Let me say at the outset that *Writing Space* is a provocative and important book that ought to be read widely by rhetorical theorists, historians, and philosophers of literacy and language. Computers and hypertext are but occasions for Bolter's ambitiously exploring what writing was, is, and will become. However, he has seriously underrepresented some theoretical issues. The book serves, then, as an accessible locus for those who would challenge as well as those who would celebrate the promise of electronic writing.

Bolter's central claim is that following five centuries of domination the book is moving into the "margins of literate culture." Print no longer defines the "organization and presentation of knowledge" or even the nature of knowledge itself. Electronic texts, shaped by readers as writers, will continue to replace single-voiced and unified print texts. The computer, like all technologies, defines a particular "physical and visual" field. Its writing space transforms writing to something fluid, not fixed.

While this gist may seem familiar to many readers, Bolter writes a complex and provocative history and argument. He explains the changing technologies of writing, from papyrus roll to codex to printed book to electronic text, analyzing their implications, discussing exemplary texts and ideas from ancient times through pre- and postmodern. Particularly engaging are his discussions of the shifting aspirations of dictionaries, encyclopedias, and libraries. He introduces the idea of hypertext in a fashion friendly to novice readers but without putting off "experts." The teleology of this historical sweep tends to be that of a hero narrative, with the computer as Odysseus. For example, Bolter notes that "it is sometimes uncanny how well the post-modern theorists seem to be anticipating electronic writing" and that "the computer takes us beyond deconstruction" to "a land promised (or threatened) by post-modern theory," that of pure signs. The hero narrative creates some extreme assertions—for example, that electronic writing is writing beyond criticism because "it incorporates criticism into itself."

Three claims offer the book's greatest promise and problem. First, electronic writing replaces the hierarchy of order and entailment with a multiplicity of orders, all equal, all simultaneously existing and not existing, controlled by the reader but also by the writer who programs links between "topics" or episodes. Hypertext fully realizes the "topographic" possibilities of writing—that is, of topics as places. Organized into clearly demarcated segments of discourse, *Writing Space* itself has something of a topographic quality. More extremely, books like *Finnegan's Wake* exhaust print topogra-
phy to a point that only computers can transcend, as Bolter illustrates with Michael Joyce's hyperfiction, "Afternoon."

Second, Bolter explains how hypertext exposes and exploits the arbitrary, semiotic nature of all writing. C.S. Pierce looms explicitly. When readers can follow multiple paths through the writing space, "no path... need be stigmatized as marginal." Authority is dispersed, and Bolter celebrates the liberatory consequences. But I will worry, shortly, about the ethical.

Third, Bolter manipulates an elaborate tautology of writing as thinking as mind. Electronic writing puts a further twist on Ong's analysis of orality and literacy. At times Bolter comes reductively close in his discussion of artificial intelligence to a narrow cognitivist metaphor in which the mind is like a computer, "a network of atomic symbols and pointers." And at times his equation of mind with writing, however amiable it may be to those in composition studies, greases slippery entailments, especially since Bolter insists on a broad definition of writing, one, for example, in which computer-controlled robots write with mechanical arms and wheels. Still, this is a compelling discussion, and, as in the rest of the book, Bolter is direct and aphoristically assertive.

But, as in the rest of the book, the aphorisms sometimes collapse. Consider the claim that "all electronic texts are self-sufficient, in the sense that each element refers only to other elements in the network." Isn't exactly the same true of all print texts, too, whether one reads "the network" as a text among texts or as the whole semiotic system? By slighting reader-response theories of the status of texts and by presenting reading as mere diachronic succession, Bolter can neatly cast print as something imposed on and received by the reader, while electronic texts are cast as participatorily created. Doing so, however, overstates the difference between the media.

A modest but dramatic example of my own reading illustrates these issues. I read the book in dutiful linear fashion, first page to last, writing marginal notes. On page 97 I underlined the sentence "The encyclopedic vision has always been that the great book should contain all symbolic knowledge," and in the margin I wrote "Borges, Library of Babel." Then, an hour and 40 pages later, I encountered this sentence: "Jorge Luis Borges' most famous short piece is perhaps the 'Library of Babel' from his Ficciones." Now, the linear form of the book did not constrain me from invoking Borges "early." In my reading I "jumped ahead," as it were, in hypertextual fashion, defying the prescription of the words on the page. Or, rather, my text of Writing Space, constructed through print, included the "Library of Babel" on page 97. My marginal note on 138 is "MacBride Hall, mid 1970s," recalling a reading that Borges gave at The University of Iowa when I was an undergraduate. (It was rather a speaking or recital, since his blindness precluded reading in the conventional sense.) I cite my experience to point out that reading is complexly synchronic as well as diachronic, layered as well as successive; in postmodern rather than structuralist terms, reading is an
imbricative act—in print as well as in electronic texts. Bolter correctly analyzes the different status of “marginalia” in electronic and print texts, and the media obviously cue their status differently. But these cues are substantially those of convention and not immanent in the media themselves.

