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Technotropes of liberation: Reading hypertext in the age of theory

Hocks, Mary Elizabeth, Ph.D.

University of Illinois at Urbana-Champaign, 1994

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TECHNOTROPES OF LIBERATION:
READING HYPERTEXT IN THE AGE OF THEORY

BY

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THESIS

Submitted in partial fulfillment of the requirements
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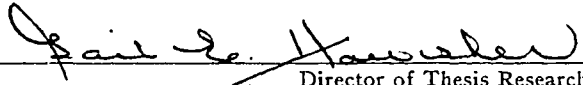
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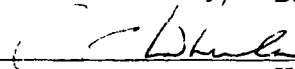
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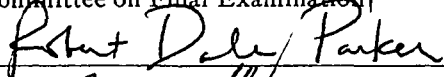


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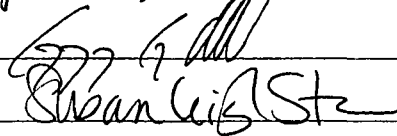


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Chapter One

Hypertext Computer Writing Technology: Theories of Reading, Writing and Response

A Selection Of Hypertext Definitions

Electronic Footnotes "In a computer hypertext article, electronic footnotes like these actually pop up on the screen whenever you point your cursor at a 'hot' word and click the button on your mouse." David Jackson, *Time*, Feb. 8, 1993.

Nonsequential Writing "By 'hypertext,' I mean *nonsequential 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." Ted Nelson, *Literary Machines*, 1987.

Information/Publication Technology "*Hypertext*, a term coined by Theodore H. Nelson in the 1960s, refers also to a form of electronic text, a radically new information technology, and a mode of publication." George Landow, *Hypertext: The*

Convergence of Contemporary Critical Theory and Technology, 1992.

Alternatives for Reading "Hypertext presents several different options to the readers, and the individual reader determines which of them to follow at the time of reading the text. This means that the author of the text has set up a number of alternatives for readers to explore rather than a single stream of information." Jakob Nielsen, *Hypertext and Hypermedia*, 1990.

Exploratory vs. Constructive "Exploratory hypertext is a presentation technology. Constructive hypertext is a tool for inventing, discovering, viewing, and testing multiple, alternative, organizational structures." Michael Joyce, "Siren Shapes: Exploratory and Constructive Hypertexts," 1988.

A Field of Dreams "Hypertext, in effect, introduces 'purpose' or 'design' into the scatter of electronic writing, and its principle tool for doing this is its linking mechanism. . . . As one moves through a hypertext, making one's choices, one has the sensation that just below the surface of the text there is an almost inexhaustible reservoir of half-hidden story material waiting to

be explored. That is not unlike the feeling one has in dreams that there are vast peripheral seas of imagery into which the dream sometimes slips, sometimes returning to the center, sometimes moving through parallel stories at the same time."

Robert Coover, *New York Times Book Review*, Aug. 29. 1993.

An Egalitarian Network "A hypertext is a network of textual elements and connections. . . . 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." David Jay Bolter, *Writing Space: The Computer, Hypertext, and the History of Writing*, 1991.

A Virtual World "The tablet become a page become a screen become a world, a virtual world. Everywhere and nowhere, a place where nothing is forgotten and yet everything changes." Michael Benedikt, *Cyberspace: First Steps*, 1992.

Writing technologies, from the stone tablet and parchment to the printed book, mediating tools from the quill pen to the word processor, and communicative systems like the postal system and the telephone all usher in new cultural

practices and makes others obsolete.¹ The selected definitions for hypertext computer technology encompass a wide range of literate practices and cultural interpretations. From the functional structures like electronic footnotes and information organization, to cognitive descriptions like nonlinear writing and reading strategies, to utopian visions of new spaces like a field of dreams, a radically democratic network, hypertext emerges as the brave new world of cyberspace.

To intervene into the current popular claims about hypertext, this study undertakes a thorough critique of these abstract assumptions by testing hypertext's use in specific relation to critical theory, to the technology of the electronic book, to computers and writing practices, to network collaboration, and to composition theory. By taking a deeper, more careful look at reading and writing of the hypertext electronic book, we can come to a much clearer and ultimately broader understanding of what these literate activities have to offer in research and in the computer classroom. The emphasis on a "rhetoric of technology" for hypertext reading, on systematic descriptions of online navigational strategies, and on the cognitive assumptions about the "natural" knowledge processes of hypertext association—all vital for software development—have severely limited our understanding of electronic texts in relation to readers, writers and computer culture.² Neither the rhetorics of hypertext nor cognitive studies have contributed a

substantial understanding of socially-situated readers, writers, or computer culture.

Electronic writing practice includes current computer literacy with writing, information and communication technologies. Within electronic literate practices, hypertext is valued both as a tool to empower a reader—a means to an end—and as a “radically new” technology and world in itself. The definitions also point to two fallacies or interpretive extremes. The instrumental *idea* of hypertext as a simple tool for a predetermined end—empowering the reader—is set against the value of hypertext in and of itself without looking at specific material instances of its use. This justification points to an inherent paradox about analyzing any technology. An analysis of a mediating technology that we use to produce and consume our own culture must incorporate the dialogic relationship between technological innovation and cultural practice. A “radically new” writing and information technology has no innocent birth, but rather emerges from an ideological climate of specific communicative and discursive practices; at the same time, a technology’s value can only be determined *within* its process during specific moments of cultural practice. Hypertext is lived culture.

Political desires for freedom and flexibility motivate the popular image of hypertext as radically new. But who really controls and uses these hypertext mediating tools for reading, writing and virtual world navigation? Again and

again, the character of "the reader" comes up in these definitions, not only as a description of abstract processes, but also as the key justification for why hypertext is so valuable. If we want to value hypertext writing and communicative processes and make them part of research and our classrooms, we need much more careful and rigorous research about what hypertext writing has to offer specific groups of people. This study does precisely that by looking at hypertextual theories, writing practices, and readers and writers in context.

I see this analysis of hypertext reading and writing as a direct contribution to studies in computers and composition, to writing studies more generally, and to the growing, interdisciplinary field of computer-mediated culture and communication. Like communications studies, the field of computers and writing has encompassed numerous methodologies, including discourse analysis, empirically-based qualitative research, analysis of computer pedagogy, cognitive studies and accounts of applied computer-assisted instruction.³ Much of the work published specifically on hypertext, however, has either been classroom-focused or based on software development projects and cognitive/navigational issues.⁴ In contrast, the most influential hypertext *theorists* have been Jay Bolter and George Landow, who both write speculative, literary-based readings of hypertext technology, critical theory and hyperfiction. Bolter's *Writing Space* and Landow's *Hypertext* both use a combination of historical, linguistic,

and literary theoretical perspectives. But neither text treats the cultural context and literate practices surrounding hypertext technology in any depth. And neither addresses any specific questions about how people read and write hypertext in electronic social spaces, or how technological tools mediate composing processes carried out in particular writing and reading contexts. These are the questions, crucial to composition studies, and crucial to defining relationships between technology and lived culture, that I take up in this study.

Rhetorics of hypertext reading, writing and navigation have been limited to fairly formalistic descriptions of nonlinear, text-centered activities; of the "arrivals and departures" between destinations; of new kinds of "order and coherence" that can form in hypertextual space; and of the temporal sequence of events in a hypertext reading or writing experience.⁵ These rhetorics are not only tied to "print culture," so-called by Jay Bolter and others: they are tied to print conventions and book design metaphors of the new "electronic book," and to a formal analysis of the electronic medium. In fact, most commercial electronic books are just the screen equivalent of a printed page with margins; they actually limit the possibilities of hypertext writing and communicative activities. Do the "rhetorics of technology" really tell us anything, then, about reading and writing practices in electronic writing? Stuart Moulthrop argues that hypertext is not a new genre at all, but a new media

that requires some combination of both visual literacy and computer literacy: "hypertext and hypermedia seem likely to instigate a **second literacy**—secondary in that this approach to reading and writing includes a self-consciousness about the technological mediation of those acts" ("Revolution" 36). In other words, technological literate practices such as hypertextual reading and writing require more than a description of new rhetorical forms or genres. The technological writing tools themselves participate in the social ideologies of periods in which they arise (see Kaplan "Ideology"). Hypertext writing tools and technologies, reflecting the desires of their designers for nonlinear writing and open, unlimited linking of textual networks, establish the technological authority for a certain type of writing, and these tools also mediate an interested set of literate practices.

Contemporary scholarship and the mass media alike have represented hypertext as quintessentially postmodern because of its indeterminate structure, its random sampling and borrowing of cultural texts, and its encouragement of readers to become writers of the text. The claims about hypertext's relationship to critical theory and postmodern culture, however, say little about hypertext literate practices—namely, the reading, writing and consumption of hypertext books. Critical discussions of hypertext always invoke the reader as an abstract, implied "reader," and the power and freedom of that implied reader is often simply inferred from

hypertext's democratic, non-hierarchical and network-like structure. To interrogate these abstract claims, I analyze hypertext books as technical innovations, as postmodern literary experiments, and as the products of social practices on electronic networks. I offer a new theory of hypertext reading and writing in which a social construction of readers is privileged in relation to specific types of texts and writing contexts. Rather than talk about the abstraction of "the reader," I analyze the effect of hypertext writing on several groups of hypertext readers and writers who share a culture that is largely computer-mediated.

Because writing technologies are tools that mediate the dominant ideologies of communication and literate practices at a particular time, hypertext writing currently reproduces many post-structuralist linguistic processes. Electronic writing and computer-mediated communication are both situated actions within a certain technological horizon. That horizon is now the worldwide electronic network and the kinds of discursive activities it currently makes available in what many call the information age. Hypertext, a technological structure for nonlinear writing, includes the multiple paths and links available on computer networks and the World Wide Web.⁶ Hypertext electronic discourses are often shared discourses between particular groups of readers and writers. When reading and writing are collective activities, these literate practices help create political and aesthetic meanings for particular groups of reader/writers, who

themselves participate in multiple overlapping electronic interpretive communities.⁷

With this larger framework in mind, I begin by critiquing the discourses about hypertext and its relation to theory and culture. I show how utopian ideals underlie the designs of hypertext books, the literary uses of hypertext, and the public discussions about hypertext in the popular press. I call these statements "technotropes of liberation"; they permeate hypertext theory and the parallel postmodern theories of narrative and reading practices.⁸ I identify parallel ideals that have emerged with this new technology and with post-structuralist theory: for example, the utopian claim that a world-wide, hypertext information system like the World Wide Web can make all knowledge available to the public in a "docuverse" without the accompanying gatekeepers and limits on information. Like the discussions of liberating "information highways" in the popular press, these visions of free exchange beg for more careful political critique. My analysis of the keyword "hypertext" (some of whose multiple and often mystifying definitions appear above), in particular relation to the postmodern concepts of texts and readers, demonstrates how theoretical inquiries have themselves participated in the same idealism that has always characterized theories of hypertext. Such images are examples of the liberatory motifs that I take up in detail in Chapter 2. An initial theoretical and historical analysis

provides an important backdrop for the current discussions of hypertext.

I then critique several representative hypertext books. These electronic texts are designed with structural qualities that derive both from the mediating hypertext technologies and from the text-design metaphors that represent familiar print reading and writing conventions. The so-called "Electronic Book," then, actually represents the inexhaustible and always open postmodern text within an economy of information. I also describe how popular hypertext fictions, called "hyperfictions," are composed, read and discussed by a small and active group of readers and writers, a group that I participate in myself. The self-presentation and extended reflection in text-based electronic interviews and group discussions give a focused perspective on why certain readers and writers are so engaged by hypertext fiction writing. Among other things, a surprising set of conflicts emerges for these reader/writers between the limitations of writing technologies and the promises of experimental discourses and writing processes that hypertext facilitates. Finally, I move to the collaborative hypertext discussion and writing by several groups of writers and academics over the electronic network, and to my own role as a researcher and active participant in these network negotiations.

Although I do use interviews and my own participant observation of the lists, this study is not an ethnography of

hypertext readers, but rather a broad description of one type of reading and writing in action, what Geertz calls everyday practice. Popular hype about the virtues of this new technology and its subversive qualities helps constitute the broader adoration of "cyberspace" and serves as a backdrop for many discussions of hypertext fiction. Electronic networks must be analyzed as both a medium of communication for those engaged with hypertext fiction and a site for cultural processes to take place, such as consensus building, conflicts, and the on-going negotiations of what defines "The Electronic Book" and hypertext itself.

Electronic Networks as Social Spaces

Electronic networks, as settings for literate practice, include gendered and contentious social spaces where negotiations and polemical interventions take place. To dramatize this activity, this study has two complimentary parts: a critical analysis of hypertext discourses and electronic books, and a qualitative study of electronic literate practices that focus around hypertext. I combine two primary methodologies: [1] the cultural and textual analysis of criticism, popular discourses, and hypertext technology; and [2] the qualitative analysis of open-ended interviews and group discussions with hypertext writers and readers conducted over electronic mail. These methods are commonly used in cultural studies, computer-mediated communication, composition studies and sociological research; they have novel elements as well that are dictated by the

electronic medium of the computer network. This networked communication and writing, because of its immediacy, mutability and overlap with other communication activities, blends conventions of conversation and dialogue with those of writing texts: "This ethereal quality of the messages makes them in many ways more like talk than like writing" (Baym "Creating Community" 5). The phenomena of electronic discussion also resembles on-going correspondence through letter writing. Speech events and texts are more closely related, however, in electronic discussions than in print discourses.⁹ In fact, network discussion groups actively exploit these conversational features to build distinct electronic discourse communities. It seems appropriate, then, to study messages as text and as communication within the domain of networked electronic writing.¹⁰ The interactive nature of computer-mediated communication demonstrates the interdependent and ephemeral relationships between specific utterances, social discourses and various contexts.¹¹

"Participant-observation" in the electronic medium admittedly gives limited access to writers' reading and writing processes, and to writing contexts.¹² Electronic conversations are always mediated by what is still largely a text-based technology. Paul Prior once expressed skepticism on an electronic discussion list: "Carrying ethnography into virtual worlds seems interesting (and valuable), but I have to admit that purely electronic inquiry stretches my definition of ethnographic work. . . . Doesn't electronic

ethnography boil down to textual analysis supported perhaps by questionnaires and correspondence?" (WAC-L 24 Nov. 1992).¹³ Despite the appearance of new research on electronic conferences and other computer-mediated discussion groups, these questions are still worth asking. In what ways can one really "be there" when limited exclusively to the electronic medium? Is a researcher on the net who participates in and observes textual, communicative and social acts an ethnographer, a communication researcher, or a textual critic? The electronic network is the site where I as a researcher act as a participant, an observer, and an interviewer. But because the boundaries between electronic text and speech are often unclear in electronic conferences specifically, these utterances must be considered both written text and spoken dialogue. Such communicative activity has implications for writing pedagogy and for the politics of cultural discourses.¹⁴

This study of computer-mediated hypertext writing and communication draws upon qualitative techniques from ethnographic methods, which has precedent in communication studies. Nancy Baym, for example, argues for the validity of studying cultural communicative practice through linguistic acts in the electronic media: "the discourse, shaped by the forces of the [computer] system and object of interest as well as the idiosyncrasies of the participants, carries inordinate weight in creating a group's distinct environment" ("From Practice to Culture" 5). Baym demonstrates how

computer-mediated communities are formed, using the example of a soap opera fan discussion group on Usenet called `rec.arts.tv.soaps (r.a.t.s.)`:

[A]ny "speech community" with distinct shared ways of speaking could be considered a folkgroup. This formulation suggests that what folkgroups minimally require is "one common factor" and a communication network that links all members to other members, if not to every member. Computer-mediated groups share topics around which they organize, the system which links them, and the communication that passes between them.

("Creating Community" 1-2)

These remotely-linked computer-mediated communities who share discourses and communication practices are, for Baym, new "folkgroups" that warrant significant cultural study. Similarly, hypertext writers can be considered a computer-mediated community, because they all write electronically, they often communicate through e-mail, and they participate in common electronic social spaces to discuss shared topics. The overlapping electronic discourses, including published and unpublished written hypertexts, one-on-one conversations between myself and other participants, and group discussions on electronic conferences, all form the writing context and the organized culture for hypertext writing. A place to begin study of electronic conversation and textual production is, then, the interpretive culture-building communities created and enacted over the network.

I study the complex of social contexts by corresponding with hypertext readers and writers about their practices with both printed fiction and hypertext fiction. My focus on one "genre" or type of hypertext writing derives in part from how Eastgate Systems publications currently dominate the market of hypertext books. Aside from the literary pedagogical hypertexts discussed in Chapter Two, little strictly expository hypertext writing is available commercially.¹⁵ The reception of hyperfiction demonstrates how hypertext writing has recently proliferated and received a lot of press, and steadily gained readership over the last two years. The distinction, however, between hypertext fiction and other types of creative writing is purely arbitrary and even artificial, because hypertext writing often includes multiple genres like poetry, history, autobiography and personal electronic mail. In fact, my correspondents often break down these generic categories in their own discussions of hypertext. This study, with its focus on narrative fiction, can compare relatively similar reading practices in print and electronic media and describe a focused set of overlapping electronic reading, writing and communication practices surrounding one type of hypertext writing.

The messages from electronic interviews are written texts, and somewhat more reflective and retrospective accounts than face-to-face interview data. People write electronic responses for many reasons and in a variety of settings—office, home, alone or in groups, and even in the

classroom. Some people take time to craft a written response, depending on the communications software used, on the nature of the conversation, or even on the time of day. Some people send messages immediately, with no revision or even a second glance, and some labor over messages for hours before "posting" them to a public discussion group. Some people anticipate the response of others in what is clearly a social forum, complete with a number of unknown, unacknowledged and ever-changing eavesdroppers, known as "lurkers." Given this variety, defining authorship and "audience" is often difficult. The issue of how to define and conceive of dialogic, electronic "response" is thus crucial to my theory, my methodology and my analysis of literate practices in hypertext. My goal is to use network conversations, group discussions and interviews, and my own experience as a researcher, communicator and writer on the net, to yield as thick a description as I can of these social spaces, full of collective horizons and collaborative acts.

Postmodern Theory in Action?

As post-structuralist practice has become a central focus of composition studies, a broader and more positive sense has emerged of how postmodern critical theory and composition theory intersect. Lester Faigley's *Fragments of Rationality* outlines the growing importance since 1980 of post-structuralist linguistic theory and social construction for composition theory. He identifies the postmodern "subjects" of composition by pointing to the necessarily

fragmentary and partial nature of concepts like "authentic voice":

Those teachers of writing who define good writing as truth-telling assume that truth comes from within and can be conveyed transparently through language. The teacher as receiver of truth takes the position of bearer of authority who can certify truth. (131)

A consciously postmodern pedagogy can help students authorize their multiple and fragmentary voices. Similarly, James Berlin demonstrates how postmodernist conclusions about language and culture parallel discussions of social-epistemic rhetoric, where the sender and the texts are both constructs of signifying practices: "The work of rhetoric, then, is to study the production and reception of these historically-specific signifying practices. . . . Writing and reading are thus both acts of textual interpretation and construction, and both are central to social-epistemic rhetoric" (21-22). By arguing that the postmodern turn in the humanities is really a return to rhetoric and to literate discourse practices, Berlin shows how postmodern theories always intersect with rhetorical theories. Research in composition practice has increasingly demonstrated the value of post-structuralist theory and of social construction for enhancing experimental and self-reflective processes and writing activities.¹⁶

We can't overemphasize, however, how technological tools mediate the values inherent in certain ideologies of writing, that are themselves historically located. While computer programming and artificial intelligence enhanced the programmed intelligence of drills and skills learning, and the word processor enhanced revision in the recursive, but still linearly conceived writing processes, hypertext enhances the socially-situated and fragmentary processes now valued by composition theorists. Hypertext encourages as well the vastly increased speed of textual production and reception, and of communication more generally, that currently dominate American culture. Even the word "hypertext" seems to suggest something better and faster than just text: something hyper real, as opposed to "real" texts. The many discourse structures and activities encouraged by hypertextual activity, however, are *already* available as part of print culture. The standard printed book model for text in western culture might be linear; however, print text has always incorporated structures and processes that are multi-linear, circular or even random, in terms of how they might be received or consumed by readers. Hypertext technology doesn't create these practices, but rather mediates and enhances in electronic form what already occurs in communicative and literate practices all the time.

The political claims of developers and theorists of hypertext participate in a general longing for utopia and for an ecology of worldwide communication through cyberspace.

This utopian language functions in contemporary technoculture as both inspiration and the collective horizon for technological invention, and as a normalizing force of the political desires for freedom and equality within a capitalist economy—in today's press, "the information highway." People always assume this highway will be radically democratic and disperse all information, though they are beginning to realize it will never be free. However, it is increasingly apparent that social identities are not erased by technology. Even subversive countercultures like "hackers" offer fairly limited resistance to the industrial capitalist drive for democratic technological change. The cyperpunk movement, for example, beloved of the popular press and illustrated in popular fiction by writers like William Gibson, Steven Levy and Bruce Sterling, often counters this cultural utopianism with specifically anti-utopian visions of dark, controlling futuristic worlds. Cyberpunk fiction, however, relies on a hard-boiled detective convention that lacks the social range and politics of feminist futuristic fiction. Andrew Ross explains:

The adventure formula that Gibson used, and others imitated, offered a pulp narrative that was unable to accommodate the full range of socially critical perspectives on the future that had been present in, say, the feminist utopian SF novel of the seventies. What it did signify, however, were

certain defensive characteristics of masculinity in retreat. (153)

Not just subversive counterculture, cyberpunk fiction is, for Ross, also an impotent gesture of feminist backlash and an attempt to reify the masculinity of the hard-boiled and alienated console cowboy.

Male countercultural activities and values are always painted as more subversive, but are actually more acceptable. As Ross explains,

Bad white boys, unlike their female counterparts, can draw upon a long history of benign tolerance for their rebel roles, while their male and female counterparts of color are marked as a pathological criminal class. The values of the white male outlaw are often those of the creative maverick.

(162)

Similarly, the recent appearance of popular hyperfiction parallels this explicitly gendered countercultural writing practice. Many of these experimental *avant garde* fictions are modeled after a dominant type of male-authored postmodernist fiction discussed by literary critics like Brian McHale and popularized by writers like Thomas Pynchon, John Barth and Robert Coover. Coover has himself become actively involved with hyperfiction writing and criticism. Until quite recently, however, hyperfiction writing has been produced predominantly by a small group of white male writers who see themselves as academic rebels and who perform their

experimental discourses for one another on electronic networks in conferences such as "Technoculture." There are male feminists in these spaces, of course, and female rebellious performers. In a collective response, however, some women hypertext writers have created alternate social spaces like "Hi-Pitched Voices," an electronic discussion list. Women writers collaborate in hypertext online and offer constructed identities that differ from male po-mo. These identities include the collective "voices" of women writers and their predecessors: for example, Emily Dickinson's riddles included in the Voices wing of Hypertext Hotel, an interactive MOO space.

Feminist network identities also include network travelers who enact deliberate interventions in masculinist discourses. Arguably, a specifically feminist cyborg, what Donna Haraway describes as a blurring of human-machine-animal identities, is more subversive, more dangerous and more resistant to dominant cultures than a hyperfiction writer, hacker or cyberpunk.¹⁷ Haraway advocates a fully textualized and fully technological postmodern landscape where "situated knowledges" completely implicate us within certain cultural discourses and give us a perspective to act politically: "I want to argue for a doctrine and practice of objectivity that privileges contestation, deconstruction, passionate construction, webbed connections, and hope for transformation of systems of knowledge and ways of seeing" (192). The epistemological and strategic value of such situated,

socially-constructed knowledges applies nicely to the webbed interconnections of postmodernist discourse. A situated cyborg on the net can implicate herself specifically as a feminist in the politically-interested institutional structures that create her.

