reference that fiction maintains to reality is interrupted, and the fiction itself begins to come apart.

The best way of testing this thesis is, of course, by reading hyperfiction, but a simple thought experiment involving more familiar media will also do.[29] We all know the intensity of emotion—the blend of dread and eager anticipation—that a well-executed cliffhanger can evoke in us (think of the season finales of TV shows such as *E.R.* or *The West Wing*, which have to produce enough emotional charge to last the summer). What would happen if we learned that our fears and hopes and desires about the show somehow influenced its progression? My sense is that the emotional intensity would diminish considerably, if not dissipate altogether, and the reason is not difficult to discern. If the cliffhanger is done well, it will not simply introduce a wholly unprepared turn into the narrative (a random death, a new character, an entirely unanticipated obstacle) but rather tighten the configuration of known elements to such a degree that the next step appears both inevitable and impossible. We feel the pressure rising to a breaking point, but we simply cannot foresee where the complex narrative structure will give way. This interplay of necessity and contingency produces our anxious—and highly pleasurable—speculation about the future path of the story. But if we could determine that path even slightly, we would narrow the range of possible outcomes and thus the uncertainty in the play of ne-

28. See Niklas Luhmann, *Die Kunst der Gesellschaft* (Frankfurt am Main, 1995), pp. 229–31.
29. The idea of the thought experiment emerged in a conversation with Barry Mazur.

cessity and contingency. The world of the fiction would feel, not open, but rigged.

6

If the computer seems ill-suited for the sort of contemplative, absorptive reading that many associate with printed literature, then we should consider how unlikely a medium the book itself is for fiction. Why would any listener give up oral narratives for the laborious process of reading? And given that the book's strength lies in providing random access to information (it can be opened to any page at any time) one would assume that it would be used for directories, manuals, and lists; but could one have predicted that it would lend itself to what Sven Birkerts has called the missionary position of reading—starting on page one and proceeding in order to the end? The book, perhaps more so than hypertext, encourages the reader to ignore the given order of words. It is something of a wonder that narration survived the transfer from oral delivery to written storage on vellum, scroll, and finally in book form, testimony to how productive and pleasurable hierarchical communication can be. There is little doubt that it will also transfer to the electronic medium.

We have no way of knowing to what kinds of fictionality future forms of computing may give rise, but the line of thinking we have been following allows us to make certain guesses. If it is the intervention of the real reader, propelled by real psychic springs, that interrupts fiction, could its continuity be maintained if the reader was fictionalized *as a reader*? What if I chose "preprogrammed outcomes" rather than "data" not in my capacity as my biographical self—bored, vacant, disoriented—but in the role of an invented I? What if the process of reading acquired some of the elements of playing a game? This could work; certainly it has worked in other media. When the narrator of *Tristram Shandy* addresses the reader directly, when the technician in Ludwig Tieck's 1797 play *Puss in Boots* appears on stage, when a professional wrestler provokes the crowd into howls of dismay, the distinction of fiction and reality remains intact, even though the fiction has been massively interrupted. Because the interruption itself has been fictionalized, the fictional world is strengthened and enlarged.

Does the digital medium permit such a fictionalization of reception in which the reader becomes a cowriter under a fictional mantle? Since the 1970s, when relatively primitive bulletin board systems connected computer users via telephone lines, geographically dispersed and largely anonymous users have taken part in so-called Multi-User Dungeons (MUDs) where, using written words alone, they spin out purely verbal fictional worlds of baroque complexity. (So-called MOOs, while giving rise to far greater com-

plexity than MUDs, fall into the same basic category in that they too permit anonymous users to construct spaces and actions with words alone.) Users agree to respect certain narrative frames (*The Lord of the Rings* is unsurprisingly among the most popular), slip into given or invented roles, and collaborate through action and dialogue to expand the fictional world they inhabit. That such texts would not always meet the highest literary standards may be easily guessed; but they do achieve what most "antihierarchical" and "dialogical" hyperfiction fails to accomplish, namely, to fascinate their users while simultaneously provoking them into writing.[30]