The dominant metaphor for reading in Writing Space is that of choosing paths, the reader having actively to decide where, literally, to go next—with “where” always defined as another place in the electronic text. This metaphor elides the aspects of reading as something done in the place one is or of reading as movement to “places” beyond the text at hand, to ideas, experiences, memories, Iowa City. If Writing Space portrays reading as path-choosing, it presents writing as mainly the arrangement of topics and episodes. And yes, this is crucially so, at levels all the way from the alphabetic to the encyclopedic. But composing has other dimensions. It is a radically different activity for a hypertext’s author to compose episodes than to write links between them—or for a reader to select those links. While Bolter frequently cites the reader’s ability to add to a hypertext, he never develops this idea thoroughly. The main act of reading/writing a hypertext remains assembling/choosing paths, not planting beds in this complex garden.

At times the distinction between print and hypertext is most fragile. One striking example: He notes that “the computer can even be programmed to rearrange its structure overnight... In collecting a library of printed books, we can be sure that our texts will be the same in the morning as they were the night before. For an electronic library, we have no such assurance.” This is an apples-and-oranges example, for it posits a computer programmed to change and a library destined to be static—and then it finds the library wanting. But what if I asked a friend to add to, subtract from, or rearrange the volumes in my library each night? Or if an agent did not program the computer?

The complexities of agency and hypertextual reading/writing are neatly dramatized by Writing Space: A Hypertext, published separately from the book and available on Macintosh diskette via an order-card. In some small sense, the hypertext is a version of the book; at least it seems to contain in summary fashion on various “cards” all the book’s topics. But also among its 451 “places” are explanations, illustrations, and comments, several of them witty and trenchant. It’s fun to browse the stack. My own experience resembled conventional reading much less than playing Super Mario Brothers; Bolter himself invites the analogy by describing the text as an interactive game with a “center” that we’re challenged to find. I scanned cards rapidly for clickable icons or bold-faced text, pursuing the “center,” reading scarcely a word. Having found it, I’m tempted to give you directions, like the “secrets” articles in the Nintendo magazines my son wishes I would buy. (I’ll say only that the path I took led through Wittgenstein.) If I could call my action “reading” or “writing” at all, so might I call hitting buttons on the television remote control.
Bolter keenly recognizes the danger that electronic writing might become mere channel-switching, the reader a viewer of perceptual form rather than a participant of symbolic interaction. He discusses the limitations of virtual reality and the televisoning of culture. But even these cautions skirt a larger ethical issue. I mean neither the ethics of access nor the spreading technical industrial complex. To his credit, Bolter addresses both. Rather, I ponder the prospects of social change in a hypertextual world where hierarchical knowledge has ceded to “digital rhetoric,” where one cannot argue from principles since principles are but signs among other signs. Of course, the concern transcends this book. Even as a confirmed antifoundationalist, I wonder where any of us might stand among the hypertextual play of signs to promote “justice.”

I cannot optimistically embrace “an extremely powerful leveling force . . . at work in our society.” Even less am I consoled that

our whole society is taking on the provisional character of a hypertext: it is rewriting itself for each individual member. We could say that hypertext has become the social ideal. ... The message is that a child (as an ontological individual) should be free to choose what he or she wishes to do in life. That freedom of choice includes everything: profession, family, religion, sexual preference, and above all the ability to change any of the options (in effect to rewrite one’s life story) at almost any time. Admittedly, for many Americans this ultimate freedom is not available. But the idea remains, and it is the ideal of a network culture. (233)

Desire cannot sweep away Bolter’s “admittedly.” I’m not convinced that electronic writing will be a better agent for good than print, and I worry that it may even, perversely, excuse the status quo. If this writing space cannot defend “what is” as “what should be” then neither can it contest “what should not be.” But perhaps mine is an impoverished imagination, slavishly bound to print literacy, a fly in the fly bottle unable to grasp a fully realized hypertextual writing space. I do know that I’ve been able to represent only a fraction of the ideas in this rich book. I expect that future debates of the technologies of writing and mind will pass productively through Jay David Bolter’s topography.


Reviewed by Michael Strickland, University of Georgia

Patrick Hartwell, in his Foreword, explains that this book is “for the most part, ‘mere narrative.’ But this narrative rings true, as we say of good fiction, and Wendy’s observations have the texture of felt life.” When I first read this introduction as someone involved in my own ethnographic study, and as a