Is the faithless feminist cyborg who can freely traverse the nets, in turn, a utopian goal couched in dystopian language? These cyborg visions and their political claims must be put in perspective. After all, the narrative experimentation of cyberpunk and the theoretical abstractions of Haraway and Ross are accessible to only an elite few. The heuristic value of experimentation and utopianism could include an ability to envision new ways of structuring the social world that then are assimilated into popular culture, such as Ted Nelson's vision of a world-wide, pay-to-cite document sharing system that replaces copyright. However, if this vision mystifies the economic and political inequalities of a commercialized network, it exacts too a high price from too many people. I develop this theme of utopian mystification here and throughout this study, because the politics of hypertext are often invoked, but rarely followed through to their implications for specific groups of people or for situated literate practices. To highlight this important political theme, I use feminist critique throughout this study to demonstrate how the unequal relations of various real-world social identities are often reproduced by these supposedly radical and liberating technologies.

The Reading and Reception of Hypertext Books

To take up and extend Berlin's idea of writing and reading activity as situated textual interpretation, we need now need a radical reader-response theory of hypertext. Reader response situates just such literate practices as interpretive acts within a constructed discursive horizon. I offer a reception study of hypertext electronic books written with software programs like Hypercard and Storyspace. Reception includes the production and the consumption of electronic texts, and the community-building practices among a group of people who are writers, readers, publishers, software developers, and teachers of writing on computers. Like Janice Radway in her reception study, *Reading the Romance*, I look at readers, texts and readings, in my case of "Eastgate School" fictions and other collaborative exchanges over networks.¹⁸ My readings answer specific questions like: What kind of fiction is this, and how is it gathering an audience? What qualities does it share with conventional paper-based fiction, and how does it differ? Who reads hypertext fictions and what do they get from the experience? How do people discuss these fictions? Drawing on theories of narrative and of reader response, I also ask theoretical questions. What is hypertext's current relationship to contemporary critical theory and postmodernism? What is its relationship to popular technocultures?¹⁹ What theoretical conclusions can we draw from an account of specific hypertext reading practices?²⁰ I answer these questions about the

reading and writing of hypertext books by looking in subsequent chapters at the experiences of reader-writers.

Collaborative hypertext writing processes are emerging within the collective horizon of wide area electronic networks and interactive electronic spaces. Karen Burke LeFevre's notions of the "collaborative" and "collective" perspectives for invention are precisely the areas that most need exploring for new writing technologies and other electronic media. The mediating action of network technologies, as well as the culture of the network and particular discussion groups on the network, all contribute to the collective climate for invention. For example, electronic writers can now imagine their texts as multimedia—with film clips and illustrations, as well as links to other supporting texts. Writers, teachers, software designers and artists can all publish their own texts on the World Wide Web, publicize them to thousands of people on newsgroups, and gather responses from colleagues and other readers.²¹ Such activity is institutionally authorized by the increasing number of academic and popular journals available online and the expanding number of public resource spaces on the Internet.

Electronic conferences specifically function as collaborative reading/writing/response groups, as supportive "literary clubs" for writers who see themselves on the fringe of literary and academic culture.²² From a collective perspective, the dominant ideologies about the authority of

print books, the privileged linear reading and writing practices, the laws about copyright, the material circumstances of available technologies, and the appropriate communication conventions all constrain how hypertext writers imagine their practices. But to date, the effect of the new writing technologies on collaborative and collective horizons for invention is very poorly understood. Ironically, the collective and institutional forces, which provide the broader context for any kind of writing and response, are often difficult to see and define, but they exert the most influence on the practices of particular writers and the responses of readers. The wider cultural forces surrounding technology that hypertext might be partly resisting or attempting to resolve include the inevitable limits on access to information, the privileges and restrictions built into electronic knowledge systems, and the increasing control of information bureaus and other capitalist institutions. These are precisely the collective conditions of technocratic power that feminists and cultural critics need to investigate. Such critiques must be central to these wider horizons of hypertext practices.

The electronic communicative media that provide the immediate context for hypertext writing is itself full of overlapping social and textual networks. The topic-oriented open bulletin boards like Usenet newsgroups, the subscription-only serious discussion groups like listserv groups, the Multi-User Dimension fantasy role-playing games

and spaces (MUDs and MOOs), the real-time "talk" features like Internet Relay Chat (IRC), and the growing corpus of electronic hypermedia texts that can now be linked together by readers on the World Wide Web constitute the discursive contexts for electronic writing. Communication in the electronic medium thus requires more than a traditional paradigm of speaker, audience and message in multiple contexts. All this interactive complexity makes conceiving the categories of authorship, text, context and response very difficult for electronic writing, as Louise Phelps makes clear in her critique of simplistic representations of the "reading/ writing transaction":

They are radically incomplete if taken to account comprehensively for the social dimension of writing. These difficulties foreshadow the imminent replacement of dialogic interaction (an exclusive, cooperative relation between writer and reader mediated by text) with a more fully contextualized, polyphonic, contentious model of transactionality that encompasses multiple participants and voices along with situation, setting, institutions, and language itself—and finds it hard to maintain firm boundaries between self and other." ("Audience and Authorship" 156)

The intertextual weaving of the reader, writer, text and contexts that make up the web of interactions in a given electronic text or discussion group must include the

negotiations and power relations that are a part of any social space. Those of us who participate in academic electronic discussion lists know that sometimes they are like coffeeroom academic chatter, sometimes like full-fledged debates, and sometimes like the exchange forums in print journals. Always they have many academic things going on at once—everything from quoting your proper source to looking for jobs or candidates. Despite the attempts at quoting others, there often are not firm boundaries between self and the electronic other. Furthermore, the assumptions about linear reading and writing practices that many composition scholars bring to a theory of reading and response are nearly impossible to apply to the interactive electronic media. Even if one tries to engage in linear correspondence, it is impossible to keep others from interrupting, adding ideas, and taking what you just said in a new direction. As in any sustained correspondence, topics and key events can be sequentially reconstructed, but the experience itself is non temporal, nonlinear and full of ellipses, like the plot of an epistolary novel. The electronic context, like spoken conversation, can shift quickly between the exchanges, or overlap with other contexts almost indistinguishably; for example, members of the academic discussion lists for Writing Across the Curriculum (WAC-L), for Writing Program Administrators (WPA-L) and for Writing Centers (WCA-L) often carry their discussions seamlessly from one list to another. In a formal sense, then, electronic correspondence and

writing transcribes post-structuralist discursive and communicative activities in a linguistic-based medium.

But the social issues surrounding this electronic medium go beyond defining formal elements and complicating the boundaries of audience. Authorship is a complex and difficult issue, not to mention a legal issue, with the rise of electronic networked communication. The blurring of self and other, of reader and writer, is in tension with a writer's sense of authorship. In order to write, one usually establishes some authority and responsibility for one's text and intention in writing, even if it is only a heuristic fiction required for composing some utterance. You (the author) must have *something* (the text) to say (the message) to *someone* (the audience), regardless of the media, contexts or writing tools. Phelps worries, understandably, the "unbridled transactionality" of electronic spaces will obliterate the idea of authorship. Technologies do not determine the social space, however; instead, the mediating action of tools and technologies can only participate in the complex social processes enacted in these reading and writing practices. I might add, too, that many postmodern-oriented hypertext writers assert that this difficulty with authorship and the blurring of reader and writer is, in fact, the desirable and deliberate result of their literate practices. The blurring of boundaries gives postmodern authority to their texts and agency to their readers, because readers have

to choose a path through the text. The death of the author, once and for all.

Like hypertext definitions, hypertext criticism often makes claims about the empowerment of "the reader" who becomes a writer or co-author of the text. "Readings," however, are moment-by-moment situated transactions between text, reader and context (Rosenblatt). Reading is defined quite differently by reading specialists, reader-response theorists, those who teach with hypertext programs, those who develop computer programs, and those who use those programs. Each construction of reading brings a set of epistemological assumptions to definitions of the reading process. Despite our feelings about reading as a solitary activity, reading is never an isolated act, but rather a social activity of consensus. Our experiences and expectations as readers, our notions of literacy, our literary conventions and competencies, and our understanding of the reading and writing process all arise within the consensus-making activity of professional enculturation. Collective ways of reading, in turn, can have power and be deployed for political purposes. They occur as socially significant events. Readings, then, are not only interpretive—they are as constitutive of socially constructed communities as any other literate act.

How does hypertext impact our shared relationships, as academics, to certain texts, and the world these texts reflect ideologically and help to create? In other words,

what cultural work do hypertexts and ways of reading perform in history? These important questions about response have been explored by Jane Tompkins and John Rodden, among others. Literary canons, for example, are built within an ideological frame of self-justification: "Western novelistic tradition is full of examples of texts insisting not only upon their circumstantial reality but also upon their status as *already* fulfilling a function, a reference, or a meaning in the world" (Said 44). Similarly, Radway's reception study of popular romance fiction uses feminism and cultural studies to demonstrate how romance novels participate in the ideological apparatus surrounding cultural definitions of romance. Because these readers embrace the conventions of romance in response to their daily lives, they are "resisting readers" (Fetterly), even as they opt for a utopian state projected by the romantic text masquerading as "realistic" text: "the women who seek out ideal novels in order to construct such a vision again and again are reading not out of contentment but out of dissatisfaction, longing, and protest" (Radway 215). Texts, while constructed by readers' interpretations (Fish), still partake in the on-going battle for a dominant ideological meaning in the world.

Said and Radway both demonstrate the mistaken notions of reader-response approaches like those of Stanley Fish. These approaches assume "the limitlessness of interpretation. . . . [S]ince all reading is misreading, no one reading is better than any other, and hence all readings, potentially infinite

in number, are in the final analysis equally misinterpretations" (Said 39). Not only are texts "in the world," but they represent a "will to power," an integral, but often overlooked politics of reading. Critical enterprise partakes in this powerful activity: "critics create not only the values by which art is judged and understood, but they embody in writing those processes and actual conditions in the present by means of which art and writing bear significance" (53). Hence, the horizon of interpretation available for any text, new or old, is always in part created by critical activity. Critical opinion itself is then disseminated into American culture by the popular literary press and media, such as *The New York Times* and the evening news.

Hypertext and Its Reader

Hypertext programs currently rely on a number of rather simplistic cognitive assumptions about those who will use them. The principle cognitive assumption is that hypertext structure, with potentially infinite links in a web of associations between "chunks" of knowledge, models the way we think and traverse bodies of information to create knowledge. In terms of reading, hypertext models the "associative" ways in which we read and assimilate information. This is a simplistic and false way to talk about memory;²³ the point is that scholars often talk about hypertext readers as a certain kind of author-reader in relation to a certain type of writable text, using hypertext and its reader as mutually-

defining. For example, Landow sees a parallel between any hypertext and Barthes' notion of a writerly text, because in both formulations the readers fundamentally become writers of the text. In contrast, Michael Joyce delineates two kinds of hypertext—exploratory and constructive—to distinguish between hypertexts based on how the technology affects users. Exploratory hypertext represents most packaged commercial hypertexts "as a delivery or presentation technology," systems which include the ability "to create, change, and recover particular encounters with the body of knowledge, maintaining these encounters as versions of the material, i.e., trails, paths, webs, notebooks." Constructive hypertexts, unlike exploratory hypertexts, "require a capacity to act: to create, to change, and to recover encounters within the developing body of knowledge. These encounters . . . are versions of what they are becoming, a structure for what does not yet exist" (11). Moulthrop, citing Iser's work on reader reception, points out that "reader-response theory has shown in some detail that the reception of any text (print or electronic) entails complex cognitive activity" making readers "active co-creators of meaning" ("Beyond the Electronic Book" 292).²⁴ Critiquing "the rhetoric of hypertext" as an extension of traditional book conventions, he claims that "deconstructive hypertext" is open to multiple, alternate versions and "would abrogate any ideological closure promoted by the medium, helping users retain a capacity for independent judgment" (296). One

might question whether this is what actually happens. These and other discussions of hypertext invoke an implicit image of reading as a linear search for coherence and the filling of gaps. Moulthrop and Joyce seem to rely on an imaginary or mock reader who will be liberated by the technology to become a constructor of knowledge.

All these assumptions about "the readers" of hypertext have an unspoken debt to a specifically American form of reader-response, which emphasizes linearity, phenomenological process, and a non-historical, ideal reader. Such a theory overlooks the historical, social and political processes that surround both readers and their texts. Thus, while American reader-response theorists have taken up specific European reception theorists, especially Wolfgang Iser, they tend to dehistoricize and depoliticize them.²⁵ American versions of reader-response theory, represented by theorists like Stanley Fish, Louise Rosenblatt, and user of Iser, have focused on reading as an interactive or "transactive" process, a radically subjective act of identification. Michael Bérubé explains that "reader-response criticism has described, among other things, how writers structure forms of address and reader positions to implied, mock, ideal, and 'super' readers; reception theory has sought to uncover the historical, political, and theoretical conditions for the actualization of texts in their myriad contexts" (9). While it overlaps reader-response criticism, reception theory has a distinctly historical and political emphasis. A grounded

theory of hypertext reading needs to acknowledge the historical specificity of our accounts of readership and authorship and to include a social and collective account of reading practices.

British and continental reception theorists can offer us better conceptions of meaning as historical processes in which struggle and contestation determine aesthetic judgments about texts. For example, Hans Robert Jauss defines the aesthetics of reception as accounting for an individual text's "historical position and significance in the context of the experience of literature" (32). A text gains its value within a culture's experience of literature at a certain point in time. His phrase, "horizons of expectation," describes the range of responses available at a particular time, responses determined by that culture's ideologies and the dominant standards of taste. For example, mid-nineteenth-century American literary culture was dominated by women writers and editors who popularized sentimental fictions, causing Nathaniel Hawthorne to complain about "scribbling women." Despite his complaints, *The Scarlet Letter* exploited those popular sentimental conventions, was regarded as literary *avant garde* and, finally, elevated to an American classic. The gap between the aesthetic horizon and the work determines how artistic or *avant garde* it is. A work ahead of its time later gets valorized as a literary classic; particular works then

require the horizons of expectation to change accordingly in an endless dialectical process.

In an historicized and dialectical cultural aesthetics, the dominant, emergent and residual cultural values are always present, and together they construct the widest context for responses to particular texts at a particular time. We don't recognize the emergent form during a transitional period, however, until it appears as an intervention into literate culture, an event that identifies itself as a theory, a period, a genre, a literary movement, or a subculture. Jauss' "eventful history," like Raymond Williams' notion of "lived experience," describes historical response processes as changing "structures of feeling" that are reflected in textual forms. "This structure of feeling is the culture of a period," Williams writes, "which is collectively possessed and depends upon communication for its transmission" (48). These reception and cultural theorists help open up broader and complex images of collective response that consider how struggles for meaning are located in lived cultures, and they highlight the role of communication and other literate acts in forming those aesthetics and horizons. Hypertext fictions are emergent forms during this transitional period of electronic literacy more generally; but they depend upon existing conventions like literary postmodernism for their status as *avant guard* literature. They both fulfill expectations and they disrupt popularized notions of reading and writing. Most

importantly, they depend upon communication, institutional structures like conferences, and the popular literary press for the definitions of aesthetic values that make them possible.

When we look at ourselves as readers now confronting electronic texts, we need to consider the many contexts for reading, writing and response. We always "read as" someone in relation to others at a particular moment—a critically, intellectually, curiously or pleurably-positioned self. The idea of "reading as" might help us reformulate the outdated idea of reader identification. I'd like to call this act a metaphor of recognition, when one imagines and hears the familiar voice that speaks to one's experience and to one's community. A post-structuralist theory of reading insists that "text," "experience" and "community" are always unstable and changing meanings, that the "familiar voice" is always polyphonic, and in fact is created by the very texts in which one "hears" it. Reception theory and horizons of response can demonstrate how ways of "reading as" become *meanings* for particular communities. Reception must necessarily problematize notions and theories of text—the political ramifications of having an unstable text or even non-existent text—and how such texts are used to create literate culture. A reading-centered hypertext criticism must construct what responses might be available at this historical moment to a nonlinear form like hypertext, as well as what arbitrators of taste (particularly within the

academic community and popular literary press) might determine the acceptance of, or resistance to, the kinds of reading and narrative experiences that are available with hypertext. Simply, the text becomes for us what our previous readings and current debates tell us it should be—in this case a self-consciously postmodern pastiche of multiple, linked texts.

Hypertext narrative fiction is indeed postmodernist in the sense of being decentered, with multiple paths of traversing the text, multiple authors and narrative voices, and indeterminate endings. Sarah Sloane describes postmodern fiction as “piecework narratives, fictions told in fragments,” and as analogous to “the process of reading interactive fictions,” which are a precursor to hyperfiction (45). This statement probably best describes hypertext fiction as experienced by postmodernist readers, however. To give an example, the issue of whether narrative depends upon closure for its meaning depends upon who is reading the text and what they expect from that experience. Radway’s romance readers, who rapidly consume plot-driven fictions with conventional marriage endings, will respond differently than regular readers of multiply-stranded narratives like *Mrs. Dalloway* and *The Sound and the Fury*. And if the ending reconstructs the entire novel, as in Faulkner’s *The Sound and the Fury*, can that reader actually finish without some kind of closure? If, on the other hand, multiple narrative

strands interweave and end uncertainly, as in Woolf's *Mrs. Dalloway*, can the closure of an ending ever be reached?

Conclusion: Academic Hypertext as Intervention

If hypertext literate practices are marked by "reading as postmodernist practice," then hypertext writing can intervene in current reading and writing practices, computer classroom pedagogy, and academic politics. Will academic hypertext emphasize traditional splits between the humanities and the sciences, the technical and non technical disciplines, the English and Composition Studies faculty? Or can it, as many of its supporters believe, bridge these disciplines, liberating both teachers and students to look at education as an interdisciplinary project? These wider questions apply to all electronic practice and its place in the humanities. The discipline of computers and composition has embraced technology and an interdisciplinary focus for many years, and has generated the first serious research on uses of hypertext for English and Writing Studies²⁶ As information technologies become more prevalent in academic research, non-technical disciplines will need to embrace electronic research and communicative technologies. The growing interest in computers for education is part of a larger trend taking place in the profession, marked by the practices of electronic publishing and the increased computer literacy required for professional electronic communication. Academic electronic networks, another key part of the information explosion, are now establishing new communities

of scholars, new forms of dialogue and public forums for conversation. To be an insider, however, you must become the po-mo cyborg to master the basics of network travel and willingly be transported into an unpredictable cyberspace and a strange form of conversation, where your comments can instantly be interrogated by unknown beings from anywhere, or ignored and sucked into a black hole. Chapters Four and Five explore just these risks and negotiations by hypertext reader/writers, whose practices already push the boundaries of conventional publishing and academic institutions.

Hypertext is beginning to change the academic community in several ways: for some people, hypertext theory participates in general theoretical movements of critical theory and postmodernism. It defines a critical pedagogy; it also participates in a wider revisionary project of integrating computers and other advanced information technologies into the humanities. Furthermore, hypertext developers and critics have formed a kind of academic subculture, marked primarily by teaching interests, electronic and other human networks, conferences and publications, which overlaps optimistic humanistic-minded technologists and technically-minded humanists. Academic hypertexters (like myself) are often part-programmer, part-theorist, part-technophile. Some critics aim to defend our terrain against the curmudgeons, technology-haters, and high-brow theorists who can't recognize a good thing when they see it. Ted Jennings, for example, sees hypertext as a inherent

challenge to deeply-held assumptions about such sacred academic notions as:

Text.

Author.

Story.

Knowledge.

We must assume, however, that hypertext technology, like any technology, can only be known and understood within its material conditions—the private and public institutions, with their accompanying knowledge gatekeepers.

The scholars and teachers who will increasingly be using computer technology for education and become persuaded to try hypertext technology in their classrooms, as well as the administrators funding such projects, are defining a movement in educational technology that is both theoretical and pedagogical. The relationship between theoretical reflection and pedagogical practice is always complex, with practice and theory constantly interacting, reflecting and deepening one another, creating what Phelps calls the Practice-Theory-Practice (or PTP) arc ("Images").²⁷ Stuart Hall also asserts that we ask how theoretical interventions might spark accompanying pedagogical changes: "what happens when an academic and theoretical enterprise tries to engage in pedagogies which enlist the active engagement of individuals and groups, tries to make a difference in the institutional world in which it is located?" (284). Hypertext theory and practice are currently engaged in just this sort of

dialectical struggle. Hypertext, already a giant in industry, is experiencing growing pains in the academy and the composition classroom.

Hypertext critics have suggested that the post-structuralist nature of hypertext forms necessarily leads to the supposedly liberating and egalitarian spaces created by such forms. What hypertext writers and critics don't often consider is how an audience and a set of potential responses for hypertext writing are still being created; and, as with any response setting, this audience can only materialize through a variety of social interactions in overlapping contexts. Those contexts include, but aren't limited to, the following: the textual and technological forms that are both familiar and strange to a computer-literate reading public; the communications and negotiations between groups of readers and writers to develop a working aesthetics of hypertext writing; the negotiations and tensions between developers of the technology and writers who use it; and the accompanying interactions between reader-writers and educational, governmental and other bureaucratic agencies, and publishing institutions. The following pages will situate hypertext writing practice within theory and these collective horizons of interpretative activity.

Notes

¹Several key sources use a similarly progressive historical argument: Bolter, Heim, Ong, Poster, and Landow. Computers and composition scholarship, which focuses specifically on the use of technology for the teaching of writing, has specifically focused for over fifteen years on new "writing technologies" made possible by developments in computing.

²For the best overviews of cognitive and applications hypertext research, see Barrett, Nielsen, and the 1987, 1989, and 1991 *Hypertext Proceedings*. See also the "Hypermedia Bibliography 1989," an excellent annotated bibliography by Yankelovitch et. al.

³For overviews of Computers and Composition scholarship, see *Critical Perspectives* and *Evolving Perspectives*, edited by Hawisher and Selfe, and *Re-Imagining Computers*, edited by Hawisher and LeBlanc. For an excellent overview and critique of early and overly-optimistic research in Computers and Composition, see Hawisher, "Research and Recommendations."

⁴Noteworthy exceptions to classroom-based and cognitive studies are Myron Tuman's two books, *Word Perfect* and *Literacy Online*, which focus on academic computing as part of a broadened sense of literacy.

⁵See, for example, Slatin, Landow and Delany, Lanham "Word," and Yankelovitch.

⁶Jay Bolter in *Writing Space* was the first critic to describe electronic network communication as hypertext.

⁷This term, coined by Stanley Fish in *Is There a Text in This Class?*, describes a group of readers with some consensus or shared interpretation of particular texts and reading conventions. In this reader-response theory, cultural conventions are signaled and identified by shared interpretive gestures (a wave of the hand that another member recognizes) rather than constructed by specific discursive practices.

⁸See also Rosenberg on the "tropological" analysis of hypertext systems.

⁹See also Landow, "Electronic Conferences."

¹⁰Many of the traditional contexts for observing details about response contexts, and the nonverbal elements of face-to-face interaction, as well as nontextual contexts for

composing processes, are obviously not present on the electronic network. Nonetheless, I find that "ethnography of speaking" methods of conversation analysis is useful for work on hypertext reader/writers. See, for example, Goodwin and Duranti: "The more we pay attention to actual acts of speaking and their embedded practices, the more we realize that any act of interpretation is indeed a social act and participants must continuously negotiate what is being said and what the appropriate, namely acceptable, interpretation is" (26). If I replace "acts of speaking" with "utterances in the electronic medium," and describe various spaces in the electronic network as contexts for such interpretation, then this statement certainly applies to computer-mediated discourse as well. See also Bakhtin's *Speech Genres*, where he uses the term "utterance" to encompass structures of embedded discourses in both speaking and writing and thus narrows the distance between the two.