There have been a few attempts to lure the participating reader (or the reading participant), whose actions arise not from his or her own but from invented motivations, into fictional environments created for the networked computer. Two examples might suffice to sketch out the field of possibilities. The website "Company Therapist," now defunct, provided access to the practice of the fictional psychiatrist Charles Balis; reader-authors were in a position to contribute to the textual corpus by inventing patients by way of a series of notes, diary entries, diagnoses and other documents. Here, too, certain constraints were sacrosanct (narrated time had to be observed, for example), which permitted a sharp increase in complexity.[31]

The website "Persistent Data Confidante" encourages the fictionalization of the user not through plot elements but by means of a formal device. The idea is brilliant in its simplicity: one is permitted to read one of the secrets posted by anonymous users, but only after one has given up a secret of one's own.[32] Typically (by which I mean, of course, according to my own experience), the user will begin by revealing a few rather harmless secrets (for one never knows how anonymous such services really are); before too long the enormous benefits of *inventing* secrets become clear: not only do I thus manage to distance myself from the weight of my own secrets, but imperceptibly I find myself sliding into a narrative region in which I relate the secrets of a credible I in painful detail and with great pleasure. At first, then, one only reveals secrets because one seeks payment in kind; but, should the participant play along, it can develop into a game in which the *production* of secrets takes center stage. (A further effect lies in the optional recognition that the invented secrets reveal more about the dungeons of one's psyche than any real secret ever could.)

30. For insightful discussions about the poetics of MUDs and other role-playing games, see Aarseth, *Cybertext;* Janet Horowitz Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (New York, 1997); and Marie-Laure Ryan, *Narrative as Virtual Reality: Immersion and Interactivity in Literature and Electronic Media* (Baltimore, 2001).

31. The writing experiment has ended, but the archived texts may be accessed at http://www.thetherapist.com

32. "Persistent Data Confidante," http://www.textgenomics.com

7

I admit that the question with which I began—the question of whether forms of fiction making might be able to make use of the communicative features of the networked computer—remains open, but these reflections may at least have narrowed the field over which it can range. We can say this: there are two main shifts to which fiction (literary or otherwise) must adjust when it is communicated in a medium in which the recipient helps to assemble the system of inscriptions in topologically significant ways. First, it needs to recognize that the role of the reader familiar to us from print changes in the degree to which the links between textual elements remain semantically underdetermined. Second, fiction somehow needs to manage the fact that the user's navigational decisions can be driven by motives wholly divorced from the fictional world, provoking a crisis of fictionality. The fictionalization of reception is one way of addressing both shifts, for a fictionalized "interaction" would be severely limited by the boundaries of the fiction, thus rendering the fictional world a larger, more complex, and more interesting space to inhabit.[33]

If the examples for the sort of fictionalization of reception I have in mind (MUDs and MOOs, various web-based writing games) are any indication of things to come, then the forms of fiction making we can expect to find in the medium of the networked computer will have little in common with traditional notions of literature. The reason is quite simple: such games do not produce primarily readers but writers, and these writers do not write to be authors; what they put down is not meant to amuse or instruct other readers, rewarding them *as* readers, but meant rather to provoke them into becoming writers themselves (by contributing to the writing game, for instance). Because the reader accepts the asymmetry in literary communication with the expectation of being repaid (in pleasure, knowledge, moral instruction, cultural capital, and so on), criticism highlights those examples that excel at holding our attention through their skillful configuration of thematic and formal elements. But the prose generated in role-playing or adventure games is not meant to impress readers or to give rise to complex interpretive moves. To some extent this is true for literary hypertexts as well; they are far more interesting to produce than to read, regardless of the medium they appear in. Raymond Queneau's 1961 *Cent mille milliards de poèmes,* a mix-and-match book in which the user composes a sonnet by selecting one of ten choices provided for each line, yielding 100,000,000,000,000 possible poems, is an ingenious print hypertext that

33. These boundaries are not imposed from outside, by the author, or by some other agency but emerge as the edges of the fictional world that the reader constructs through textual clues.

must have been hugely pleasurable to compose; it is far less pleasurable to read (and rightly so, for it quite obviously invites us to play with it rather than read it). The term *reception* that, *faute de mieux,* I have been using for the role of the user fails to credit the immense change verbal fiction making is likely to undergo in the medium of the networked computer; rather than being a spectator sport played by professionals, it will involve player-participants content to be amateurs. Chances are it will not yield great literature, but it will probably be a lot more fun.