¹¹See Brandt's description of discourse as situated, moment-to-moment intersubjective work.

¹²I take the term from Clifford Geertz, *Works and Lives*.

¹³This and all subsequent citations from electronic discussions lists are cited in the text by the person's name, the list name, and the date. The full information for discussion lists and their archives is included in the Works Cited by list name.

¹⁴For studies of electronic conferences and their potential for writing pedagogy, see Cooper and Selfe, Selfe "Writers' Conferences," Hartman et. al., and Hawisher, "Electronic Conferences." For analyses of the politics of electronic conference discussions, see Selfe and Meyer and Landow, "Samisdat Textuality."

¹⁵The glaring exception is online computer software documentation. Software help programs, for example, are usually presented in a fully indexed hypertext format. See Johnson-Eilola, *Nostalgic Angels*, for an analysis of technical documentation designed in hypertext.

¹⁶See, for example, Bizzell, Bartholomae and Meyers on social construction and discourse communities, Phelps, *Human Science*, on post-structuralist discourse analysis, and Bridwell-Bowles on feminism and experimental discourses.

¹⁷See also Selfe's use of Haraway in "Virtual Landscapes."

¹⁸Radway's reception study provides a partial precedent for the reception analysis this study uses. Radway uses an

ethnographic study of reader-response to portray a community of romance readers. Her methods include a questionnaire about reading practices, interviews, and observations of readers' meetings, as well as the historical and theoretical analysis of the fiction and its publishers. She gives an institutional history of the publishing, packaging and consumption of romance novels as a popular literary genre and a form of mass culture. She argues that romance texts project a utopian state that provides escape and some resistance, but that ultimately dupes these women into thinking the romance world is reality. Radway struggles with this balance between a feminist critique of romance and an ethnographic account of real readers, and can never finally resolve the contradictions between a theoretical agenda and qualitative study. I hope to have avoided Radway's dilemma by clearly demarcating the theoretical and historical material about *hypertext books* from the interview and network data about *reading practices*.

¹⁹Hypertext writers and readers fit the description of a technoculture as defined by Ross and Penley in communications theory and cultural studies, that is, a subcultural group with identifiable practices and artifacts that form a subset of all current technological practices. Following these definitions, I analyze discussions and representations of the technology within the context of critical, popular and electronic discourses about cyberspace.

²⁰Sarah Sloane wrote the first dissertation on computer-based fiction, "Interactive Fiction, Virtual Realities, and the Reading-Writing Relationship," which incorporates both a literary studies and composition studies perspective. Her problem statement describes a general approach: "to examine reading and writing interactive fiction and to demonstrate how these electronic texts add a dimension to our critical understandings of the ethics of reading, the collaborations of composing, and the rhetorical triangle, as traditionally conceived." She asks these four questions about interactive fiction: "What is the experience of reading and writing interactive fiction? How is this experience different from traditional, paper-based acts of reading and writing? What do interactive fiction and its antecedent, virtual reality, tell us about the reading-writing relationship in general? And how must we adjust our rhetorical theories and models to account for this kind of electronic text?" (4).

²¹I am paraphrasing what John Unsworth, the editor of *Postmodern Culture*, an electronic academic journal, described as the journal's new electronic format beginning January 1994. See "Editor's Introduction."

²²See Gere and Roop for an analogous description of collaboration in nineteenth-century women's literary clubs.

²³See Nyce and Kahn for a similar critique of hypertext's relation to mind and memory.

²⁴See also Jane Douglas, "Gaps, Maps and Perceptions."

²⁵See Holub on the American reception of German Reception Theory.

²⁶See LeBlanc, who interviews many of the pioneering teachers who also were composition software developers and have worked in disciplines other than English.

²⁷Phelps defines this process eloquently as a complex interactive process and "double hermeneutic" of practice, the deepening of theory, and metatheoretical critique ("Images" 43-45).

Chapter Two

Technotropes of Liberation: Utopian Discourse in the History and Theory of Hypertext

For the traditional reader electronic writing offers little comfort: it will in fact confirm much of what the deconstructionists and others have been saying about the instability of the text and decreasing authority of the author. Yet electronic writing will take much of the sting out of deconstruction. As it restores a theoretical innocence to the making of literary texts, electronic writing will require a simpler, more positive literary theory. (Jay David Bolter, *Writing Space*)

[H]ypertext has much in common with some major points of contemporary literary and semiological theory, particularly with Derrida's emphasis on de-centering and with Barthes' conception of the readerly versus the writerly text. In fact, hypertext creates an almost embarrassingly literal embodiment of both concepts, one that in turn raises questions about them and their interesting combination of prescience and historical relations. (George P. Landow, *Hypertext: The Convergence of Contemporary Critical Theory and Technology*)

[A]t least four audiences may still be hostile to [Landow's *Hypertext*]: Curmudgeons who don't know which upsets them more, critical theory or technology; closet word-processors for whom the concept "programming" still smacks of mind control; theorists for whom Barthes and Derrida and Lyotard are old wallpaper against which background some significant struggles are (at last) taking place; and technophiles ashamed of their access to tools that others cannot afford. (Edward T. Jennings, "THE TEXT IS DEAD; LONG LIVE THE TECHST")

The 'triumph of theory' in literary studies and their transformation by the digital revolution are aspects of the same sweeping change. (J. Hillis Miller, "Literary Theory")

These statements are certainly true in one sense: hypertext reading and writing involve nonlinear recursive processes and unstable texts and thus incorporate key ideas of post-structuralist discourse and writing activities. They also make clear what critics value most about hypertext technology: hypertext, because it models theory in action, makes theory more *visible* and more *palatable*. This theme emerges again and again in theoretical discussions and case studies alike. For example, two professors from the college

of Wooster describe in a 1990 *Academic Computing* article how students studying literature and theory benefited from using hypertext applications to analyze stories.

We are convinced that the operation of literary theory (and by extension, the operation of many theories in the humanities and social sciences) can be modeled or simulated. Hypertexts in *Guide* did simulate the operation of intertextuality, and *Hypercard* programs did model some aspects of the production of narratives according to the theories of Propp and Aristotle. (Havholm and Stewart 48).

The value of "simulating" a theoretical principle and of generating narratives according to structuralist principles are pedagogically questionable. The authors claim that students also produced these theoretical models and simulations themselves, a "deductive" analysis that puts theory to the test. These ideas of embodying, testing and thus validating postmodernist and post-structuralist theory are common, I have found, in hypertext criticism; however, such assumptions are based on a narrow and negative notion of both theoretical practice and the mediating role of writing technologies.

Hypertext Technology: A Revolution for the Humanities?

Critics, data-surfing cyberpunks, and the editors of *Time Magazine* have all claimed that hypertext literally embodies a socially radical and gender neutral postmodernism. *Time*, for example, illustrates on its cover an androgynous

cyberpunk surrounded by hi-tech virtual reality equipment (see Figure 1). In these accounts, hypertexts, or nonlinear electronic texts, are postmodern in the following ways: they are decentered, they contain multiple paths for traversing the text, they include multiple authors and voices, and they have indeterminate endings. Hypertext readers are liberated to co-author and even create the texts they read, gaining a semiotic freedom that hypertext critics Landow and Bolter trace to post-structuralist linguistic and narrative theory. Hypertext electronic writing seems on the surface to embody the theoretical claims of Roland Barthes and Jacques Derrida about readers and texts. The quotations from hypertext theorists imply that hypertext, because it embodies and parallels theory like never before, makes theory more palatable. Thus, deconstruction and post-structuralism lose their sting, and theory finally has a significant, tangible object to represent it and perhaps even to test the limits of post-structuralism and deconstruction.

Within the discursive practices of both contemporary critical theory and hypertext theory, parallel ideals have emerged with the appearance of this new technology. These statements are what I call "technotropes of liberation," and they permeate hypertext theory, its history, and the very theories of narrative and reading practices that ground hypertext theory. For example, Ted Nelson makes the utopian claim that a world-wide, hypertext "docuverse," which is actually equitable and affordable, can somehow exist in a

public sphere without institutions and their accompanying gatekeepers of knowledge and limits on information. As J. Hillis Miller points out, critical theory has itself emerged from the same ideological climate that makes possible electronic literary practices. Despite this recognition of their convergence, however, hypertext and critical theory are rarely compared specifically as current analogs for our utopian desires about experimental texts, readers and reading practices.

As we saw in Chapter One, reception theory provides a method for demonstrating how actual readers are always constrained by cultural conventions and molded by material circumstances. The conventions of American literary culture are embodied in educational institutions and the popular literary establishment, itself dominated by such vehicles of taste as the *New York Times Book Review*.¹ The implied reader, an extrapolation from qualities implied by the text, is not an accurate test of how readers use and understand hypertext. This abstract use of reader, and the easy equation of hypertext with post-structuralist Textuality, both betray in hypertext scholarship a general unwillingness to grapple with the *uses* and the *practices* specific to hypertext and to acknowledge the social constraints on such practices.²

Hypertext nonlinear structure uses textual objects as places and builds a dense web of associative links between those objects. Those links can be familiar relationships such as words with their definitions, the name of a source

with its citation, or with the source text itself, an artifact with a drawing and a map of where it was found, the name of a place with a photograph or video recording of the location. Hypertext has created a flexible new structure for organizing electronic information that allows the web-like linking of texts, information and other media such as video and photographs by a process of association rather than the traditional hierarchical structures of computer programming and design. Hypertext's non-hierarchical structure facilitates and even encourages a non-linear and associative approach to reading texts, where the reader navigates through information by following the links between pieces of the text. After several such readings, the resulting collage of links and "places" visited in the text does resemble the intertextual web of discourses described by theorists like Julia Kristeva and Mikhail Bakhtin. Since every reading results in a different textual structure, the text itself appears unstable, inconclusive; it obscures the author's meaning and intention for the text.

Hypertext computer technology has been widely available for less than ten years, but it has already become a popular method in industry for indexing and presenting massive amounts of information. The largest, and probably the most widely used hypertext applications, to date, are in commercial industries: Boeing is developing a comprehensive hypertext database for mechanics to use on the job, for example, when they need to know the exact placement of a

particular bolt. The development since the middle 1980s of popular commercial hypertext systems for personal computers like Hypercard, Guide, Toolbook and Storyspace, along with independent corporate efforts, has contributed to hypertext's huge impact on business and industry. This form of organizing information is being incorporated into business in every way conceivable—from categorizing routine office files to creating huge corporate databases. Hypertext is the hot new technology in high-tech industry.

Hypertext technology has also enjoyed rising popularity among artists, writers and educators, who use accessible software programs like Hypercard and Storyspace to create different kinds of hypertext books. Electronic books include a diverse and high-quality collection already. For example, the Baniff School of Art and Design created a multimedia biography of pianist Glenn Gould, designed as a museum piece, complete with scanned photographs and visual photographic effects, high-quality digital recordings, and videotaped interviews. The Expanded Books Series, from Voyager Systems, offers electronic versions of existing books designed for research activities like searching and marking the text and typing marginal notes. *The Virtual Museum*, an educational CD published by Apple, simulates three-dimensional space for viewing state-of-the-art scientific visualization videos and for navigating through a science museum to look at objects. Hyperfiction novels written and read on a computer have you follow the links between text

spaces to read a non-linear and open-ended narrative. Other hypertexts have been developed as exhibit books for public use in libraries and museums, where, for example, visitors can view slides of the entire collection in the Museum of Modern Art and, by clicking on objects in the slide image, explore similar elements or themes among works in the collection.

Graphics can be incorporated solely for aesthetic purposes in hypermedia, often with visual effects and speed that give these programs a hi-tech appeal. Graphics also often play a primary role in representing information. Given the potential of hypertext technology to present information and ideas graphically and relationally, educators are enthusiastic about applying it to all kinds of educational practices as well. *The Dickens Web* and the *In Memoriam Web* exemplify educational hypertext books that collect sources on the lives and works of Victorian writers Alfred, Lord Tennyson and Charles Dickens.³ *A History of Western Social Thought*, developed by Bob Jones at the University of Illinois at Urbana-Champaign, includes the texts, biographies and historical background of Western social thinkers from the classical period to the present. In most electronic books, the paths actually taken through the material in a given reading then become literally part of the text; these "places visited" are graphically represented as webs, outlines, bookmarks, and other navigational devices. Because of these efforts, some argue, hypertext could change our fundamental

definitions of books, of artistic experience, and of how we construct knowledge out of information. On the other hand, hypertext has always been represented as "just like the human mind," as in a 1987 promotional brochure for Hypercard software, illustrated in Figures 2a and 2b. The full color brochure reads: "The human mind works by association. So why don't computers?"; it is telling that Hypercard did not even support color graphics at the time. Since its inception, in fact, the idea of hypertext has always been described as a natural extension how we acquire knowledge: by association.

Hypertext Fathers and Dreams for Personal Efficiency

The hypertext tradition begins with a story of technological dreams that solve pragmatic research problems, two generations of inventors, and their hopes for artificial intelligence and improved human productivity. Vannaver Bush was an engineer and vice-president at MIT in the thirties who later served as Director of the Office of Scientific Research and Development for the United States military during World War Two. Bush envisioned a device called the Memex that would augment human memory and function as a mechanical enhancement to human knowledge. Bush's "As We May Think," a famous and influential essay, first appeared both in *The Atlantic Monthly* and in *Life Magazine* in 1945. In this essay, Bush describes the machine he conceptualized in the nineteen-thirties, a machine that would use enhanced versions

of the available technologies to search and obtain information: high-speed microfilm readers, photographic technology, and information retrieval techniques. The Memex was based on the analog computing technology of the time and was never actually built, but Bush's ideas became possible when digital computing was developed in the 1950s, which he realized as he continually revised and republished "As We May Think" for twenty years.

A private work desk with vast amounts of information stored on microfilm, "Memex was defined as a private file and library, emphasizing its personal nature and its scope." While most information retrieval was focused on institutional uses, Bush used Memex to work through "how particular and individual knowledge requirements could be supported" (Nyce and Kahn 57). The very name Memex suggests the image of desktop technology as a prosthetic to human memory. Bush wanted to make available vast amounts of scientific information, miniaturized and stored on microfilm, that would include a combination of historical and classical sources and all current research being published. The Memex would solve a practical problem, by enabling the scientist to keep up with the "growing mountain of research" in a more efficient and mechanical way than any offered at the time:

Our ineptitude in getting at the record is largely caused by the artificiality of systems of indexing. When data of any sort are placed in storage, they are filed alphabetically or numerically, and

information is found (when it is) by tracing it down from subclass to subclass. It can be in only one place, unless duplicates are used; one has to have rules as to which path will locate it, and the rules are cumbersome. Having found one item, moreover, one has to emerge from the system and re-enter on a new path. (Bush 100-101)

This critique of the hierarchical indexing systems of the time implied new ways for organizing information. Multiple paths would associate items, as Bush presumed the mind did, and the Memex would then keep a record of these "trails" of association (101-102). The resulting web of trails would be more useful, more efficient, and more personal than traditional books, because the linked items form a new kind of personalized book, the memory and record of which never disappear. Within this system, moreover, all knowledge could potentially be recorded, tracked and found within a complete economy of information that functioned much better than a conventional library.

The practical metaphors of encyclopedias and libraries dominated Bush's thinking about the Memex, but his ideas were clearly driven by utopian dreams of automating the research process and improving upon the human mind's capability to associate ideas. Bush based his assumptions about "natural" mental processes and "memory by association" on folk psychology. These hopes for efficiency were then driven by idealized visions of what machine intelligence could do for

both the individual researcher and the research community. James Nyce and Paul Kahn demonstrate that Bush's Memex was a part of the "American tradition of technological utopianism" and reflects the technological culture of the 1930's (40). They explain how Bush's essays and letters describing the Memex acknowledge their own prophetic quality that was characteristic of the time period: "To influence the direction of the future, Bush turned to 'frank prophecy,' a speculative, imaginative engineering" (47).⁴ Furthermore, that vision also placed scientists at the top of the cultural elite: "Bush's writings about Memex should be viewed as part of both the utopian impulse to envision a perfect future world and the scientocratic impulse to place the technological, scientific elite atop the cultural and political hierarchy" (46).

This kind of privileged utopian practice is part of an even more complicated set of cultural and economic forces, namely of capitalist ideology and its huge investment in technological discovery. As Andrew Ross demonstrates, technocratic institutions have continually attempted to mystify their relations to capitalist logic in the name of technology:

Earlier proponents of technocracy, in the 1920s and 1930s, challenged capitalism in the name of streamlined efficiency, promising a less wasteful, more rational system of economic and social life. . . . Despite nominal appeals to rationality and

progress, however, the gospel of the profit margin remains a more powerful doctrine than the gospel of efficiency. Capitalist reason, not technical reason, is still the order of the day. (Ross 10)

The kind of cultural elitism that capitalist logic requires was an integral part of Bush's hope for technological innovation and efficiency. His original idea for the Memex appealed to the "gospel of efficiency," while it also embodied the diminished utopian desires attached to technology during the first technological boom in this century. The utopian ideology of the thirties was marked by desires both for progress and pragmatism, which, in Bush's case, prompted a paradoxical solution: an idealized mind machine that offered a practical and personal solution to public problems.

Bush conceived of the Memex as a private and personalized system for augmenting memory and building knowledge, and in that sense, it was a precursor of computer technology as a personal information system, setting the stage for the widespread use of personal computers fifty years later. A personal technology thus offered Bush and his successors the best solution for a more efficient scientific practice and culture. Douglas Engelbart, a pioneer in personal computing in the 1960s, saw Bush's ideas for the Memex as a major influence for his own research on the human-computing interfaces that have made personal computing possible. In his "Letter to Vannevar Bush," Engelbart

describes his research goal as "increasing the individual human's intellectual effectiveness" (235). He explains his plan for computer use in problem-solving as follows:

The possibilities we are pursuing involve an integrated man-machine working relationship, where close, continuous interaction with a computer avails the human of radically changed information-handling and -portrayal skills, and where clever utilization of these skills provides radical changes in the way the human attacks problems. Our aim is to bring significant improvement to the real-life problem-solving effectiveness of individuals. (Nyce and Kahn 237)

With this pragmatic philosophy and focus on human-machine interaction, and riding on the wake of the post-war technological boom, Engelbart became the principle inventor of many modern interactive computing devices such as the mouse and the system of windows popularized by Macintosh computers in the early eighties. He thus extended the idea, first emphasized in Bush's work, of the personalizing and privatizing of computer technology to solve an individual scientist's research problems.

Ted Nelson, a contemporary of Engelbart who began work on another early hypertext system called Xanadu in the sixties, also cites Bush as the predecessor of his ideas. When Nelson wrote "As We Will Think" in the early seventies, personal computer systems were already a reality. He

essentially rewrote Bush's essay to underscore hypertext's potential uses for small scale research efforts and its social effects:

Those contemplating massive retrieval systems commonly presume that they must begin with some massive corpus all accessible. The Library of Congress is often mentioned. Even Bush supposes regretfully (in the revised article, p. 100) that the personal system waits on the large public establishments being automated first.

I do not believe this is so. It will be of practicable and of considerable interest to begin on a small scale, having no grand corpus available. The grand corpus will come soon enough, as requests emerge. . . .

The way to begin is to furnish supported consoles to small communities of users: key members of a 'small' discipline, or specialists among whose work there is close connection. (Nyce and Kahn 259)

In this essay, Nelson describes personal hypertext systems as community-based and collaborative efforts. He extends his ideas later in other writings to consider the wider social impact of hypertext technology.⁵ Unlike Bush, Nelson envisioned hypertext for everyone's use, and unlike Engelbart, he described systems within the context of social institutions, as a publishing system and intellectual

practice, and as a new social understanding of text, a "branching and complex text [that] will become recognized as far more natural than the structures in which we now must write (257).

Nelson also closely resembles Bush's character as a visionary and maverick, but pragmatic inventor. As a self-styled and self-published cultural critic, Nelson functions as a respectable dissenter, but well within the mainstream computer culture. Ross demonstrates how those on the fringe of technological culture, the "hacker counterculture," aren't radically challenging mainstream scientific culture, but rather participating what the structure allows:

"[T]oday's scientific countercultures share many of the methodological norms and claims about absolute truths in nature observed by establishment science. Indeed, some of the maverick, libertarian values espoused by countercultures run parallel with those prized in the entrepreneurial vanguard of corporate research and development. In this respect, the former play an experimental, and, occasionally, morally corrective, role for a dominant science culture that nonetheless deems their activities to be illegitimate and unscientific." (9)

This image of the maverick hacker perfectly describes Nelson, who sees himself as outside and critical of the American corporate and military-industrial structure. Nelson describes such visions in *Literary Machines* using his own

hypertext system, appropriately called Xanadu. He creates business plans independent of the mainstream corporate or military structure. He also outlines the inevitable social and political consequences of computer technology as practiced, as well as consequences for individual users of the hypertext docuverse. He predicts the possible cultural effects of hypertext, such as its users forming intellectual subcultures as they often do in newsgroups or as fans. His ideas reflect the idealism of hypertext discourse generally, but they are still motivated by pragmatic goals of the expanding computer industry. The entrepreneurial spirit of hypertext's inventors and its utopian theoretical underpinnings both remain well within the limits of what industry calls technological progress.

In fact, ever since Bush served as Director of the Office of Scientific Research and Development for the United States military during World War Two, and Engelbart conducted research at Stanford sponsored by the Air Force Office of Scientific Research, computer technology has been closely tied to the industrial-military complex. Paul Edwards demonstrates how "high technology and military power have been profoundly linked" since World War II. The masculine culture surrounding computers lies in "connections between the modes of thought involved in computer science research, the culture of engineering, and the deeply entangled institutions of military service and of masculinity as a political identity in an age of high technology war" (103).

Nyce and Kahn's collection, *From Memex to Hypertext: Vannevar Bush and the Mind's Machine*, outlines a linear heritage of visionary inventors and engineers, establishing the Memex as the technological precursor to hypertext technology. How much of that history, however, reflects the biases of traditionally male-dominated disciplines and male-defined definitions of history and of technological progress? Such historical efforts can reflect a patrilinear and classist model in rewriting the history of technology to establish its progenitors. Feminist critiques of science make clear how ideology and history are mutually reinforcing, with the result of both masculinizing science and excluding the input of women historically:

A circular process of mutual reinforcement is established in which what is called scientific receives extra validation from the cultural preference for what is called masculine, and, conversely, what is called feminine—be it a branch of knowledge, a way of thinking, or woman herself—becomes further devalued by its exclusion from the special social and intellectual value placed on science and the model science provides for all intellectual endeavors. This circularity not only operates on the level of ideology but is assisted by the ways in which the developmental processes, both for science and for the child, internalize ideological influences. . . . I mean to emphasize

the existence of alternative possibilities. The disengagement of our thinking about science from our notions of what is masculine could lead to a freeing of both from some of the rigidities to which they have been bound." (Fox Keller 92)

Evelyn Fox Keller uncovers the circular processes that reinforce male-dominated scientific ideas and devalue or erase other ways of knowing. In the historical context of hypertext's invention, the pragmatics of efficiency, the mechanized map of the human mind, and the simple elitism of male-dominated scientific culture were all dominant ideologies of the time, ideologies that then reinforced the romanticized image of hypertext as a prosthetic to natural intelligence.

The dominance of males in science and technology has persisted, as Edwards points out: "both computer science and military service are at present culturally coded as both male and 'hard', although "there is nothing inherently masculine about computer technology" (124-125). To sum up this critique of the history of hypertext: while technological history is almost seductively useful, we cannot ignore the gendered nature of these histories as we have received them; we also cannot forget computer technology's link to the workings of industrial capitalism in this country. We must always question the mystification of capitalist logic that goes on when inventors and scholars extol the virtues of hypertext to liberate workers into efficiency.

Hypertext as the Embodiment of Literary Theory

As part of a growing trend to incorporate computers into the humanities, hypertext developers are often scholars and teachers who design pedagogical applications as part of the university humanities curriculum. In particular, disciplines that teach scholarly research can benefit from large information bases of texts, pictures and video about the subject. Several well-known hypertext applications have been developed for research in the humanities. *Perseus*, developed at Harvard for the study of classical literature and culture, incorporates hundreds of sources, including photographs and video, on literature, art, architecture and history. *Context 32*, which includes texts, political and social history, and critical commentary for Victorian Literature courses at Brown University, has since been published by Eastgate as *The Dickens Web* and *The In Memorium Web*. Teachers created these programs, often in collaboration with programmers and software designers, for specific university courses. The materials, which can be enormous databases of texts, are almost always used as supplements that compliment printed course materials, lectures and assignments.⁶ Brown's courses, for example, have the students navigate through the materials on the Intermedia system to gather political or social context for their essays. Then students often add their completed notes and comments into the overall database of texts and create new links in the material (Landow "Context 32").

With the availability of fairly inexpensive and easy-to-use hypertext authoring programs and editors for digital video, combined with educational equipment grants and other kinds of academic support, educators can develop small, focused hypermedia projects for courses in any discipline. Developers of humanities-oriented educational hypertexts from many fields can now design computer classroom tools and other courseware for their particular content areas. Commercial hypertext systems are simple enough to use so that educators can develop applications themselves for specific classes or assignments. Despite all this activity, however, computers are still not typically considered the domain of English departments, and few persons in literary studies have used hypertext systems. Those literary scholars who are excited about hypertext often find themselves on the fringes of the academy (English professors, for example, rarely get tenure credit for software development). Many hypertext critics are themselves developers of educational hypertexts or writers of hypertext fictions. As teachers and writers, they embrace the technology in practice, creating class notes and novels with hypertext writing programs and teaching hypertext writing to their students.

Hypertext writing has recently attracted more attention in literary studies because of several books that trace hypertext's direct connections to contemporary literary theory. George Landow's *Hypertext: The Convergence of Contemporary Critical Theory and Technology*, is the most

extended discussion of the relationship between hypertext and literary studies to date and the best overview of the issues surrounding the academic uses of hypertext. He discusses hypertext technology's impact on many theoretical concepts of reading, of texts, of narrative and of authorship. Landow argues that hypertext brings together, in material form, post-structuralist theory and technology, and describes this "convergence" in glowing terms. Landow generally sees the new technology as an exciting and potentially liberating intervention into literary education, critical theory and academic politics. He claims that an object—a hypertext system—can embody a deconstructive theory of rhetoric and of textuality. There are problems with the idea of convergence, however: it presents theoretical practice with no real sense of its history, origins, or current debates, and thus blurs the distinctions and tensions between post-structuralist theories. For example, Landow's fundamental claims for hypertext as a postmodern medium are that

the basic experience of text, information, and control, which moves the boundary of power away from the author in the direction of the reader, models such a postmodern, anti hierarchical medium of information, text, philosophy, and society.

(Hypertext 70)

This description of hypertext as postmodern has some fundamental problems. First, it tells us little about theory's actual relationship to technology. How exactly does

the reader gain power in this experience of text, and what is gained by it? What is so especially postmodern about hypertext as compared to other media? The underlying concept of a technology that literally embodies some larger theoretical process is actually antithetical to deconstructive theories themselves, because it assumes that language can be "matched" to some physical object.⁷

Landow thus participates in the widespread enthusiasm about hypertext technology as liberating and revolutionary for education. Hypertext is "fulfilling the democratizing potential of the new information technology" and, implicitly, this potential, along with the liberation of the reader, is the thrust of what he calls its "politics" (32). This assumption that hypertext technology is somehow inherently democratizing permeates the literature about hypertext, beginning with Bush and Nelson. Nelson claims in *Literary Machines* that a hypertext electronic publishing system will create a "libertarian literature" (1/4). Agreeing with these theoretical claims for hypertext, Ted Jennings asserts,

I will insist that confusing the concept **hypertext** with whoever delivers and installs a particular version is like confusing the generic technology of the book with the sellers of paper and printing presses; hypertext is a generic technology, not a product. (42)

The analogous example of "generic" book technology, which assumes that "book" means something outside of its specific

instances, its history and means of production, and its reception by readers, leaves one nothing on which to fix a discussion. Furthermore, the structure and design of the product effects and helps define how the technology is used and understood. One reviewer of Landow mentions that the issue of *whether* "hypertext is politically neutral" is a way to distinguish between theories of hypertext (Aycock 6-7). Hypertext technology, hardly a "generic technology" in the eyes of enthusiasts, can only be described and evaluated within the context of its social and institutional uses.⁸

Despite the questions it raises, Landow's book, published by MIT Press, has been well-received: Jennings gives the book a glowing review in *Postmodern Culture* for its scope and provocative approach to hypertext theory. Landow's study is indeed remarkable for addressing, for the first time, all of the theoretical touchstones of interest to literary critics who are also interested in hypertext—literary theory, authorship, reader response, literary studies, and politics. A pioneer, both as a developer of the early hypertext system Intermedia, and as a published critic of hypertext/hypermedia and Victorian literature, Landow is in a powerful position to define the field, and he will no doubt continue to have a wide influence in academia.⁹ His ideas have already stimulated theoretical inquiry that will be fruitful for literary and writing studies. His final chapters on literary education and on the politics of hypertext are only a beginning point for inquiries into

education and politics, however.¹⁰ We need more discussion of hypertext's relation to canon revision, reception theory, feminist studies, and pedagogy in the literary classroom.

Reader-Centered Theory as Revolution

The idea of reading as revolutionary is not new with hypertext, but is a pattern of contemporary critical theory itself. Many theorists see their projects as revolutionary and liberatory when they focus on the reader and this common theme arises and underscores the parallels between all reader-centered theories. This technotrope of liberation, in fact, partly describes the parallel "revolutionary" appeal of both post-structuralist articulations and reader-response articulations, and, at the same time, it reveals the limitations of certain post-structuralisms when theorists express a desire to revolutionize theories of reading. Because such language is now being repeated in the new rhetorics of hypertext, we see the cultural work of a "new" theory in action—which refreshes our utopian visions—and how these cycles repeat themselves.

The formalist distinction between story and discourse, and its subsequent use both as a narrative principle and as a theory of perception, is an essential backdrop to any narratology that accounts for readers as well as texts. When emphasizing discourse rather than the story as the site for narrative meaning, post-structuralist narrative analysis winds up emphasizing readers rather than texts. The shift to reader- and reading-centered theories of narrative analysis

can be traced through the disappearance of "story" altogether in structuralist theory.¹¹ As the story/discourse binary breaks down, a reader-centered emphasis moves in to fill the gap left in narrative analysis by the story/discourse binary. When one focuses on the theories of intertextuality and writerly texts so important for hypertext theorists, one sees that post-structuralist reader-centered theory, like hypertext theory, leads to idealistic claims about the liberation of the reader.

Acknowledging that the romanticizing of individual authorship arises out of early modern thought and capitalist cultures, Barthes reclaims reading as "performance" and the ultimate horizon of interpretation—"the mastery of the narrative code" by a mediator or interpreter (*Image, Music, Text* 148). He also undercuts the practice of treating literature as sacred text:

[L]iterature (it would be better from now on to say *writing*), by refusing to assign a 'secret', an ultimate meaning, to the text (and to the world as text), liberates what may be called an anti-theological activity, an activity that is truly revolutionary since to refuse to fix meaning is, in the end, to refuse God and his hypostases—reason, science, law. (147)

The language in this passage emphasizes the liberating quality of a revolutionary activity—reading as the ultimate interpretive horizon. Continuing this trope of revolution,

Roland Barthes claims we must "overthrow the myth" of autonomous authorship, and the practice of assigning fixed, ultimate meanings to texts. We must liberate the proletariat reader that "good society. . . sets aside, ignores, smothers, or destroys." Barthes concludes this particular piece with a now-famous statement: "the birth of the reader must be at the cost of the death of the Author" (*Image, Music, Text* 148). Killing the author does free the reader to interpret, and escapes the constraints of traditional literary criticism; however, the language of liberation in these sentences imagines powerful readers who will rise collectively and revolutionize reading practices. Barthes' post-structuralist project, his recognition of cultural codes and multiple voices in texts, still idealizes an abstract, disembodied reader who is really just an extension of the text. He marks the exact moment where a theory of readers in cultural context must begin.

Barthes' increasingly explicit emphasis on readers in his later work continues this liberatory theme. For example, in *S/Z*, the segmenting of the text of *Sarrasine* into cultural codes is not inherent or predetermined, but occurs arbitrarily from an historical perspective. The text is always read in a certain way at a particular point in time, and any sustained historical arbitrariness is a function of readers and critical practices during a certain period, in this case the post-structuralist boom of the nineteen seventies. The codes of various discourses cannot simply be

textual, nor idiosyncratic, but rather (to pick up Jauss' terms again) a culturally-defined horizon for receiving this text. Barthes makes it clear that *S/Z* is a theory of textual production that features the reader's role in creating texts and the arbitrary and unstable quality of meaning itself. His polemical arguments, however, have the political and liberatory thrust of all theories: the act of freeing the reader for radical interpretation is presented as a liberating, even revolutionary and anarchistic act.

Other post-structuralist theorists try to liberate the reader from oppressive cultural discourses. For example, M. M. Bakhtin positions carnival discourse, anti-theological and popular, against authoritative monologic discourse; Julia Kristeva positions the fluid, dialogical semiotic code against the symbolic code of authority and power. These theorists all valorize marginalized discourses and practices, and this describes the political aims of post-structuralism in general. I would suggest, then, that by defining the story/discourse binary as a narrative principle that points to the reader as much as to the text, by tracing its use historically, and by noting where the binary breaks down, post-structuralist analysis, in the end, is a description of reading processes that claims textual liberation for readers. [So seventies!] This technotrope points to a fundamental flaw in post-structuralist criticism and to why we need reception theory and ethnographies of hypertext.

Theories of narrative and technology still overlook how the history of narratology and its debates can illuminate critical assumptions about hypertextual form. This history reveals how narratology has, over time, developed the goal of empowering the reader. The relation between texts and readers within a wider reception context brings us full circle back to the fundamental question in assessing any textual theory—that of form and its function in culture. The status of the text remains a tension in all critical theories, and we necessarily return to questions of form and its status. For example, early formal theorists like Bakhtin and Mukarovsky, writing from a 1930s-1940s Marxist perspective, valorized the liberatory quality of social realism, particularly as embodied in the novel. Bakhtin, in particular, sees the form of the novel, and the dialogic word as embodied in the novel, as the most liberatory and populist of forms (*The Dialogic Imagination*). Barthes in turn rejects the valorization of social realism, and instead lays bare the conventions of realistic conventions, which in practice, however, are again embodied in textual forms. Even Jauss describes reading much like the Russian Formalists, as potentially impacting society, but with the difference of more explicitly linking artistic perception back to lived experience (41). The question of what constitutes political in such liberation becomes crucial. Can a literary device of perception (in Jauss' example, free indirect discourse) that forces that reader to make the ultimate moral judgment about

a character or its author really instigate social change? We can see the potential of reader-centered theory, but it is limited to perceptions and does not extend to material circumstances. In the end, we must both affirm the importance of library revolutions and theoretical movements, and continue to question what constitutes "the political" in these theories of texts, of readers, and of literary history. Hypertext theory and reception theory still have a lot to learn from one another. Given more diverse theoretical approaches and understanding of readers and texts, coupled with more emphasis on these and other socio-historical approaches that locate power relations within technological process, we will better understand the phenomenon of hypertext and its growing popularity. As Mark Poster puts it, we will see more comprehensively how, within the current electronic mode of information, "what is at stake are new language formations that alter significantly the network of social relations, that restructure those relations and the subjects they constitute" (8). The parallels between hypertext and certain post-structuralist theories—the liberatory claims, the utopian images, and the representations of postmodernism—can dramatize the actual relations between theory and technology at this historical moment.

The Case For Feminist Critique

Theorists and teachers alike need to recover the differences of theory as a practice, perhaps seeing hypertext

theory as one kind of postmodern practice. Feminists in particular need to wrestle hypertext from its "fathers" and the male-oriented representation of postmodernism, to look closely at how women interact with new technologies, and to expand the descriptions of hypertext practices to include gendered differences as a primary category of analysis.¹² The feminist critic Dale Spender recently described Landow and Delany's 1991 collection *Hypermedia and Literary Studies* as "a masculinist study of hypertext and its relationship to literary theory." I believe this is a fair characterization of that particular text from a feminist perspective, given that this collection describes hypertext applications on authors such as Shakespeare and Fielding, cites texts from classical literature, emblem books, and the bible, but includes no feminist critical approaches. Furthermore, women writers are rarely included in the new electronic hypermedia or hardly even mentioned in comparison with electronic texts. This seems a glaring absence, both for "literary studies" as a discipline and for hypermedia applications. And finally, the division of labor in this text is quite uneven: this book includes only three authors/developers who are women, as opposed to seventeen men. As a broader critique, Spender argues that, as with the early print books, women are once again in danger of being left out of our culture's newest technological literacy. She offers electronic publishing as a potential means for bypassing the gatekeepers of traditional publishing and argues that literary critics need

to become computer critics as well. The vision of "interconnectivity" and ecological model for knowledge suggested by electronic networking, and by hypertext, can facilitate a social construction of knowledge that is specifically feminist, and can potentially empower or enfranchise those students traditionally marginalized in our educational institutions (Sainsbury). This feminist critique assumes that technology, despite oppressive uses, can definitely have feminist potential. If women do risk being left behind, both in technical competence and in growing forms of literacy and culture like electronic publishing, then it is crucial that feminist criticism be applied to, and incorporated into, computer classrooms and hypertext applications.

Feminist critique makes clear how hypertext development has been a male-dominated practice, and the literary approaches and theorists invoked have been traditional ones. Even with the handful of feminists working in hypertext technology (Spender, Kaplan, Sainsbury, Smith, Moulthrop, Guyer and other Voices, including myself), the typical hypertext developer or critic is still a white male interested in experimental writing and postmodern culture. The *kind* of postmodernism these critics embrace, however, has been critiqued in other fields as apolitical and not centrally concerned with issues of power.¹³ In the entrepreneurial spirit of hypertext's inventors, hypertext critics often embrace sweeping futuristic visions rather than

addressing specific forms of power defined by multiple social identities and discourse communities. It is no accident that the best-known literary hypertexts have Dickens and Shakespeare as their centerpiece rather than Elizabeth Barrett Browning or Christina Rossetti. The same traditional canon of texts and the same unequal practices that mark the history of literary studies are in this sense now being reproduced in the electronic media.

Hypertext scholarship often does not take into account the specific use of a hypertext within a particular social setting, whether educational, industrial, or public. Despite the articles that do consider the politics of hypertext, much hypertext scholarship still offers abstract, unfounded claims about its revolutionary effect on readers and writers.¹⁴ These works employ visionary assumptions while ignoring larger cultural issues of power and discussion of class and gender in technology use or in literary education. Feminist scholars are now finding that the same sorts of gender inequalities and social markers occur in these virtual communication environments as in traditional communication exchanges.¹⁵ Hypertext scholarship often aligns hypertext technology with current theoretical concepts from post-structuralism and deconstruction, but seems virtually unaware of materialist criticism of technology (in the radical science tradition) or of the feminist critiques of science and technology over the last twenty years.¹⁶ Feminist theorists of technology, for example, recognize that gender

relations determine, and are affected by, how technologies are developed, used, represented and valued, and that technological developments are always embedded in historical, social and cultural processes. Feminists critique scientific discourses and practices for reproducing the same unequal power relations in traditional educational and corporate institutions, thus reinforcing institutional structures rather than challenging or overturning them.¹⁷ Work in hypertext and hypermedia, if it is to keep pace with literary studies and progressive changes in education, needs to include specifically feminist content and to critique existing hypertext structures from various theoretical positions.

The Case for Economic Critique

Many of the educational tools that use the newest hypertext technology have enshrined a traditional pedagogy, and discussions of those tools seemingly ignore the ideology within educational practices. This absence parallels the early eighties when personal computers were first introduced into education and the pioneering educators were naively enthusiastic about the computer revolutionizing education, without criticizing its use for a drill-and-practice style of learning. Subsequent studies point out how teachers must be critics of their practices: "[W]hatever uses the computer will be put to in the writing classroom, the effectiveness of such uses will depend more on a controlling pedagogy and its theoretical base than on the technical capabilities of the

machines themselves" (Barker and Kemp 26). Hawisher and Selfe identify the visionary assumptions when teachers describe "'the effects of technology' in overly positive terms as if computers were good in and of themselves," and that scholars often "fail to reconcile the differences between a visionary image of technology—what we want computers to do—and our own firsthand observations of how computers are being used in many classrooms around the country" ("Rhetoric of Technology" 56-57). Scholars interested in the revolutionary potential of educational technologies often invoke critical pedagogy as the underpinning for what they believe computers can do in the classroom. In this view, the teacher's goal is to upset traditional, lecture-style classroom practice and to change the power relations between teachers and students.¹⁸ However, some critical pedagogies only discuss the student as a dim and abstract concept, and hypertext critical pedagogies too easily assume that they are student-centered.¹⁹ Critical pedagogy, being based on a form of socialist criticism, also invokes the ideal of liberation. Ironically, then, theories that purport to liberate students often erase those they want to liberate. Hypertext pedagogy needs to be much more carefully evaluated as it becomes the popular educational technology of the nineties.

Outside the American university or corporation, computer access depends even more exclusively on capital, on having the money to invest in expensive equipment, the electronic

access to public networks, and the technical training necessary to operate in electronic environments. The *New York Times* reports that fewer than 20 million persons worldwide use computer networks: "3.3 million people use commercial services, about 4 million use the Usenet system, which links research institutions and universities around the world, and about 11 million people use public-access bulletin boards, with some overlap among the three types" (Grimes 14). These numbers are growing rapidly, but they are still almost exclusively limited to "First World" countries. Until freenets become commonplace, or until the Internet becomes commercialized, free network access requires that one either be part of a large company, university, or the military. Not many people can afford a private account like Prodigy, CompuServe and America Online, where you pay for each service.²⁰ Technical training and computer education is itself unevenly distributed. Cultural differences dictate access in our educational system in general, but especially among the levels of computer literacy for women and minorities. Those disadvantaged by our economic and our political systems simply do not yet have equal access to computer technology or technical training. Thus, despite the promises of technology, its use depends on who has cultural capital within existing systems of education. Furthermore, the people holding technocratic power also control vast amounts of information—from the FBI to commercial public databases (megabureaus) that buy and sell personal

information about millions of Americans. Thus, information technology marks not only a change in communications practice or increased efficiency, but a primary source of cultural capital and exchange. Despite these complex social, political, and institutional concerns, hypertext theory still emphasizes the free reader confronting a world of open texts.

Conclusion

New questions need to be asked about hypertext's role in education and research, and new theoretical and empirical approaches need to establish the value of hypertext in the humanities-oriented curricula. Is hypertext, as technical innovation, as literary experiment, and as social practice, radically changing our relationship to texts? How does an electronic structure change our notions of narrative texts as one kind of computer writing practice? How does it change our theories and methods of reading and of writing? If hypertext subcultures are already forming, as Nelson predicted, what is their role within the larger electronic culture, literary culture, or academic culture? What electronic literary canons are being established within hypertext electronic publishing systems, and how do they parallel or redefine other traditional notions of literary canons? Finally, what classroom pedagogies are currently being supported by hypertext technology? Are they truly revolutionary, or do they simply re-establish the same kind of power relations found in many traditional literary and writing classrooms?

The subsequent chapters set such questions against specific instances of hypertext computer design, writing and communication. By analyzing the practices of hypertext technology, I identify the kinds of ideals that emerge with the appearance of a new technology, how the new technology embodies certain cultural and literary values and becomes a site for political desire. The tropes of liberation, evidence of those desires, not only permeate hypertext theory, they also permeate the reading and writing practices of those most invested in hypertext as a writing technology. We need to expand this inquiry to include real readers and their interpretive communities. A reader-centered approach can flesh out a more specific and focused discussion of hypertext fiction's relation to literary theory. We need to recognize how all of these theoretical inquiries, over time, have participated in the same idealism in which hypertext theory is currently engaged.

Indeed, the rhetorics of hypertext and the rhetorics of theory both have a place in the English classroom, as Berlin, Faigley, Phelps and other composition theorists have demonstrated. These theories themselves provide a discourse for talking about literature and writing practices together, as common cultural practices in the electronic medium; they offer multiple ways for thinking about the meaning of particular electronic texts; and they provide a means for analyzing both the promises and the limitations of hypertext technology.

Notes

¹See Ohmann on the role of the *New York Times Book Review* in canon formation.

²More social and political critiques are just beginning to emerge in the literary press. For example, Bennahum's "Fly Me to the Moo," published recently in *Lingua Franca*, praises the sociological research in MOO spaces but is critical of much of the creative writing.

³Several Shakspeare electronic books have already appeared, but currently an ambitious multimedia project is under development at the University of Illinois. Among other features, this program presents film clips in a video window which are synchronized with a highlighted copy of the print text of a play.

⁴Nyce and Kahn point out that Bush's writings participated in a popular utopian tradition described in Segal's study of technological literary utopians of the early twentieth century. According to Segal, these works perform an ideological function in that they critique society by being "both practical and detached" and by becoming an "alternative or rival ideology . . . it at once reflects and seeks to improve the society that gave it birth" (Segal 158). They also discuss Bush's own technological utopian critique of society, "The Inscrutable Thirties," which is reprinted in *From Memex to Hypertext*.

⁵See *Literary Machines*, 1987.

⁶See Landow, "Context 32" and Robert A. Jones, for pedagogical goals and classroom use of these programs.

⁷ This last point about the premises of deconstruction was suggested to me by Stacy Alaimo.

⁸Aycock makes a similar critique in "Post-Literacy": "one could wish for a more reflexive attention to the roles that the authors themselves enact in witnessing the procreative agonisms of hypertext: are they part of the solution, or part of the problem?" He argues that technoculture in general is part of the "symbolic capital" that engages in the domination of textual production (11-12). Kaplan extensively discusses how technology is embedded in ideology and offers this critique: "Many have been swift to identify ideological shifts promised by the intrinsic properties of these new tools, highlighting a panoply of revolutionary outcomes in the wake of digitizing the word" (16). See also Schwartz's "Review" of *Hypermedia and Literary Studies*, where she refers to hypermedia's "cheeky ideal" of democracy that reminds her of "anti-hierarchical Luke

Skywalker invading the super-ship of the Empire. No barriers" (211). See also Moulthrop's "Politics" on hypertext's relation to institutional politics.

⁹He also has edited the only existing collection on literary studies and hypermedia. *Hypermedia and Literary Studies* covers hypertext applications on authors such as Shakespeare and Fielding, texts from classical literature, emblem books, and the bible.

¹⁰Strangely, Landow acts as if hypertext simply will expand the canon and make canon studies obsolete, and he complains about a "Marxist resistance" to the history of technology, even though a history of critique exists both in social history and in recent cultural studies. For technophilic Marxists, see, for example, Ross, *Strange Weather*, and Haraway, *Simians, Cyborgs and Women*.

¹¹In, for example, Barthes, *Image* and Culler.

¹²Allucquere Rosanne Stone gives an excellent feminist critique of the general concept of cyberspace, and how it obscures its own physical and political limitations: "much of the work of cyberspace researchers, reinforced and perhaps created by the soaring imagery of William Gibson's novels, assumes that the human body is 'meat' - obsolete, as soon as consciousness itself can be uploaded into the network. The discourse of visionary virtual world builders is rife with images of imaginable bodies, freed from the constraints that flesh imposes. Cyberspace developers foresee a time when they will be able to forget about the body. But it is important to remember that virtual community originates in, and must return to, the physical. . . . Even in the age of the technosocial subject, life is lived through bodies" (113).

¹³See, for example, Hutchins, *The Poetics of Postmodernism* and Weedon, *Feminist Practice and Poststructuralist Theory*.

¹⁴See, for example, Lanham's "Electronic Word," Havholm and Stewart, Barker and Kemp, and Landow and Delany. For recent articles that do consider the political implications of hypertext theory and pedagogy, see Stuart Moulthrop, "The Politics of Hypertext," Stuart Moulthrop and Nancy Kaplan, "Something to Imagine," Nancy Kaplan, "Ideology," Catherine B. Smith, "Reconceiving Hypertext," Alan Aycock, "Post-Literacy," and Chapter 6 in Landow's *Hypertext*, "The Politics of Hypertext."

¹⁵See, for example, Selfe and Meyer on gender in Megabyte University, a large electronic discussion group (580

participants) for writing teachers. See also Kramarae and Taylor on patterns of conversation within the soc.fem newsgroup (newsgroups can have a much larger number of participants--sometimes in the thousands).

¹⁶For a thorough social critique of information technology that addresses both the history of technology and several deconstructive and postmodernist theories, see Mark Poster's study of technology and communication, *The Mode of Information*. Poster outlines the value of applying poststructuralist positions to highlight "the linguistic mechanism instantiated" in various forms of electronic communication: "The poststructuralist position illuminates the decentering effects of the electronically mediated communication on the subject and, reciprocally, the electronically mediated communication subverts the authority effects of the poststructuralist position by imposing the social context as a decentering ground for theory" (18). The main difference between Poster's methodology and Landow's is an emphasis on electronic environments as *social* processes within an emergent "mode of information," a method derived directly from Marxist critique. Technoculture studies also emphasize a materialist approach to popular subcultures; see *Technoculture*, edited by Ross and Penley, and *Strange Weather*, by Ross.

¹⁷For examples of feminist critiques of science and technology, see Evelyn Fox Keller, *Reflections on Gender and Science*, Sandra Harding, *The Science Question in Feminism*, Cheris Kramarae, Ed., *Technology and Women's Voices: Keeping in Touch*, Donna J. Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature*. and Judy Wajcman, *Feminism Confronts Technology*. For an excellent overview of feminist approaches to computer technology specifically, see Ruth Perry and Lisa Greber, "Women and Computers: An Introduction."

¹⁸See, especially Cooper and Selfe, Selfe "Electronic Conferences," Hawisher and Selfe, "Voices," and Barker and Kemp.

¹⁹For example, Landow's "Changing Texts" appears in *Reorientations*, a collection of essays on critical pedagogy.

²⁰Recent statistics published in the *New York Times* (December 1, 1992) give the following prices for private service: "PRODIGY: \$49.95 starter kit includes software, one month's service and identification numbers for six people; \$14.95 a month, unlimited use of bulletin boards and 30 pieces of Email a month at no extra charge, 25 cents each thereafter; COMPUSERVE: \$49.95 starter kit (\$39.95 if bought from CompuServe) and \$7.95 a month for unlimited access to 30 basic services, with 60 E-mail messages a month at no extra

charge, 15 cents thereafter. Access to bulletin boards costs 21 cents a minute or \$12.60 an hour." (Grimes C14). Freenets are free, public-access networks, begun by community-based organizations and funded by the local community. Many freenets are still in the startup or planning stage, however, and are not widely available.

Chapter Three

Worlds of Information and Writing Spaces: Knowledge and the Electronic Book

As one moves through a hypertext, making one's choices, one has the sensation that just below the surface of the text there is an almost inexhaustible reservoir of half-hidden story material waiting to be explored. That is not unlike the feeling one has in dreams that there are vast peripheral seas of imagery into which the dream sometimes slips, sometimes returning to the center, sometimes moving through parallel stories at the same time." (Robert Coover, "Novels for the Computer")

Nearly everything has to be fitted into oppressive and inane hierarchical structure and coded into other people's conceptual frameworks, often seeming rigid and highly inappropriate to the user's own concerns. The files in which we must keep things on conventional computer systems are detached from their relationships and history. (Ted Nelson, *Literary Machines*)

The electronic writing Tablet is an attempt to break down the limits of the conventional book-to

put the whole world of writing into one book.

(David Jay Bolter, *Writing Space*)

Whose stories, whose dreams, whose book? Hypertext structure depends upon the relational links between text places, giving it an associative quality analogous to dreams. The dreamy quality of reading hyperfiction in Coover's description depends heavily, however, upon an idealized image of cyberspace, what he calls "volumeless imagination." Imagination is used here as an analog to the human mind and its capacities, just as we saw in Chapter One with Bush's Memex. These assumptions about "imagination," "dreams" and mind are hallmarks of the romantic view of literature many critics take for granted when talking about hypertext. Here, the dreaming mind can recapture some of what it already knows about reading texts, but with the added and highly-romanticized features of newness, of limitless imagination, of stories waiting to be discovered Coover's words of plenty suggest endless stories that can never exhaust themselves. We will see later just how much hyperfictions have in common with Coover's own dreams for literature as a limitless, Borgesian branching narrative, or labyrinth, an image that his cover story in the *New York Times Book Review* underscores graphically (see Figure 3).

This idea of hypertext's inexhaustibility suggests a free hypertext consumer, with plenty of capital, a consumer who is free to choose among an endless abundance of available

stories. Coover's comparison to dreams further mystifies and builds on the idea of the Memex as available to all who simply can dream, who have imagination to follow paths to hidden seas and parallel story lines. In such descriptions, hypertext itself claims value as a limitless medium, and yet, paradoxically, a *tabula rasa*, somehow free of human values.

Ted Jennings, for example, writes that

to the extent that information and power (and authority) overlap, hypertext's ecology of abundance can be regarded as spreading all of them around, rather than either reducing or increasing any of them. To that extent, at least, hypertext technology resembles network technology: sharing, abundance, even the dreaded 'overload' are its hallmarks, rather than the sort of de-centering that implies reduction or diminishment" (36)

Jennings assumes that hypertext participates in an "ecology of abundance" that is fair and equitable in its distribution of power and information, just as networks are presumably fair and democratic in their sharing. These generalizations about hypertext ignore a social constructionist view of technology, however, while romanticizing their effects on users. A social constructionist view asserts that cultural ideologies and practices control technological processes, and are also greatly affected by the workings of monopoly capitalism (see Ohmann, *Politics*). In order to understand hypertext's real promise, we must look at specific practices:

the specific programs and their users. Only in the intersections between texts, genres, readers, technologies, and social practices can we make a provisional description of what hypertext really means to certain readers.

The electronic book form and structure itself, as compared to the conventional book, implies an infinite capacity to "hold" text that undoes the physical limitations of print. This idea looks back to Bush's dream for the Memex as a fluid, immediately available and completely personalized library. Computer text, limited only by storage capacity and the parameters of the scrolling screen, gives the impression of infinity. The window to this text, the computer program's "book" metaphor, uses a unifying illusion and often familiar representation of reading such as the desktop, bookshelf or printed page, to control, organize and make available that stored information. The most common types of electronic books, by adopting the familiar metaphoric design of printed text, strive to look as much like a physical book as possible, but still offer the enhanced features of reading on a computer, supposedly limited only by the reader's imagination.¹ Stuart Moulthrop argues persuasively about the problems inherent in these metaphors and "rhetorics" of the electronic book: "Hypertexts are not really 'electronic books,' they are forms of communication that diverge significantly from writing as we have known it. For rhetoric to make further contributions to the development of hypertext, it must move into a new phase of inquiry, turning

from integration to innovation" ("Beyond the Electronic Book" 293). Because they are so tied to print conventions and metaphors, electronic books really limit the possibilities of hypertext writing. Furthermore, they mistake the book for the entire library, and they obscure both the selection process of information and the program's control over a reader's choices. Not all hypertext books are equal, however. Most electronic books fit the description of an "exploratory hypertext," as Michael Joyce describes it, because they do not foreground the linking activity by the reader and don't allow the construction of knowledge, but rather an exploration of knowledge. Joyce advocates making the construction and navigating of the hypertext a primary part of the learning process, and not just an afterthought.

Electronic books also rely on the equally romanticized analogy between the human mind's associative processes and hypertext. This analogy depends on a kind of "folk psychology," in that little is known about how readers construct meaning from knowledge or from texts, much less about the relationship between information and knowledge in general (Colomb 422). The associative processes so valued in hypertext are, I would argue, constructed rather than natural models for the human mind and for how it creates knowledge out of information and textual meaning out of knowledge. These formulations of cognitive processes don't necessarily precede the technology: the cognitive theories and the technologies for intelligent machines and for information

structures have a dialogical relationship rather than a causal one. A naturalized theory of knowledge and its relation to the mind is essential for a software design metaphor to work, however. By analyzing the software programs themselves and their metaphors for knowledge, we can discover the assumptions about how people presumably learn with these programs. Unlimited access to knowledge is the underlying assumption of all electronic books, but their designs mystify the selected, limited and socially-constructed nature of that knowledge. The design of the electronic book makes it clear, however, that having information gives one the power of cultural capital, of literacy, and especially of computer literacy in a highly technological communication environment.

This chapter uncovers how hypertext books give the impression of providing inexhaustible knowledge. The software I analyze demonstrates that many electronic books are specifically designed to give this impression and to mystify their own limitations and relationship to cultural process of selection, power and control. The technologies used to design these electronic fictions are never simply generic. Meaning that is political and aesthetic as well as ideological is embedded in the structure and choices implicit in these software programs. Even the business-oriented icons and interface designs of computer "folders" on "desktops" that we take for granted have an implicit semiotics, giving class-based messages about "middle- and upper-class

professionals who speak Standard English and use the computer in support of white-collar tasks" (Selfe and Selfe 14). Social and aesthetic meanings are also embedded in the design and approach to textuality in hypertext books. Thus, hypertext can never just be a generic technology, as Jennings claims, because it is by definition a product or package that is embedded in human relationships, history, and economic conditions, and the form of the technology exerts control over the messages it contains. When Ted Nelson himself first imagined hypertext, he wanted to get outside of the hierarchical structures of computer systems, the only kind available at the time; he recognized the inevitable social and political consequences of computer technology as *practiced*. I would suggest that the practices, forms and designs of specific instances are the only way to talk about a technology like hypertext.

The desire for an inexhaustible text is not new or exclusively postmodern. Bolter explains: "the metaphor of the world-book is not new to the computer age. Throughout the history of writing, the book has served as a metaphor for nature as a whole and for the human mind in particular" (104). Even nonlinear hypertext books are indebted to the conventional narrative text and to other paper-based forms.² The technologies currently used for electronic books are best described as intermixed, hybrids of print forms like pages and standard typography, and electronic forms like full text indexes of every word in a document. Most electronic books

are presented as just like "real" books, but better. In some cases, like Voyageur System's series of Expanded Books, they are simply on-line versions of existing print texts that offer enhanced searching, indexing and annotation features only possible in an electronic medium. In Rivertext's version of the Medieval classic *Imitatio Christi*, part of the humorously titled "If Monks Had Macs" series, electronic books simply build upon the idea of a heavily-glossed scholarly edition. As Bolter suggests, electronic books put the *World Book Encyclopedia* into electronic form. The huge number of popular CD ROMs now published and marketed demonstrates just how commercial the compact storage and electronic texts have become. But academics and scholarly publishers of electronic books can actually enhance research by providing tools for textual analysis and by integrating multimedia attached to large bibliographic and media resources for students and scholars in the humanities.

Electronic books are still indebted they are to print and other media conventions. Almost all published hyperfictions and electronic books are written and designed with hypertext writing programs Hypercard and Storyspace, and consequently take on the look and feel of the paper equivalent that underlies the metaphor for each environment—a stack of cards in Hypercard, a storyboard in Storyspace.³ Hyperfictions written in Storyspace tend to depart more radically from the strictly bookish metaphors found in many electronic texts, largely because of the program's Chinese

boxes metaphor for text spaces. Storyspace still draws upon aesthetic and cognitive assumptions derived from print conventions, however—assumptions that I discuss in detail below. In this Chapter, I contrast several electronic books and information spaces well known for their innovation: *The Virtual Museum*, Expanded Books and If Monks Had Macs. I trace the metaphors of knowledge inherent in each application and their relation to textual space. I discuss how Storyspace, the most popular hypertext writing program on the market, counters the more conventional notions of the book by representing knowledge as a new kind of writing and of textuality. I critique how all these electronic texts—whether they be “the knowledge warehouse,” the “classic hypertext” or the “postmodern funhouse”—still present the illusion of inexhaustible and freely accessible information.

The Idea of the Electronic Book

Electronic books have not yet gained acceptance and popular appeal with a general readership, especially as “serious” art. “Bibliographic databases and technical documents have long been regarded as legitimate texts for the computer: Novels, short stories, and poems have not” (Bolter 121). Hypertext applications are known for fun and games, and for educational and research purposes, but creative works in electronic form have not yet gained wide recognition or status as “real” literature. Early forms of electronic fictions, called interactive fictions, really were text games when they were first developed in the early 1960s. The first

electronic interactive fiction, *Adventure*, allowed readers to explore an imaginary space by typing in simple instructions and receiving narrative descriptions in reply. This game became a popular pastime of programmers and computer scientists. The next generation of interactive fictions were developed through the late seventies for home computers and retained the goal-and-obstacle design of the first fictions (Moulthrop and Kaplan 12-13). These fictions are still popular among enthusiasts: the early interactive fiction *Zork!* has recently seen its sequel *Return to Zork* published, and two Usenet discussion groups discuss this and other interactive fictions.⁴ Today's MUDs and MOOs, now popular among network researchers, have the feel of the early interactive fictions, but with a more directly social flavor, where users interact in real time by exchanging text that constructs ongoing stories and identities.⁵

The "third wave" of interactive fictions appeared in the later 1980s with the appearance of popular hypertext authoring software programs for personal computers, most notably Hypercard, Guide, and Storyspace for the Macintosh, and Toolbook for the IBM. The third wave has ushered in a new era of hypertext authorship: "This technological evolution for the first time has given writers direct control of the interactive medium" (Moulthrop and Kaplan 13). The publication of *Afternoon* by Michael Joyce in the mid-eighties opened up for the first time the implications of "a field of discursive possibilities" in narrative quite different from

the "polysequential" quality of the previous fictions (14). These programs give writers an electronic hypertext writing medium, in much the same way word processing did ten years before, and have motivated the writing and publishing of hypertext fictions. Interactive fictions, which require constant input from the reader, should be distinguished from hyperfiction, which is marked by its branching narrative structure (Sloane 3). These third wave hypertext fictions are a new of kind of electronic book that uses hypertext links to create named paths and other structures that construct a dense web of associations between pieces of the text. Hyperfictions are less tied to game metaphors and point more to the "narrative network" achieved through the exploring and linking of discrete textual (and sometimes visual) elements.

Virtual reality systems extend the goals of the electronic book, by providing a three-dimensional interface for exploring information. These programs use space as a metaphor and try to provide recognizable methods for interacting with that information. One designer describes the challenge of moving from hypertext to virtual reality:

Transferring hypertext to virtual reality cannot be achieved easily. A strong spatial interface metaphor is needed which supports orientation within and between hypertexts since it can help considerably in building and maintaining a cognitive map of the information space

Examples of spatial metaphors for information systems are manifold, the city metaphor being used frequently to illustrate navigational behavior. Other examples are information farming or information landscapes. (Dieberger and Tromp).

These authors are developing the idea of "the information city," which, like most virtual reality projects, uses architectural space to represent information as naturally as possible:

Hypertexts are represented as houses so that walking inside a house is navigation of the hypertext whereas traveling the city is navigation between hypertexts. . . . Walking along the street the user can look at related documents - like in a library where all books about a subject are on the same shelf.

Familiar cues like road signs, districts, and subway stops will orient the user to the space as if it were a city. The goal of this and other non-immersive virtual space is to make it feel like a "real-world" experience through the use of graphical markers and multiple media. The Hypertext Hotel, part of the MEDIA MOO, is also an immersive and interactive space that can now include multimedia hypertext documents, but all spaces are simply textual descriptions. Hypertext development will continue to incorporate more media and graphics. As hypertext technology develops, the conventions of existing media will continue to determine the

look and design of hypertexts. Paradoxically, print book conventions and visual media still dictate an audience's encounter with hypertext documents, even if the audience recognizes these texts as something "other" than a conventional book.

Toward an Economy of Information

With the current explosion of electronic publishing, printed texts may eventually become as antiquated and precious as the illuminated manuscripts in library rare book rooms. We will be reading books produced and consumed entirely by computer technology. These books will have many modern features, both familiar and unfamiliar. Books that are endless. Books that don't perish. Books that aren't linear. Books with multiple, or even unknown authors. Books that actually *do* things at our command, like record our annotations, make our cross references to other books, and in the process, become our own personalized book. Like Bush's "trails" of association, and the resulting web of these trails, electronic books are promoted as more useful, more efficient, and more personal than traditional books, because the linked items and glossed text form a new kind of personalized and all-encompassing book, the Book of Knowledge. Discussion of electronic books thus include the prophetic cry: we are in "the late age of print!" This phrase was coined by Jay Bolter to describe how printed books are becoming obsolete in our use of the electronic medium for reading, writing and communication, because most of what we

consider "lasting texts . . . will someday cease to be printed and will instead be distributed in electronic form." (*Writing Space 2*). The apocalyptic tone of much of Bolter's speculative and fascinating book, *Writing Space*, comes from his claim that hypertext writing is "a thorough rewriting of the writing space" (40), which suggests that writing and reading will never be the same again.

Bolter traces what he calls the dominant print technologies over a millennium to show broad cultural shifts in writing technologies and to describe electronic writing as the most recent shift: "This new medium is the fourth great technique of writing that will take its place beside the ancient papyrus roll, the medieval codex, and the printed book" (6). Each "economy of writing" demonstrates the "dynamic relationship between the materials and the techniques of writing" and the "genres of writing" (37). Thus, while the 20-30 foot papyrus could only contain a limited amount of continuous text that one read from beginning to end, the parchment medieval codex formulated pages with margins and, consequently, "the page became a web of text and interpretation, tradition and innovation" (38). The modern economy of writing arrived with the invention of printing in the fifteenth-century, which allowed standardized pages, rapid reproduction and what became the modern book: a single, bound and paged volume. Ultimately, the structure of the modern book created the modern image and idea of the author and text as a single, unified voice. Only electronic

writing, however, can incorporate all elements of all three previous dominant technologies. Like Vannaver Bush before him, Bolter imagines texts themselves, libraries and the nature of reading all shifting into a new kind of electronic text that mixes communication, writing, and interactive technology. Bolter constantly compares these four dominant types of writing throughout *Writing Space* to discuss issues like linearity, closure, authorship, and the activity of the reader. He stresses how the advent of hypertext writing allows us to historicize our notions of authorship, reading and closure that follow from the printed book that has predominated our writing technology for the past 500 years.

This history of hypertext depends upon two predominant arguments: hypertext incorporates all previous writing technologies and it improves upon all previous writing technologies. These descriptions of writing economies, the tracing of broad historical periods and the appearance of technologies still appear in a political and historical vacuum. Michael Heim considers how, in retrospect, "the psychic framework of the classic book" uncovers "an alternate, contrasting model for assessing the tradeoffs contained in the world of word processing" (*Electric Language* 167-68). These tradeoffs are not just oral and print conventions of language, however, but the political and social realities that still underlie the practices of electronic writing: capital, access, and literacy.

The design of electronic books is largely determined by the social assumptions technology embeds in its structure. These assumptions change over time, appearing in history as technical innovations, and are crucial to understanding the meaning of particular technologies, as well as an ideological level of technological efforts at a given period of time. For example, the sound-bite-sized pieces of text best suited to the postmodernist "pastiche" style of narrative are an offshoot of television and modern advertising (Poster). While the development of analog computing in the thirties was largely determined by the focus on efficiency and information management for a small group of elite scientists, global efforts in hypertext technology, combined with networking capability, are focused today on expansion and connectivity in the World Wide Web. Hypertext efforts are information projects that exploit the storage and retrieval capacities of computers to make knowledge available to as many people as possible, and in as useful and pleasing a form as possible.

Conventional print books have always served the function of providing and structuring information: libraries, reference collections and encyclopedias traditionally provide access to information through navigational and organizational structures like tables of content, series and indexes. Computer technology, and hypertext technology in particular, makes searching for information faster, more accessible, and more complete, making more real Bush's dream of the limitless personal library. Within such a mechanized system, any

knowledge that be specified could potentially be recorded, tracked and found again. This system of information demonstrates that we must shift our discussion from an economy of writing to an economy of information. Mark Poster's phrase, "the mode of information," best describes the current ideological horizon for technical innovation, because it emphasizes how information is now the dominant means of production and capital.⁶ Most hypertext computer efforts are in fact aimed at storing, presenting and accessing quickly vast amount of information. Even short electronic fictions and homegrown Hypercard applications are part of the growing economy of information, where the goal is to represent and make accessible as much data or text, or even as many readings, as possible. See, for example, Figure 4, which illustrates a Hypercard program I designed as an online class reader which gives students multiple sources for composing research papers on novelist Toni Morrison. Those of us who create electronic books know just how selectively we incorporate information into hypertext designs.

Virtual Worlds of Information: "The Knowledge Warehouse"

A "more is better" mentality underlies the reservoirs of text and the powerful functions available in electronic books. Each type of electronic book is characterized by the print text conventions it uses, and each has value as a type of information technology and way of knowing. An economy of information characterizes and makes possible one of the predominant metaphors for hypertext as the "knowledge

warehouse," best exemplified by programs like *The Virtual Museum* and *NCSA Mosaic*. These hypermedia applications, while not exactly like other electronic books, provide the best example of a virtual electronic information space to be navigated in order to gain knowledge.

NCSA Mosaic, a shareware network hypertext tool developed by the National Supercomputing Applications Software Tools Groups, has a similar goal: it provides an interface and hypertextual linking capabilities to all documents available on the Internet, including full color graphics, sounds, movies and animation (see Figure 5). *Mosaic* uses a two-dimensional abstract web, called a Home Page, of links to the places visited on Internet resources such as the World Wide Web, various libraries or Gopher public access folders. The result is ever-expanding research capabilities in a library of hypermedia documents at literal computer sites all over, represented by *Mosaic* with travel metaphors like *The Subway* (see Figure 6). While you explore spaces or conduct searches, full texts can be brought to the screen, as in the search for the word Hamlet illustrated in Figures 7a, 7b and 8. *Mosaic* documents could be described as an almost seamless presentation technology, true exploratory hypertext. However, the selective nature of the information available and the difficulty of constructing a *Mosaic* page gives it less to offer in terms of constructive hypertext or compositional space.

The *Virtual Museum* demonstrates a state-of-the-art application that represents the "book" of all knowledge as a new media. A non-immersive synthetic art museum designed using Hypercard, 3-D animated navigation, scientific visualization and Quicktime movies, *The Virtual Museum* is an experimental program for interacting with educational information, as the designers explain in a paper they included with the software:

To facilitate interaction with the museum, a method called 'virtual navigation' has been developed for moving through a synthetic 3D space, and for interacting with objects in that space. . . . *The Virtual Museum* project showed that it was possible to create a 3D navigation metaphor for an educational multimedia database.

When you click on an arrow, the inset screen runs a digital movie that simulates moving through a space (see Figure 8). Two directional arrows on the screen let you look 360 around the room to find objects. The design goal of creating "virtual navigation" also serves a broader purpose of representing what the electronic future might be like, where a world-wide, high-speed electronic network makes possible "remote" access to museums by many more people, "giving museum-visitors the ability to explore thousands of real and virtual galleries and exhibits from any area in the world. We wanted to make a prototype of what such an on-line experience might be like for a future network museum visitor." Both

Mosaic and *The Virtual Museum* use the idea of linking all information into a coherent knowledge base, but with different ways of representing and arranging information.

The Virtual Museum presents knowledge in as "realistic" a spatial metaphor as possible. The program simulates the experience of a real museum visit, but with unrealistic opportunities like flying over Mars. The description of the Mars simulation by its developers demonstrates this blend of realism and surrealism: "The Mars Explorer Exhibit uses real-time image warping to display a flat image of the surface of Mars. The viewer flies over the surface as if controlling an airplane. An alternative view of Mars is provided by a pre computed movie in which the elevation data for the terrain is combined with the color information to create a more realistic rendering of the scene" (*Virtual Museum*). The goal of this and other scientific visualization movies is to render the information realistically (the color of the terrain) and familiarly (the airplane flying metaphor), while granting the explorer superhuman control and other-worldly experiences.⁷

The Virtual Museum uses the public museum of science and technology as the visual and organizational metaphor to explore information. With its marbleized background, claustrophobic hallways and rooms, and its animation, the space is both architecturally realistic and consistent, and distinctly futuristic-looking. The navigational devices are a series of short, animated movies that orient the visitor

"realistically" to this surrealistic physical space. The animations use naturalistic and consistent pans of each of the rooms, where one "looks around" a room like The Plant and Biology Room and sees objects visible on the walls and in corners (see Figure 9). On entering a room, you recognize a number of objects—pictures on walls, sculptures in the atrium, and some very synthetic-looking plants. The "other-earthly" green and yellow plants sit rather normally in a corner of the room. Other objects are not immediately recognizable, for example, a 3D rectangle with a desert illustrated on it. The program uses a "look and explore" navigational metaphor for seeing and moving toward these objects: you click on the rectangle, for example, and the movie runs that zooms in on the object for closer investigation.

Sounds also create a sense of orientation that is both familiar and surrealistic: the strange sound of one's own footsteps when moving down the hall and across the room, or a voice-over narration that introduces each room as you "enter" it. For example, the short auditory introduction to The Environment Room is a male-sounding voice saying: "The Environment Room lets you examine the earth in different scales. You can zoom in and out on Satellite Images, tumble the globe in real time, and look around at an arid desert landscape." Auditory devices also help with problem-solving during navigation, as if you asked questions of someone working in the museum. For example, if you click on a wall

instead of on a doorway, the voice tells you to click on the doorway to enter the room. An easel stands next to each room's doorway in the main atrium, with one of the objects from inside illustrated on it as an exhibit display. Clicking on the easel in the entry of each room prompts the voice to tell you which room it is, which provides another type of basic navigation. It talks you through the space, an experience both familiar and disconcerting.

These exhibits are comprised of scientific data simulations produced by 3-D modeling of scientific data. When you click on a specific object and move towards it, all three-dimensional illusion disappears and a movie runs in a flat, two-dimensional window illustrating a natural process. For example, clicking on the potted plant triggers educational movies and questions about plant growth (see Figure 10). In "The Medicine Room," an "Artery Comparison" display asks the question: "Do healthier arteries make different sounds?" It then illustrates and plays the simulated sound of "normal blood flow" versus "stenosis," a condition that damages arteries. The technique modeled and simulated here by computer, called "color flow ultrasound," uses color imaging to illustrate the flow and help diagnose artery damage. All of these displays include explanatory text, user controls, and several topics that can be selected. These movies and the accompanying text make up most of the "information content" of each display, since the three-dimensional navigational space does not yield much

information about the synthetic objects. The animations, all state-of-the-art visualizations developed by scientific teams, are interactive and educational. They use multimedia techniques to maximize user control and make learning attractive. The designers explain their original goals: "to build a system which was aesthetic, fast and fun"; "To develop a new metaphor for navigating through information"; to include "a variety of techniques for interacting with images and objects"; and "to create a practical method for navigating through a 3-D space." Knowledge is presented in this environment completely through graphics and visualization. The keen attention to aesthetics and graphic design is an integral part of its pleasure and its value as a learning environment.

The metaphors of sight and the object-oriented interface suggest that, in *The Virtual Museum*, "seeing is understanding." The overall design metaphor is classification of information, however, suggesting that all objects can be found in their proper place. The visual representation gives the impression that the visitor can move around, select, and control access to information at will. This program shares the hidden assumption with the Memex, however, that all information can be known, understood, and accessed by everyone. On the cover packaging, the developers describe the museum as a "knowledge warehouse" where one can see anything "on order":

One idea of a virtual museum originated in the Renaissance, and was called a Kunsthammer, or knowledge warehouse. The idea at that time was to display a painting that contained miniature versions of a large number of objects. Museum visitors could then "order" any object seen in the painting, and an elaborate system of elevators would be used to bring that object out of a basement warehouse. Four or five centuries later, we have developed a digital Kunsthammer.

These objects are the physical embodiment of empirically verified scientific knowledge: if seeing is knowing, then one can simply look at the object to grasp its meaning. Flying over Mars gives limited understanding of astronomy, however, unless other skills, knowledges and information are already in place.

The Virtual Museum treats information as objects to be grasped autonomously and in their correct place; like electronic books, it presents an image of coherent knowledge in collage form, suggesting that collections of images, freely navigated, lead to understanding. Most importantly, though, the collage must have an overall design, a unity of form, so that the user can recognize all the pieces in their proper place. The goals of *The Virtual Museum* project are at once educational, democratic, technological and futuristic. Like *Mosaic*, it appears to bring us one step closer to Bush's dream of the personalized and endless electronic library.

What these programs obscure, however, is the idea that libraries themselves are human institutions created by processes of collection and selection. Just as libraries can boast numbers and mystify their own processes of selection, these programs treat knowledge as a warehouse, filled with an inexhaustible supply of information objects that, once properly explored, can be owned by anyone.

The Expanded Book: Classic Text, Only Better

A more traditional appearance accompanies many of the hypertext electronic books created using Hypercard. These on-line books are re-published classic and popular books in electronic format and include an interesting range of books like *The Annotated Alice in Wonderland*, *Jurassic Park* and *Imitatio Christi (The Imitation of Christ)*. The Expanded Books series and *If Monks had Macs* both use the page metaphor of a conventional book, in which the screen is exactly one page of printed text, with graphics, typography and even illuminated letters as illustrations (see Figure 11). The name "expanded" suggests the idea of keeping as many of the familiar textual markers or cues as possible, while still creating an electronic text with many powerful capabilities. The Expanded Books series lives up to this name by ambitiously reproducing as many print text metaphors as possible. These books recreate the paper text metaphor through design elements like numbered pages, room in the margins to take notes, a space to draw lines alongside paragraphs, and also familiar actions that one performs with

books, like paper clipping a page, turning down the corner, or placing a bookmark in the text to mark it (see Figure 12).

Rather than defamiliarize the form of the book, Expanded Books make it as familiar and recognizable as possible, while supplementing it with technological capabilities. The program enriches the use of the books with electronic functions like searching for particular words, full concordance features where all instances of a word can be traced, and topographic attributes like bold and italics. The program automatically tracks all note-taking: for example, you can find and trace through every instance where you made a phrase bold, or drew a line in the text. These books suggest that the expanded format can be marked, and yet retain an indestructible, neatly-annotated copy easier to navigate than paper text.

The designers of these books assume that certain printed texts are already hypertexts waiting to be electronically presented. The electronic design assumes that textual sources, both explicit and implied, are equally present as part of the book, making the book text endlessly expandable. Rather than a broad intertextuality which describes the interconnected nature of all texts, this cross-referencing resembles source analysis and scholarly exegesis. The hypertext software environment just acts as an electronic template for commentary that already exists. Brain Thomas' introduction to *Imitatio Christi* makes this connection explicit: "the Imitation is a marvelous mosaic that arranges more than 1100 references to nearly every book of the Bible

into the 'best loved and most widely read book of Christianity after the Bible itself.' . . . The Imitation of Christ started out as a medieval manuscript with some of the qualities we now associate with hypertext" (*Imitatio Christi* 1-2). Martin Gardner, who edits and annotates the electronic version of *Annotated Alice*, makes a similar claim in his preface:

Can you think of any fantasy writing that better lends itself to hypertext than Lewis Carroll's two Alice books? Each is a "dream machine" in which a conventional plot, like those of Frank Baum's fantasies, is replaced by dream episodes that have little connection with one another. You can relish any chapter without knowing what came before or will come later. It was not an accident that one of the earliest examples of programmed cyberspace, in which you move about inside a "virtual reality," was the Mad Tea Party. (1)

The unconnected and dream-like episodes of *Alice* seem to lend themselves best to hypertext electronic structure and dreamy values. Gardner refers to Ted Nelson's idea of dream machines, one of Nelson's many analogs for hypertextual style narratives. As an example of the book's hypertext form, Gardner's word "dream machine" is underlined and linked to a passage by Nelson himself, who writes about Alice's dreams as an appropriate subject for hypertext in the "Forward" to *Annotated Alice*:

Alice's dream-endings satisfy because of their curious appropriateness. It seem especially right for them to end by waking because the quality of the stories is very, very dreamlike. Events are at once meaningless and importantly fraught, in a dreamlike way; the way things change, the way things are juxtaposed, the way things are caused. Causation, especially, in these stories, has an extremely dreamlike texture: too much or too little results from every act, as emphasis shifts and dubious consequences explode. . . . The Alice events are continually surrealistic, both in the choice of creatures and events and in the continuing social interchange around them. I take surrealism to be the combination of familiar objects in mysterious contexts that render them strange, their old connotations flapping loose (like Dalí's famous drooping watches). (7-8)

Changes in juxtaposition, causation and use of surrealism all defamiliarize these texts, because they undo conventional stories and make them dream-like, more associative, and more like hypertext. The surrealism of *Annotated Alice* that Nelson describes, like that of *The Virtual Museum*, takes the familiar setting into an electronic context. Nelson's phrase "dream-endings" is also annotated in another hypertextual link, so that clicking on the word takes you to a different text window, that begins with the following explanation:

Alice's adventures make a space of dreams, strangely connected. The associations you need at hand to read it make up a sort of parallel dream-space, less connected even than the main narrative. . . . Each piece is attached to the main sequence in its own way; there lies nothing beyond in any deeper organization. . . . That's what's supposed to happen in your mind, and the footnoting hypertext structure of The Annotated Alice simply makes that structure of associations available. (4-5)

Nelson explicitly appeals to the naturalistic idea of connections between dreams, associations, and the working of the mind as hypertextual; the electronic structure makes these associations "real." In a later link, Nelson concludes:

This Voyager edition is excellent for reading a sequential work with a parallel track, allowing you quick access and the ability to make notes, which most hypermedia systems do not yet permit; your copy of Alice can be as thoroughly yours as it could on paper. Other hypertext structures of tomorrow will call for fancier designs. But we know this: they will be informed by Alice consciousness, and they will be places where Lewis Carroll would feel at home (9)

The parallel reading activity, the annotations, and the design are what make this book your own and personal. The annotations appear in a separate stack on numbered pages, are all titled, and have links to particular underlined phrases in the text. In the example of "dream machine," the number of associations is multiple, but can be traced from Gardner's Preface to Nelson's Forward to other Alice Annotations. This kind of contextual tracing is only an enhanced version of the conventional book apparatus of scholarly cross-referencing. Listed under the "Books" menu, these annotations serve as an alternate book to enrich and better inform the original *Alice in Wonderland* text.

All electronic books use technical design to address specific needs and desires of the conventional readers of the printed texts. For example, Gardner's Preface to *Alice* suggests a linear reading first without viewing the links:

In the unlikely event that you have never read Carroll's two masterpieces, let me urge you to do so, preferably without the footnotes highlighted in this electronic edition, before you start to explore the annotations and the mazelike paths on this magic disk. You'll be surprised at how much more enjoyable the text becomes, how much richer its meanings and subtle humor, and how much you will learn about Victorian life and customs. (1-2)

The annotations themselves function as an extension of the text proper, as in the Nelson example above, and also as the

readers' contributions to the text. The original print copy of *The Annotated Alice*, published in 1960, was already a kind of hypertext that included notes by the author and his readers. Martin Gardner writes about his original project: "My task then was not to do original research but to take all I could find from the existing literature that would make the Alice books more enjoyable to contemporary readers. During the thirty years that followed, public and scholarly interest in Lewis Carroll has grown at a remarkable rate" (40). At the same time, he explains how, without reader feedback, he could never have written this electronic sequel: "hundreds of readers of AA sent me letters that called attention to aspects of Carroll's text I had failed to appreciate and that suggested where old notes could be improved and new ones added" (*Annotated Alice* 43). This compilation of notes became Voyageur's electronic *Annotated Alice*. The hypertextual link can lead to a few sentences, or an entire essay by that link's author. In contrast, the annotations in the electronic *Jurassic Park* are pictures with sound. As author Michael Crichton explains in the preface:

I've long believed that electronic publishing was the way of the future, and I am delighted my book was among the first to be chosen. . . . [I]t also contains features I could not include in the printed book: the dinosaur cries that I listened to while I was writing, the animated fractal graphics that I created, and some of the artists' renderings

that I found evocative and compelling during my research. I am excited that readers can now share these experiences. (*Jurassic Park 1*)

This electronic enhancement is not so much hypertextual as a hypermedia enhancement of the text: drawings and sound accompany the dinosaur names that are underlined in the text, and the computer draws the fractals that preface each section of the print book. Crichton and the designers assume that these enhancements will delight other readers as well. Such superficial changes might be unwelcome experiences for some readers, however. Crichton's assumption that we will enjoy his selection of drawings and sounds, all badly reproduced by Hypercard, can actually reduce the pleasure of reading an imaginative text.

The most common hypertextual elements are thus textual references, where sources appear as footnotes that can pop up next to the text. In *Imitatio Christi*, clicking on a cross symbol brings up a biblical reference that glosses the primary text like a footnote (see Figure 13). The indexes and tables of contents provide easy navigation through the text much like a conventional book, with the added feature that selecting topics from the index or contents takes one automatically to that reference in the text. The *Imitatio Christi* has a tradition of reading practices that the designers cite, and then build into the program. They explain the most common practices of searching for inspiration from the text:

Despite the inner unity of the Imitation, the reader is usually advised in the introductions to "open the book to any page at random where he will find much instruction and inspiration," or to read the book "slowly, reflectively, in brief portions at a time," or to repeatedly turn to it as a "source of devotional thoughts and aphorisms." Thus, these introductions to the Imitation advise readers that this is a book that need not be read sequentially, and is, in a sense, the weaving of an intricate pathway through the Bible towards the light of Heaven.

And in fact, the designers program exactly these reading functions into the electronic book: a random page selector, a contents page with titles of the brief chapters that, with a click, take one there, a "Quotes in Context" section that lets you select topics, and a Reference Index that lists all the biblical quotations that Thomas à Kemp, author of the Medieval text, used as sources, which, with a click, takes you to where these sources are referred to in the text. Again, these programmed reading experiences can easily become more limiting than liberating by their sheer proliferation.

All these electronic books use text marking as a way to personalize, own and understand the book in a variety of ways. The "Library Stack" lists the books owned by the consumer and has a link to each book; and each Voyageur book, as it open up, flashes the text: "This book belongs to

_____." The If Monks Had Macs books include a notebook and a "Bookmaker" stack with the necessary directions to create your own hypertext book. In both cases, traditional methods of reading and annotating the text are adapted almost effortlessly for the computer. Expanded Books seem particularly designed for the less experimental reader, who wants traditional and familiar reading practices to be explicit in electronic technology. Most importantly, no matter how many times they are read, these texts remain pure, clean, and classic, with neat and separate spaces for marking, writing and keeping important points straight. Knowledge is clean and contained, and yet endlessly expandable, but the original is always preserved. These texts lend themselves to annotated hypertext: texts that use the mosaic of sources, and that have the dreamy and associative kinds of stories that undo traditional, plot-driven story coherence. These expanded versions help contain knowledge and keep it manageable, even while giving the impression of the text's infinity.

Topographic Reading and Writing in Storyspace

Unlike the Expanded Books and If Monks Had Macs series, Storyspace books work hard to undo any resemblance to the conventional book, the printed page, or traditional reading practices. They don't hide their defamiliarizing techniques, but rather foreground them. These texts make no pretense of closure, containment or finality: they are seemingly infinite. The text squares, called "text spaces," can be

described as Chinese boxes on the screen that contain other boxes. The contents of each box can also be linked to the contents of any other box with multiple links and paths between words or spaces, and between levels. Storyspace documents use this visual text space metaphor for reading and writing, where each piece of the text is labeled and appears as a box on the screen in the "Storyspace View," a kind of geometric map (see Figure 14). Text spaces are linked together by lines, which also have names or titles. Storyspace includes several graphic methods for viewing the overall text structure. The "outline view" uses a typical tree structure of text space topics and subtopics, with the selected space highlighted, while the "chart view" uses a horizontal linear flow chart. These spatial arrangements are all abstract geometrical ways of viewing the text, and don't simulate any geographic or virtual space as in some other programs.

Storyspace depends on a topic-oriented conception of writing which has a visual analog, not to the printed page, but to the pop-up notes features that other hypertext structures offer as a secondary, rather than a primary, feature. Bolter, one developer of the program, coined the term "topographic writing" to describe how writing in this kind of hypertext environment is both visual and verbal:

The word 'topography' originally meant a written description of a place, such as an ancient geographer might give. Only later did the word

come to refer to mapping or charting—that is, to a visual and mathematical rather than verbal description. Electronic writing is both a visual and verbal description. It is not the writing of a place, but rather a writing *with* places, spatially realized topics. Topographic writing challenges the idea that writing should be merely the servant of spoken language. (24)

The word "topographic," for Bolter, has the resonance of location, but it includes the spatial, the visual and the verbal in its semiotic representation. Storyspace replaces the printed page metaphor common to other hypertext books with these "spatially realized topics." Because text spaces can have a large number of links between them, they become the dense "network of topics and connections" that Bolter describes. For example, a topic like "Cigar Box" is the label for the space and a fragment of what it contains; the topic gives each text space a name, it forms the basis for discussing the text, and structures the links and other views of the text (see Figure 15).⁸ The program automatically makes available multiple links to follow from any one space, with rather minimal descriptions and directions (see Figure 16).⁹ The user interface for composing poses difficulties for those unfamiliar with hypertext writing. You must keep distinct the difference between text windows, which can be written in, and text spaces, which contain other texts. The text windows and spaces can all be sized according to the user's

preferences, yet keeping track of which is which (despite their label and the programmed feedback) can be difficult. Keeping track of the links followed, and the paths of those links, is often difficult as well. When drawing links with the linking tool, one must often use the "tunnel," which acts as a place to hold the link while looking for a place to anchor the other end. In the time spent searching for the destination among boxes within boxes, one might forget the desired connection. The complex authoring and organizing tools are designed to address just these kinds of difficulties but they are difficult to use and take time to master.

Annotation in Storyspace, like most hypertext programs, lets you append a pop-up note to text. In Storyspace, however, the process is more automatic and the notes more integrated with the original text than, for example, a separate notes stack in Hypercard. The user clicks on an annotation tool to write a note, and a small text box appears. After being closed, the note gets stored as a text space in a "Notes" box at the top level of the document. These notes are automatically linked to their original source, but they can also be linked to any other part of the document and incorporated more fully into the structure of the text. The assumption about readers is that they not only want to personalize the text, but add to it, extend it and make it their own. Readers of electronic books always annotate and add to the text, but here the composition

becomes part of the text (see Figure 17) . This is a messy process, a fact that its developers admit and that is sometimes evident in the screen full of boxes within boxes and a dense network of webs. Because it does not imitate book structures or enhance familiar reading experiences, Storyspace departs the surrealistic environment for an explicit semiotics, using representational objects in its visual writing space. This structure offers no seamless overall design or proper place for things: thus, it really departs from the "mosaic" metaphor of other hypertexts, replacing it with a rather clunky semiotics of squares.

Storyspace exists as an authoring system and a read-only program, and the latter is used for most published fiction. The Storyspace Reader includes only the four-headed arrow for navigating, and a tool for following the links. Clicking on the "navigate" tool selects a default link to follow from text to text, with a kind of randomness built in. The reader also can choose which link to follow in several ways, however. A combination of keys highlights which phrases are hypertextually linked in the text, much like the underlined text or the symbols used in other books. A keystroke lists the names of all paths from that text space, where one can then choose a path to follow. The program remembers all link choices and all links can be retraced sequentially, so that, for example, one can try a few "steps" down each path, then go back and try the other paths. After a certain period of reading by any of these methods, one might pass through the

same texts several times, giving a circular and even claustrophobic feel to the reading experience, or one may progress down a seemingly endless narrative strand with no repetition whatsoever. The metaphor of a visitor to the museum or library still characterizes the reader's encounter with a Storyspace hyperfiction. Douglas' Introduction to *Victory Garden* makes this connection: "You don't need to peer intently at every exhibit to feel that you've 'done' the museum. What prompts us to leave the museum is not the sense of having digested its every aspect, but the sense of having satisfied—or exhausted—something in ourselves" ("Are We Reading Yet?"). It is still not clear, however, that much of a popular audience exists for hyperfiction. Hyperfiction masquerades "serious" literary fiction with populist ideals.

Hyperfiction as Serious Literature: The Postmodern Funhouse

Storyspace books necessarily make one conscious of reading them as an incomplete and nonlinear process. Unlike other electronic books, which give the impression of completeness and containment, these textual structures deliberately foreground notions of linearity, coherence and time. Traditional electronic books, and even virtual realities, depend on organizational metaphors and coherent textual spaces to contain vast reservoirs of information. Rather than being tied to a certain scheme of classification or single text structure, Storyspace uses Chinese box forms, named links, and randomness as structural metaphors. The Storyspace text encourages a reading method that is more like

watching all cable TV channels all at once. You dip in and out, confront small pieces of text, traverse default links or select from a variety of links, and never reach an identifiable end of any text. The text never ends; only the reading experiences do. Such a description lends itself to defining hyperfiction as the full postmodern text.

Several published hyperfictions, such as Joyce's *Afternoon* and Moulthrop's *Victory Garden*, demonstrate how the postmodern structure and content of deliberately parallel postmodernist print works by Coover, Cortazar and Borges. Coover's "The Babysitter," noted for its multiple plot lines, its indeterminate meaning and its meandering structure, resembles the experience of traveling through Storyspace hyperfiction.¹⁰ The plot is structured around a horrific event—the rape of the nameless babysitter by several people—but each story strand gives a different version of what happened, including the characters watching the entire plot on television. Similarly, in *Afternoon*, one afternoon's events are filtered through the main character's uncertainty and philosophic musings, and the plot turns around another horrific, yet uncertain, event—the car crash and possible death of the narrator's family. *Afternoon* also uses the tight circularity and temporal disruption of Borges' labyrinth plot in "Garden of the Forking Paths," and the narrator occasionally finds himself in the labyrinth confronting the Minotaur.¹¹ Stuart Moulthrop's *Victory Garden* sets the lives and conversations of characters during the

Gulf War against a constant flux of media coverage. This media narrative of the war sets up a formal and thematic analog to Coover and to the white noise, flotsam and jetsam of Don DiLillo's novels. The deliberate use of piecemeal texts, multiple genres, and several sequences for reading them also have precedent in *Hopscotch*. Like their print predecessors, then, these hyperfictions focus on a philosophical account of postmodernity by a Gibsonean console cowboy. The detective plot of horrific events drives the narrative, but it turns around the uncertainty of events and the blurring of perspectives. Postmodern chaos, uncertainty, and the background noise of culture is paralleled by the meandering and regressive textual structures of *Storyspace*.

In contrast, Guyer's *Quibbling*, one of the best new hyperfictions and one of the first published by a woman writer, uses spaces like "Moon" and "Lake" as organizational features in *Storyspace* and as themes that link the thoughts and interests of characters to their surroundings. The structures of texts within texts—for example, four women characters are grouped together inside the space "Nuns" and their lovers' spaces are within each woman's space—adds a spatial and relational commentary about community and voice rather than infinite regress. While incorporating the path exploration in *Storyspace*, *Quibbling's* sense of space makes it more like exploring a familiar woods or town rather than leaping into the abyss of the labyrinth. *Quibbling* is thus more reminiscent of A. S. Byatt's *Possession*, Marilynne

Robinson's *Housekeeping* or Toni Morrison's novels, because it focuses, structurally and thematically, on representations of community and social spaces in spite of inevitable postmodern alienation.

Hyperfictions cannot be discussed in a literary vacuum. These narrative structures are very like what Linda Hutcheon describes as "historiographic metafiction": postmodernist texts marked by their self-consciousness, their use of multiple genres within the text, and their nonlinearity. They have many of the qualities that Brian McHale describes in mainstream postmodernist fiction: most notably, the Chinese box structure, labyrinth-like experience of reading, and infinite regress. They are based on their printed predecessors, including books like *Don Quixote* and *Tristram Shandy* which openly simulate a dialogue between the author and the reader: "Genuine conversation, completely spontaneous and unconstrained, exceeds the capacity of any fiction, conventional or electronic. Yet this has not kept writers of books from working out a great number of literary devices that simulate dialogue with the reader" (Moulthrop and Kaplan 11). Storyspace fictions are beginning to gain some notice in the popular literary press, and momentum is building to establish hyperfiction as both a genre and as serious art. Richard Ziegfeld complained in a 1988 article about "the perceptible gap between reality and potential. For now, interactive fiction's reality is disappointing because it is often associated with adventure software . . .

. Interactive fiction still awaits a major high-culture advocate whose software product wins coverage in *The New York Times Book Review*" (359). Reviews that in *The New York Times Books Review* proclaim hyperfiction as "serious" fiction worthy of critique in periodicals that help define popular literary taste. "Serious hypertext," as hyperfiction publisher Eastgate Systems calls it, further promotes this idea that electronic fictions, too, can take their place as "serious" literature. Hyperfiction writers and publishers influence popular opinion that hyperfiction is literary text, and not just computer text. This assertion requires a literary relationship to a canon of American fiction. To be serious literature, and to have readers recognize it as such, hyperfiction must appeal to some known set of narrative conventions and literary qualities. The conventions invoked by most authors are the traditional conventions of "high" modernism and of postmodern fiction; rarely if ever do they extend to the ex-centric, or non-canonical writers that could also be included in a description of postmodernism.¹² Parallels are often made between hypertext writing and novelists who used these "interactive" or "nonlinear" conventions in paper, writers like Lawrence Sterne, James Joyce, Jorge Luis Borges, Julio Cortazar, John Fowles, Italo Calvino, and Robert Coover.¹³ While giving hyperfiction a legitimate place in a postmodernist or *avant garde* literature course, the literary precedents invoked also point to the narrow definition of postmodernism being invoked to sustain

the literariness of hypertext. Hyperfiction is an evolving literary genre, in fact, with recognizable conventions of narrative, and it is staking out a place for itself in the traditional literary canon. Coover makes a strange distinction, however, between the quality of the fiction and the design of the hypertext when he reviews hypertexts: "this is a very silly fiction about very silly people, but it has the virtue of a simple yet elegant hypertext design (11). By virtue of its *technology*, then, and not necessarily its art, hyperfiction merits a reading, which even the title "Novels for the Computer" suggests. Coover avoids the mechanistic overtones of phrases like "computer-generated literature," however. These are still novels—creative works of art; they just aren't very good ones.

Conclusion

What do we see when we look at a hypertext fiction? Is the web-like structure of narrative chunks, linked together in both obvious and subtle ways, and with unclear boundaries, something familiar? Does it defamiliarize novelistic form in the ways we have understood it? Does it enact electronically the disruption of narrative codes, suspension of clues and playing with expectations that we've seen exploited in Faulkner's *Absalom, Absalom!* and Barth's *Lost in the Funhouse*? Reading theorists and literary critics have pointed out that all reading includes just this sort of detective work in the reading of clues and anticipation of outcomes.¹⁴ In some sense, then, the narrative games implicit

in reading are literalized or even amplified by hyperfictions that include such activities as following clues along links of related ideas or topics and remembering multiple plot lines and characters. Hypertext might remind us of different conventional forms: science fiction, detective novels, epistolary novels, postmodern fiction, concordances, and encyclopedias. Reading a hypertext book can be more like playing a game or running a maze than reading a conventional novel cover to cover. Computer games and interactive fictions like the *Choose Your Own Adventure Series* may be preparing young readers for hypertext fictions as conventional novels.

The dialogical sense of text and the ability to represent a multiplicity of voices within the text spaces and along paths give Storyspace writing some of its most identifiably "postmodern" qualities. This dialogism and polyvocal structure make Storyspace documents postmodern and blur one's sense self and other. In fact, "contributing one's voice to the hypertextual discourse means necessarily giving up some of one's sense of identity" (Johnson-Eilola 122). Because Storyspace supports and blends multiple voices so easily, critics see potential for a feminist *écriture* embodied in the circular structures of hypertext writing created in Storyspace (Sainsbury). Overall, however, hyperfiction, which is promoted as new, experimental and even radical, depends on existing discourse structures and on a fairly narrow understanding of postmodernism in which content

is embodied by form. A perfect example of the matched form and content is the multimedia novel *Uncle Buddy's Funhouse*, by hypertext developer John McDaid. This story is a musing on postmodernist disillusion and random reality, and the limitations of print books; the publication itself is a box that includes computer disks, letters, drawings, and audio tapes. If hypertext is simply historiographic metafiction in electronic format, then it has gone beyond the electronic book template to become the postmodern funhouse itself.

As state of the art, hyperfiction has it made: it fits perfectly with its electronic medium, the flexible computer text, and with the modern literary texts to which it is so well suited. Hyperfiction is understood by its almost metonymic relationship to a canon of modern American fiction, and by combining recognizable features of that fiction with the endless possibility of cyberspace as a new frontier in the style of the cyberpunk magazine *Mondo 2000*.¹⁵ This description is problematic and predetermined on both counts; it is yet another symptom of general idealism about hypertext. These literary examples demonstrate how limited are the conventions of hyperfiction as practiced. An extremely narrow canon of literary precedents for hyperfiction—almost exclusively male modernist and postmodernist writers—still perpetuates mistaken ideas about hyperfiction and closes off other, equally promising forms of experimentation. I want to emphasize *practice*, however, because I believe hypertext to be a potentially exciting

literary form as the literary practices in this electronic medium become more varied. When we have a hypertext compositional space complete with creative tools in all media and interactive social spaces, we will have a real "writing studio" to offer ourselves and our students. Hypertext writers currently make do, then, with communication in electronic mail, with Storyspace for constructive hypertext, and with *Mosaic* for seamless presentation, as we'll see in their own descriptions of reading and writing in hypertext.

Notes

¹The structures of computer books have required a set of conventions and rhetorics. Important discussions of the electronic book, its conventions, and its rhetoric are Yankelovich, Meyrowitz and van Dam, Yankelovich, and Landow "The Rhetoric of Hypermedia: Some Rules for Authors." For an important and lucid critique of the rhetorics of hypertext and the electronic book conventions, see Moulthrop, "Beyond the Electronic Book."

²My argument is an extension of Bolter on the history of book culture and economies of writing (see 37-40).

³Other hypertext programs include NoteCards, Intermedia, Xanadu, Guide, NLS, MacWeb, SEPIA, HyperTIES, Hypergate and Concordia. All of these programs use some kind of text window and a history of places visited, bookmarks, or a graphic web view to represent links or paths followed.

⁴This information is from Steve Derby's self-published review that he posted to the newsgroup rec.games.int-fiction. His review is based on the IBM VGA version of Return to Zork marketed by Activision.

⁵For a good description of a MUD as both a game and a social phenomenon, see Curtis, who designed the first interactive software to support MUDs and MOOs. One Usenet newsgroup, alt.Callahans, is devoted to creating collaborative network narrative based on the novels of Spider Robinson.

⁶See also Ross' Introduction to *Strange Weather*.

⁷Scientific visualizations often use this blend of realism and other-worldliness for data-imaging by using color, animation and 3-D modeling tools.

⁸Storyspace's heuristic value for writing and teaching, though not trouble-free, is indisputable. Peggy Mulvihill writes that "where process is stressed and respected, Storyspace will be an asset" because it both accommodates and illustrates the writing process (128). The potential for collaborative work on Storyspace documents is one well-documented, promising feature for composition.

⁹Such links can create a mystifying experience of traveling across someone else's set of associations and trying to guess at the author's idea of a connection (Douglas "Nature vs. Nurture"). Topographic writing also has limitations that are specific to Storyspace writers. Some problems include cognitive overload during the navigation of

large documents, the size of the hypertexts themselves, and an overwhelming sense of multiplicity (Johnson-Eilola 109).

¹⁰Sloane also compares this Coover story to the structure of interactive fictions like "Adventure."

¹¹Borges' story, in turn, was made into a hypertext fiction (with the same title) by Stuart Moulthrop. See his description in Moulthrop, "Reading From the Map."

¹²The relationship between modernism and postmodernism is a huge debate in itself. Baudrillard and Lyotard provide the primary model of postmodern culture and communication for most hypertext scholarship, while Jameson politicizes literary postmodernism as the logical product of a late capitalist culture. I am assuming, like McHale, that literary postmodernism in its male-centered canonical form is a direct extension of and formal comment on the "high" modernist conventions of T. S. Eliot, William Faulkner, and James Joyce. However, see Hutcheon 49-53 on postmodernism as not just formal or apolitical categories, but defined as centering the ex-centric writers who remain on the margins of contemporary canons. Hutcheon explodes the definition of postmodern fiction by including a huge number of contemporary writers—from feminist sci-fi to women of color.

¹³For example of comparisons to these literary precedents, see Sloane; Moulthrop, "Reading from the Map"; Bolter, *Writing Space*; Landow, *Hypertext*; Moulthrop and Kaplan; and Johnson-Eilola, *Nostalgic Angels*. Almost all comparisons are to twentieth-century male writers or cyberpunk writers with no mention even of Angela Carter, Kathy Acker or feminist science fiction writers. One exception, not specifically about hypertext, is Katherine Hayles, who demonstrates how "the same forces within the culture that authorized chaos theory are inscribed" in contemporary narratives. Hayles cites fictions by Doris Lessing, and Marilynne Robinson, among others, as literature that is self-replicating like fractal theory and thus part of "an emerging design."

¹⁴I am referring specifically to phenomenological and experiential reader-response theory. See, for example, Rosenblatt and Fish. See also Parker on the detective plots in Faulkner's novels.

¹⁵See Giuliani on the colonizing discourse of *Mondo 2000*.

Chapter Four

Hypertext as Group Practice: Accounts of Reading and Writing in Hypertext

Collaborative Hypertext Writing Practice

This chapter analyzes the reading practices of a small group of hypertext readers and creative writers as they describe these activities in response to open-ended questions I sent over electronic networks. These reader/writers use hypertext writing technology both for pleasure reading and for composing creative texts. Many of these people also discuss commonly read hypertext works and theories in public electronic discussion groups, where they debate the appropriate aesthetics for hypertext writing. My analysis aims to discover the current reading and writing practices associated with hypertext, to focus on constructed differences in such identity categories as gender, profession, and computer expertise, and to identify any consensus-making processes about the definition and value of hypertext fiction specifically and hypertext writing and reading processes more generally. I first want to argue that this is a collaborative group of writers engaged in writing and response over electronic networks, who are contesting the terms in which hypertext works are to be understood and appreciated. Secondly, rather than a unified group with a single "culture," hypertext reader/writers are a diverse group of academics, computer professionals, librarians,

students, artists, and writers who share a "network culture" by virtue of their participation in the worldwide network and in hypertext writing. I suggest that this small group of writers—only a small percentage of the current hypertext readership—represents some activities of hypertext readers in general, but also provides the first grounded description of these evolving and participatory reading and writing practices in the current reception of hypertext. We need these local accounts if we want to move beyond the hype and the liberatory motifs in the current popular press surrounding words like "cyberspace," "global network," and "information superhighway," as well as "hypertext" itself.

The issue of how to define and conceive of dialogic, electronic "response" is fundamental to my theory, my methodology and my analysis of literate practices in hypertext. I treat this data as qualitative, descriptive and preliminary, not as a percentage sample of a population; the very nature of the networks where I posted the questions makes numbers difficult to determine in terms of traditional quantitative survey methods where one hopes to get a response rate of at least 10%. Rather than try to establish a representative sample with my 58 correspondents, or to distinguish between every kind of electronic interaction, my goal is to yield as thick a description as I can of the collective horizons and collaborative acts that contextualize these readers' and writers' practices. Taking the lead from Bakhtin's use of "utterance," in *Speech Genres*, I call these

acts of speaking electronically, or of writing conversationally, "utterances in the electronic medium."

The questions I asked focus on the reading and composition practices of people who read and often write in hypertext form. This writing focuses on hyperfiction, but also other compositions in which images are often juxtaposed directly with text.¹ I am proposing that these hypertext fiction writers and readers are a well-defined set of overlapping groups, and that one primary audience for hypertext fiction is the writers themselves.² Another way to put this is that almost everyone who read early hyperfictions in the eighties ended up writing something hypertextual in the nineties. They are, in fact, a highly collaborative and a contentious group who read and discuss each other's work, who have distinct literate practices, clear lines of communication, and frequent interactions with common texts. While the fiction-writing hypertext practices don't represent all hypertext writing, the compositional processes described by these writers are not based exclusively on fiction writing. And most respondents don't believe that hypertext fiction is a particular "genre" at all, but do believe that it encompasses many genres like poetry, film, and personal correspondence. This small community of hypertext readers and writers is, in fact, in the process of developing the interpretive strategies and reading conventions necessary to understand hypertext. This particular group of reader/writers is perhaps better equipped to throw aside old

conventions, but people don't agree on how to recognize, understand and appreciate hypertext writing.

This chapter and the following chapter both dramatize this meaning-making and consensus activity. I draw out implications from a set of questions that I sent out (or "posted") over electronic discussion lists during four weeks in November-December of 1993, and from network conversations in which I've participated in the past two years. While a larger set of overlapping contexts make up the institutional and social factors surrounding hypertext writing, I can only touch on some of those other contexts here: the culture of particular electronic discussion lists, the role of electronic publishers, and the impact of growing publicity and visibility for hypertext fiction in influential reviews of "serious literature" like the *New York Times Book Review*. These writers' comments focuses on how they use hypertext writing technology and on comparisons between reading and writing printed fiction versus electronic fiction. More specifically, I'll cover five areas: [1] methodology; [2] demographics and practice; [3] attitudes toward technology; [4] electronic and printed reading practices; and [5] compositional processes for hypertext writing.

Results (Part I): Readers and How They Use Technology

Demographics

I have included 54 responses in my analysis from 21 females and 33 males. Almost all respondents described

themselves as of mixed European descent. (See Table 1).³ Their ages range from 19 to 54, with fairly even numbers of people in their twenties, thirties and mid-forties. Some of these people have been using mainframe computer systems since the late sixties and mid-seventies, but most began by using personal computers when they became widely available and affordable between 1980-1985. Given these demographics of predominantly white and American white-collar professionals, and the surprisingly large number of female respondents, I have focused on gender identity in relation to certain responses, rather than age, class or ethnic background.

Techno-nerds, Cyberpunks and One Pissed Novice

This group of people, not surprisingly, is technically proficient with a number of software programs for communication, for graphics and for writing, and some are quite sophisticated. I prompted them to mark self-descriptions in a non-exclusive list, as "novice," "comfortable," and "expert." All but one person described themselves as comfortable on computers, and many as expert; The one novice retorted: "I wouldn't categorize myself as phobic, more like pissed novice!" These words gave me my first hint that, despite the large amount of technical expertise and enthusiasm for computers, a lot of negative feelings erupt in relation to the technology. These people all write on computers constantly--many describing the amount as "daily" and "hourly"--and most people read on the computer for hours at a time, an average of four, but some as much as

10 hours every day. The reality of computer-supported work and its physical difficulties jumped out immediately, since most of these people are computer professionals of some sort.

In response to an open prompt about their profession and vocation, half described themselves as computer professionals, half as academics, and a quarter as writers, either published or aspiring. Some people described themselves as more than one of the categories, because there was a fair amount of overlap among categories; for example, people who are academics and computer professionals. Nonetheless, an "Us and Them" theme emerged between some of the literary types and the technical types, the two largest groups of respondents. One person claims that hypertext "seems to frighten literary people"; on the other hand, stereotypical descriptions like "techo-nerds" and "the artistic lost in cyber-space crowd" popped up as disparaging comments. Surprisingly, people hated the word "cyberpunk," which I prompted for as self-description because of its appearance in popular media. Cyberpunk appears to a contested term that people struggle over: some hate the word, some don't understand and put a question mark next to it, and some identify themselves as cyberpunk with a simple "x."

Men and Women as "Experts" with Technology

Research on computer culture in general has begun to focus on gender and technology, but primarily in terms of who has access to equipment and educational resources. Studies of electronic writing and communication have demonstrated how

gendered practices in the classroom can be reproduced in the electronic tools used to support writing pedagogy.⁴ However, study of specific writing contexts within computer-mediated cultures needs to look at specific gendered practices in relation to writing and literary precedents. To look at specifically gendered constructions of hypertext writing practice, I used gender as an analytical category in two ways: first, to see if women's self-reports about their computer expertise were different than men's; second, to see whether the literary precedents for hypertext writing center on male-dominated canons or include any women writers. My sense from the literature on women and technology has been that women either struggle more with computer technology or have more limited access to technological education. For this focus, I asked: do respondents who identify themselves as women call themselves "experts" as often as respondents who identify themselves as men? I found that half the men consider themselves expert, while only about 1/3 of the women consider themselves expert. Thus, almost twice as many men (17 men versus 9 women) identified themselves as "experts" at technology. Of those men, almost half qualified themselves in some way: for example, they also marked "comfortable" or undercut the word "expert" with an editorial comment. In contrast, Almost all of the women qualified their expertise in some way [see Table 1]. In other words, almost all the expert women qualified themselves, while fewer than half of the expert men did so. The terms in which men and women

qualified themselves, however, were almost identical: for example, they added the phrase "at some things." These findings would support some feminist critiques of gendered communication practices. For example, Cheri Kramarae, Jeanie Taylor and Dale Spender all contend that gendered communication practices, including sexual harassment and the silencing of women, are being reproduced in the electronic media; however, my findings do not necessarily support Deborah Tannen's claims that men and women talk at cross-purposes. Gender difference in relation to technology involves a complicated set of questions and clearly needs future study. A question I would ask is, if these women qualify themselves about technology more often than men, or make more careful distinctions, why, and in what specific communicative contexts?

"Floundering Around in a Sea of Semi-Conscious Links"

The responses also yielded a surprisingly large number of strong, negative reactions about the technology (20 instances), surprising because so many of these people are software designers and technical experts, as well as Internet users. Such experts might also feel compelled to critique technology. People admit to their "frustration" with the technology, to cursing and complaining about reading on screen. These negative comments focus on frustrations and issues with the technology and the program design, and tiresome on-screen reading:

I feel frustrated by hypertext because I want more links, more movement, more screens, less circularity. I would get mouse happy, and click forward to see what was going to happen without reading the whole thing. Then, I would get frustrated and bored if nothing seemed to happen.

Storyspace is interesting, and we have some students working with this program at the moment. Most find it useful for idea-generation and development. But, like all other types of computer program, it has to be learnt and mastered at a fairly sophisticated level before it can be really useful as a tool.

[T]he reading programs I've seen either lack important support mechanisms (like graphical history, graphical navigation) or make them very complicated to use. I suspect my myopia may contribute -- text on computer screen, I find, is **not** as easy to read as a printed book.

These critiques of the tools and other navigational devices are marked by familiarity with the difficulties of program design. There is overt disagreement, however, about what the technology should allow a reader to do, and about how hypertext books should be designed:

As a Role-playing gamer, I can see how hypertext fiction would have some similarities to RPGs, but, like computer Adventure games, lacks the flexibility provided by a good live Gamesmaster and the sociability of playing with a group of friends.

[I have] an interest in looking towards an "ideal interface" for hypertext fiction. I feel that Storyspace is in some ways very limiting, while it suggests that it is, in fact, "open."

[If I wrote hypertext fiction] I would probably use Storyspace, although I think it is Woefully [sic] inadequate. [*Woe* is a hyperfiction published in *Writing on the Edge* 2.2.]

I get easily frustrated and don't stick with [the hyperfiction] very long; I get confused about how to figure out where to go next; don't feel comfortable with Storyspace.

I think we need more order, clarity and form, not less. I want to give readers a sense that they have a better sense of the form of the ideas, the structure of the arguments because of the hypertext

links, not to have them floundering around in a sea of semi-conscious links.

Such disagreements are based on the sorts of reading experiences and computer experiences people bring with them when they read. While the last two quotations emphasize the need for more structure, the first two emphasize more flexibility, openness and interaction in hypertext. This desire for both order and flexibility marks current debates about hypertext program design and how the navigational structures are presented. People mention models for books and reading, like *Adventure* games, their experiences with software programs, like graphical navigation, and their desire for human connection. The program *Storyspace* comes up for critique most often, because it is the most commonly-used hypertext writing program. *Storyspace* is mentioned almost twice as often as *Hypercard*, although many people use both programs to author hypertext. The difficulty with learning and then using *Storyspace* is often mentioned; however, almost all the writers in this group use it nonetheless to compose hypertexts.

Exploring Spaces and Looking for Escape

Common vocabulary, including technical jargon, and metaphors of space and location characterize people's attitudes and assumptions about hypertext. Three different types of common vocabulary predominate: technical jargon specific to the language of hypertext; spatial metaphors

commonly used to describe reading; and the language of fantasy, journey and escape. The technical language of hypertext includes words like:

- multimedia
- lexia
- default links
- nodes
- threads
- paths
- patterns
- maps (navigational)
- browsing

Some of these words describe the structure of non-linear text that has no clear precedent in print: "default links" are author-programmed links from one piece of text to another, while "nodes" are the places in the text a link proceeds from or goes to. Some of these terms do, however, have precedent in narrative theories of non linearity that predate the invention of hypertext technology. For example, Roland Barthes uses "lexia" to refer to text chunks that are arbitrary "units of reading" and "the best possible space in which we can observe meanings" (*S/Z* 13). George Landow points out:

The general importance of non- or anti-linear thought appears in the frequency and centrality with which Barthes and other critics employ the

terms *link*, *network*, *web*, and *path*. More than almost any other contemporary theorist, Derrida uses the terms *link*, *web*, *network*, *matrix*, and *interweaving*, associated with hypertextuality; and Bakhtin similarly employs *links*. (*Hypertext* 25)

However, such terms are not exclusive to theory or technology. Readers apparently use many of these words interchangeably to describe their experience of reading both hypertext electronic texts and printed texts. In other words, "technical" terms, such as "threads," "patterns" and "browsing," which describe the series of links followed between text, or an experience of reading in hypertext and in poststructuralism, also refer to a reading experience of any narrative.

Similarly, readers use metaphors of space to describe both printed fiction and hypertext fiction. Many people emphasize how they "explore" when reading, and make analogies to physical spaces, like a big house, path or cave. Readers visualize the scenes of a narrative in a spatial arrangement, and then explore one "area" at a time. Compare the following examples: the first refers to printed fiction, while the second refers to electronic hypertext fiction:

I think of fiction as a place to visit, like a vacation. I follow *paths* that look "cool," and I [try to] exhaust the imagery of *the location*.

If it's a Storyspace work, I like to look at the *map* first. Sometimes I'll follow a default path first, again as a sort of courtesy, and as a way of getting *the lay of the land*. (emphases added)

The jargon word "path," now a standard way to describe hypertext navigation, is itself a spatial motif used again and again to experience reading as a kind of journey or as one choice of readings among many.

Dream and fantasy metaphors also characterize the feeling of escape people experience and not just in cyberspace worlds, but in any pleasure reading: "I read fiction to get lost, to be mystified, to walk out of my own world." Another person compares hypertext fictions to "Dream hoops." Reading fills a desire for different worlds for some people, and fiction creates an escape from daily life. This desire for escape through reading, in fact, is similar to what Janice Radway found in her ethnography of popular romance readers: women "lost" themselves in romance fictions to escape the pressures of their daily lives. For others, reading is simply a mental place characterized by the metaphors of place and location.

Results (Part II): Reading and Writing Practices.Hypertext Writing and Literary Canons

I look at reading tastes described by respondents to identify literary precedents and possible influences for hypertext writing, and also to trace parallel interests between printed and electronic texts. Not surprisingly, the respondents all named twentieth-century and contemporary fiction writers, many of whom have experimental writing styles considered analogous to hypertext fiction [see Table 2]. For example, over half the respondents mentioned science fiction (29); mysteries and detective fiction together were mentioned by over 1/3 (20). Other favorites included cyberpunk (13), especially William Gibson, fantasy, and postmodern and experimental fiction by authors like Pynchon, Burroughs, Coover, DeLillo and Cortazar. Women writers were cited by almost half the respondents (20), writers like Kathy Acker, Ursula K. LeGuin, Leslie Marmon Silko, and Alice Walker—but rarely with one name appearing more than twice, with the notable exception of Toni Morrison, who was mentioned four times. This suggests to me a much less stable “canon” of modern texts by women in the minds of these readers. Furthermore, most of the women authors were cited by women respondents. This gendered collective sense of literary precedents for hypertext writing is significant, in the sense that Virginia Woolf and Adrienne Rich both argue: women writers need to see their own history and precedents for their own work in order to develop their own confident

voices. Furthermore, if more writing by women is recognized as "hypertextual," a broader range of conventions might be invoked. And finally, as more women write and publish in hypertext themselves, they will bring a wider range of literary precedent and writing experience to the current canon of hypertext writing. While this is hardly an exhaustive search of the literary influences on readers and writers, I do want to emphasize that Landow and other hypertext critics have already argued that hypertext writing and other literary practices *already* explode the traditional canon of white, western and predominantly male-authored texts. My data about literary precedents reinforce how literary canons are socially-constructed human activities.⁵

The Canon of Electronic Fiction

The existing canon of electronic literary texts is small and dominated by Eastgate Publications (see Table 3). The hyperfiction most cited was, of course, Michael Joyce's *Afternoon*, published by Eastgate in 1988, in part because I asked people for the first hypertext fiction they had read, and Joyce's was the first published hyperfiction available. People often mentioned the *Adventure* interactive fiction games, and several people mentioned Carolyn Guyer's *Quibbling*, Guyer and Martha Petry's *Izme Pass*, Stuart Moulthrop's *Victory Garden* and earlier works, and expanded books like *Annotated Alice*. Every other title mentioned in Coover's cover story in the *Times* was mentioned at least once here as well. Most people still get fictions from Eastgate

Publishers or sometimes from the Internet, where self-published works appear regularly on Netnews groups or on the World Wide Web. Many texts are still passed by hand or electronic mail from one person to another, however. One of the first clues I had that these people all really do know one another is that most of these people got their first hypertext from Michael Joyce, or from a friend who knew Michael Joyce, or Jay Bolter or Nancy Kaplan or John McDaid or Carolyn Guyer, or others who have run seminars, offered workshops, given talks and taught courses about hypertext writing since the early eighties when the publishing of hypertext texts (not applications) was just beginning. Several writers also founded a group called TINAC Collective [Technology, Intertextuality, Narrative And Consciousness] in 1987 that is still actively supporting the artistic use of network software like hypertext. The significant number of times that people mentioned each other's names, or referred to one another as people they knew, or had met at conferences, confirmed that these writers are a close-knit, collaborative reading/writing group, many of the so-called "Eastgate School," who share texts, correspond regularly, and learn about new publications and creations by word of mouth. Like the literary clubs described by Ann Ruggles Gere and Laura J. Roop, these writers consider themselves on the margins of mainstream literary culture. Through their professional and social connections, they have made a space for themselves on the network to collaborate, to read, to

argue, and to present their work to one another in a supportive and pleasurable environment.

Fun Reading at Work and in the Tub

Almost everyone in this group reads for pleasure fairly heavily: anywhere from 2 to 10 books a month. People use similar reading processes for print and electronic media, but most people distinguish how they read particular texts based on other external factors such as location. Most people's reading styles could be described as "multi-linear," which is precisely how critics often describe the reading of hypertext. People read several books at once, picking them up over a period of time or in various places, like the office, on trains, in bed. Some people distinguish between types of reading based on location: "I read a great deal in connection with my computer work. Outside of that I read only on vacation and in the bathtub." This kind of distinction can't be as easily made with hypertext, although one person specifically wished for the day when s/he could read in bed, fall asleep, and not worry about the laptop getting damaged when it fell to the floor. People carefully distinguish how they read these multiple books, however. Most people insist that they read fictions sequentially and faithfully, while the minority skip around and compare between books. For example, one person skips back often, but never reading ahead: "I rarely read fiction out of sequence the first time through, although I often jump back to check on things." Whether someone finishes the book or not also seems to be a

matter of individual taste. Those who religiously do not skip around in books, and those who always finish books, often suggest their implicit respect or trust for the author. They believe that books should be read as intended by the writer, such as in this comment: "I'll follow a default path first, again as a sort of courtesy." One person simply admits that "I feel committed to finish the book, however long that takes." Another person reads print and electronic media exactly the same, but delights in the distinct advantages of reading on screen:

Start to finish, same as I do with printed material, only I can read it on my PC screen while I am working. I do this while running test code on my job or while waiting for mainframe resource to run code, as well as when I am stumped while coding and need to pick my mental nose.

Others disagree and assert that printed fiction and hypertext fiction should be distinctly different reading experiences. One person voices a complaint echoed by several other readers:

I've since seen a number of self-proclaimed hypertext books, all of which, however, are ordinary fiction placed in an hypertext framework. That doesn't make any kind of sense to me, so I've not investigated it further.

Other people pointed out how hard it is for them to distinguish pleasure reading from work, because my question asked them what they read specifically for pleasure. This example represents one of several responses that cite problems with the survey's questions: "A distinction that just doesn't work for a teacher of writing and literature." Academics in the arts, in literature and in science often turned these questions back to me and pointed out that the distinction between reading for work and reading for pleasure just isn't meaningful for them.

Circular Processes and Multiple Readings

When specifically comparing their reading processes with hypertexts to those with printed texts, some people describe reading hypertexts as reading in several stages of depth, during which they get increasingly more comfortable (making fewer default choices) and can explore more text. This succession of readings is like a spiraling into the text, deeper and deeper, but without ever reaching a bottom or ending. Circularity seems to be a shared experience or way to describe that experience when reading hyperfiction.

One reads this stuff with a constant awareness of intersecting and immanent possibilities. I back up a lot, try alternative pathways. It's also more fun to read in company.

It's a long-term process. The first sitting is usually a rapid-paced movement to try to scope out the shape of the text and gather impressions and fragments of ideas. Then, a day or so later, I usually come back and test out my conceptions of the structure. I'm usually wrong.

I assume you mean "read in" and beyond that I assume you mean "read in extensively." As a kid I read 3 Choose-Your-Own-Adventure Books. . . . The first "computer-based" h-text fiction I came across was Afternoon by Joyce, but I didn't read very much of it. . . . I have never read a hypertext "continuously" in more than one sitting. I've started Victory Garden and Izme Pass each a couple of times, but never in a short time span (a week, a month).

I skip a lot, follow up links rather than paths, explore the space a bit first, and then settle down to more strand like (contour-like) readings.

The more I enjoy reading something, the more likely I am to ration my reading of it: reading a real stylistic treat is like eating chocolate truffles: downing too many of them in one sitting is just a

waste because you tend to get sated or even sickened too quickly.

In these accounts of reading hyperfiction, the contours and structure of the text, hazy at first, become more distinct after several sittings with a hypertext work. Some readers are more intrigued with the possibility of such discovery, while others are less willing to spend the time doing the multiple and sustained readings that most hyperfiction seems to require. Thus, these discovery processes and reading practices for "the reader" of hypertext range from adventurous ramblings and multiple readings that continually redefine expectations, to one-shot readings, to indulging oneself now and then. The turn of "I assume you mean" points out the careful distinctions some readers need to account for a reading experience. After all, "I read it" usually means "I finished it" in everyday talk.

Self-Descriptions of Composing Processes in Hypertext

At least twelve writers of hypertext correspond with me, many of them calling what they write "not fiction," and at least six of these people are published writers. Many others wrote at length about their interests in trying to write hypertext, an interest that I share.⁶ Thus, despite the critiques of the software and the disagreements about what hyperbooks should look like, the enthusiasm for writing in hypertext is widespread and goes beyond simply reading

electronic books and hyperfictions. One person accurately describes this phenomenon: "Hyperfiction interests me more as a writer than as a reader (as I suspect is the case with most people...)." The structures of Storyspace offers many of us compositional possibilities that are hard to resist, despite the frustrations with reading those same texts.

I use open-ended questions that prompt long descriptions from writers about their experiences. For example, I asked one writer: "How would you describe your writing process, from conception to completion, of creating a hypertext fiction?"

A process of synthesis, of establishing blatant and latent connections between my words and the words of others, and of working out these connections with more than an eye toward the coming intimacies I envision with my readers.

This writer offers self-conscious responses about the "synthesis" and "connection" processes for writing hypertext. S/he seems to assume that the texts will find their readers, who will have an "intimate" relationship with the text and implied author. This writer enjoys both the sense of authorship and the challenges offered by hypertext to compose a textual structure:

[R]egardless how much ostensible freedom the reader is allowed, the writer is yet com/imposing an (amorphous) structure for/on the reader by virtue of links and node content (and this, it seems to

me, constitutes one of the challenges of composing good ht fiction).

S/he takes pleasure in creating multiple paths with these structures of links and nodes, and even within the sentence's syntax. Hypertext authoring software has helped a number of people write the way they want to write. In other words, the challenge of choosing meaningful segments of prose ("node content"), which then connects with a structure of links, provides a creative writing environment for some writers who welcome both a non-linear and explicitly visual medium.

Several people testify that their discovery of hypertext writing as an epiphany or watershed for them as writers, exemplified in the following three descriptions of writing in Storyspace:

I read 'Afternoon' and Bolter's Writing Space and realized that this was the way I wanted to write. I won't go back to churning out reams of paper unless subjected to the cruelest coercion.

For years, I've written essays, reviews, and articles which I believed to be creative, but not quite the Real Thing. I pushed away writing fiction, believing I could not do it. . . . When Storyspace came into my life, I realized that this was what I'd been waiting for. This was a way to create what I'd been trying to find in so many other ways. The writing started coming in a way

that could not be refused. At that point, I couldn't NOT write.

Yes, [I write,] but mostly in the past tense: screen plays, short stories, abortive beginnings of novels. I tend to freeze up horribly, whereas writing [my hypertext fiction] felt like playtime at the zoo. I always felt like I was just monkeying around with bits and pieces, never like I was writing "real" fiction.

Based on these comments and my own writing experiences, I believe the medium encourages, in some writers, a playfulness, a willingness to risk incomplete and non-linear writing processes with an evolving text—all writing processes that have not necessarily been encouraged by other media or computer word processing. In this way, hypertext marks a transition from one mediating writing tool to another. Another respondent who has not yet written anything in hypertext speculated on this very issue of transition:

I think both writing and reading h-text fiction would demand non-linear ways of thinking which we are not taught or encouraged to develop [sic].

Based on the comments of these few writers, it follows that some writers might benefit greatly from just such an opportunity—to write without the pressure of traditional closure, argumentative style or of the border limitations of

the printed page or computer screen. In some composition classrooms, hypertext student writers have already written with enthusiasm.⁷ The educational potential of experimental hypertext writing also fits well with teaching experimental discourses, especially multiple personal voices, rather than the strictly academic prose of most college writing classes (see Bridwell-Bowles).

People also reminded me of the familiar limitations of computer compositional processes. They still need to combine these processes with other strategies, particularly when the resulting text is still a printed page:

I do write on the computer almost exclusively. I only use my pen when I am on planes, in class, or away from the computer. I almost always have to print out drafts after I've written for a few hours so I can get an idea of what really happened to my words. Mostly I locate areas that need reworking and then I go back to the computer to edit. I refer constantly to the hardcopy when I am editing. I tend to repeat sections or copy and move sections and then forget where they are duplicated if I am not in possession of a hard copy.

I have a hard time editing my writing on a computer screen. I edit, revise, and rewrite by printing my document to paper.

Some writers feel more comfortable than others using a completely electronic compositional process. Many of the writers I've quoted extensively are published writers of Eastgate fictions. For the rest of us, the non-linear structure of hypertext and the erasure of a printed, linear text as the end goal of composition could facilitate teaching electronic writing and other literate practices in our classrooms. And yet we can't forget the problems of navigation, cognitive overload and basic unfamiliarity with computer compositional processes that may still plague our students.

The Obvious Response: "What the Hell Is It?"

Since almost a quarter of my correspondents (12) are actually frequent writers of printed fiction, non-fiction, visual art, or poetry, I explore how they perceive the response to their writing. Some of them are also published writers of print texts. But they are an amazingly self-denigrating bunch, and their comments reflect the uneasiness of people who see themselves as writers who don't yet have a wide popular audience for their compositions. When I asked these writers how other people respond to their writing, I got some entertaining answers:

Haven't actually tried to attract any attention to my feeble efforts so far.

[They ask] Does it pay?

Puzzlement; disinterest; mild disdain (much as if you'd said you write poetry).

The obvious: "What the hell is it?"

Hypertext fiction evokes a "knee-jerk" repulsion from my student and faculty (fiction writing) colleagues and I understand that reaction entirely, as h-text is not a concept that can be superficially explained.

[My works have received] far more [attention] than they deserve in popular media -- may it last. Though I have not found the academic/critical community all that friendly to the idea of electronic art. Hyperfiction is one more step toward a redefinition of artwork as communal action (more like craft than art), work held in common by groups of reader/writers rather than work disseminated in a market controlled by information capitalists and hierarchically sanctioned Authors.

The human connections highlighted in these comments, as well as the self-denigration and implicit alienation from positive response, underscore how hypertext writing needs to be a

collective activity. Despite the enthusiasm for hypertext writing, and the support and collaboration of participants in these valued literate activities, the writers also seem aware that they are still seen as outsiders by the majority of the fiction reading/writing public, as well as by academia. Women writing hypertext fiction see themselves as even more marginalized, with works by women receiving a tiny percentage of the small review space in popular periodicals already available. These writers are just beginning to gain public recognition and an audience—if not in academe, then in the readership of the *Times*. Most importantly, they are negotiating their own writing interests and practices in the wider and more public medium of the worldwide electronic network. The next chapter looks at these negotiations and the importance of computer-mediated communication for hypertext writing communities.

Methodological Notes

In the questionnaire, I included five sections of open-ended questions to generate a detailed self-report about writing technology. Many questions came out of my own experiences from participating in academic discussion about hypertext. "I. About You" asks for demographics and details about a respondent's interactions with technology, such as levels of expertise/comfort with the technology and what programs are used the most. "II. About Reading Printed Fiction" asks questions about reading styles, practices, and the authors and genres commonly read for pleasure. "III.

About Reading Hypertext Fiction" asks what hypertext novels they have read, where they got them, and how they went about reading them. "IV. About Writing Hypertext Fiction" asks about hypertext compositional processes, presumed audiences, and responses to their hypertext fiction or other writing. "V. About This Survey" requests permission to quote them anonymously and to contact them for a follow-up interview. Appendix A reproduces the revised set of questions that I distributed electronically. I posted them to at least four subscription-style professional discussion lists where hypertext writing and technology is a common topic of discussion (MBU, TNC, FIST, and VOICES), and to at least three Netnews open newsgroups that focus on hypertext (alt.hypertext, alt.cyberpunk, and alt.interactive.fiction). Based on the approximate readership of the discussion lists (not including Netnews traffic), the questions were delivered to approximately 800-1000 people. People repost messages freely, however, and these electronic discussions have overlapping readership, which makes an exact number difficult to determine.

When I sent these questions as an electronic mailing, I titled it "Hypertext Fiction Survey." However, the methods used to prompt response (asynchronous electronic communication) and the fact that I know many of my respondents and have had on-going conversations with many of them, all make the term "survey" rather inappropriate for what has emerged as a descriptive and qualitative study. The

qualitative method, called constant comparative, that I use to analyze these responses, yields key themes; when combined and triangulated with data from electronic discussions and my own experience as researcher, a thicker description of hypertext practice emerges.⁸ In a sense, however, these preliminary responses are interviews in that they are conversations with me and with other hypertext readers and writers that spill into other parts of our lives, like meeting up at the Computers and Writing Conference each May.

One of the first questions I thus had to ask myself was: What kinds of responses are these? Are they more like questionnaires, case studies, or interviews? Are they written or spoken, or some combination of each? What methods of conversation analysis or of textual analysis do they warrant? For example, a change in conversational footing (Goffman) points to areas of tension or conflict, as when a respondent calls attention to my question by embedding another question in their answer, like "what do you mean by creative?" A Bakhtinian analysis traces the multiple voices in individual responses, in which people often cite one other's words and create hybrids of formal academic speech and slang. An ethnographic conversation analysis might best dramatize the interactive nature of computer-mediated communication. And discourse analysis yields commonly-used structures of language, such as metaphors. I ended up using all of these methods. We know that electronic writing over the Internet often has the spontaneous and ephemeral quality

of spoken conversation. On the other hand, these messages are also written texts, and some people take more time to craft a written response than others. The responses, because they are one-to-one e-mail exchanges, are more like letters and on-going correspondences with me than static written texts or spoken conversations.⁹ These responses are long, complex and full of fascinating self-descriptions of reading and writing processes, which I have only begun to analyze here. TABLE FOUR in Appendix B summarizes the inductive categories I eventually derived from my comparative analysis. As part of a follow-up study of hypertext writing, I am triangulating this data by cross-referencing them with discussions on at least two lists where hypertext writing is regularly discussed, as well as with my own experience as a reader, critic and now beginning writer of hypertext. Based on my qualitative methods and analysis, I choose to call these responses to my questions "correspondences" with these particular hypertext fiction reader/writers.¹⁰

The Interviews of Hypertext Reader/Writers

In the interviews, I discuss questions raised by other parts of this study and conduct a form of inductive sociological research by applying some concepts derived from grounded theory in my account of hypertext readers and writers. This method, first described by Glaser and Strauss, allows me to look for categories and theoretical descriptions of phenomena rather than test an objective theory of response opposed from without. Specific methods used in this study

for interviewing and collecting data are adapted from Burgess' *In the Field* (144-145). Specifically, [1] I conduct single, open-ended, interviews to discover the other person's ideas, or self-reports, on the subject of hypertext; [2] I use "multiple strategies," or data triangulation, by combining these interviews with participant-observation on the network of group discussions, and a reflective account of my own work and participation with hypertext. Since these interviews of hypertext readers and writers are all conducted over electronic mail, as one-time asynchronous communications, describing the dynamics of the "conversation" offers some new challenges that require an adaptation of existing methods for analyzing embedded discourses. In addition, I study the group discussions of electronic literate practices from electronic lists and newsgroups as a form of group interaction and on-going discourse community formation within the broader network communities. My goals are to describe as accurately as I can this community of hypertext fiction readers and writers, to interpret the goals, tensions and boundaries of this group, and to reflect on my own experience as a hypertext researcher on the electronic network.

To conduct the interviews, I followed several steps. I first obtained names of clients from a publisher of hypertext fiction, and I also posted a request to electronic lists where willing participants might lurk. I then prepared an introductory draft of the questions and a letter requesting

participation; in many cases, I made face-to-face, informal contact with the potential participants at professional conferences. About half my respondents ended up being colleagues or acquaintances; others struck up an electronic relationship with me after responding to my questions. In the letter, I explained my goals and the time commitment involved for respondents (15-20 minutes initially and the same for subsequent communications). I initially sent these general, open-ended questions to five people about the person's reading practices, use of computers for reading and writing, and reading of hypertext fiction compared to printed fiction. After reading the preliminary pilot responses, I then rewrote the questions and sent them to electronic lists and Netnews newsgroups. I collected responses for 4-6 weeks (Nov. and Dec. 1993), and also requested permission to conduct follow-up interviews. I have begun corresponding with several people whose reading and writing experiences will provide case studies to support the data presented here.

Data Analysis

I analyze these responses as qualitative data using the inductive methods of developing hypotheses and comparisons described by LeBlanc and Burgess—scanning responses and deriving emerging categories and comparisons.¹¹ Each time I read through my collection of responses for data analysis and comparison, I developed an on-going list of the emerging categories. I continually modified and refined the categories, and then reduced the data of 54 responses by

drawing out instances of these categories and by counting instances of specific key words and phrases (See Appendix B for the reduced data in Tables 1-5). Since all information was in electronic format, I adapted many of Burgess' suggestions to a computer, for example, searching, sorting and categorizing sections of the responses according to different criteria, looking at the results, and then recording the value of such a category. The electronic medium generally offers new challenges for interview protocols—for example, real-time synchronous interviews can be done as well—and for data collection and analysis. These methods and results are themselves important subjects for more study and critique.

Notes

¹See Lanham for a discussion of this juxtaposition of words and images and its significance for a postmodern writing pedagogy.

²Stuart Moulthrop says that hypertext fiction sales are now in the thousands in terms of sales by Eastgate Systems, the leading publisher of hyperfiction.

³Four people responded and requested information from me about hypertext fiction, but didn't answer any of the questions, so I have excluded their responses from this analysis. I still consider them respondents, however. I might add that I have no way of checking gender, so I rely on self-report. One person responded "no thank you" to gender.

⁴Computers and Composition studies that look specifically at gender include Selfe and Meyers, Selfe "Technology in the English Classroom," Jessup, and Hawisher and Selfe, "Voices in College Classrooms."

⁵Ladow argues, for example, that the electronic media is automatically exploding the canon. See *Hypertext*, 149-160, the section titled "Reconceiving Canon and Curriculum."

⁶Several of these extended correspondences are with people I know and whose writings I have read. I quote them at length here because these self-descriptions will form the basis of future case studies.

⁷For studies that cite the success of hypertext writing in the composition classroom, see DiPardo and DiPardo, Moulthrop and Kaplan, and Mulvihill.

⁸See especially Burgess on data analysis. See also Geertz.

⁹There is little published precedence for this kind of electronic qualitative analysis, though many studies are currently in process. Similar responses have been called "asynchronous communications" and "electronic interviews" in studies by Nancy Baym. In academic forums such as conferences and electronic discussion lists like MBU, people in composition studies are beginning to refer generally to "electronic ethnography" as the qualitative, triangulated analysis of data from interviews, contexts (assignments, chatter), settings (like classrooms and MEDIA MOO) and participant observation on the network.

¹⁰In a follow-up study, I plan to conduct in-depth interviews with ten to fifteen people to obtain more data, thicker description, and additional context, particularly

about compositional activities and group practices that aren't represented by one-time, or even multiple interviews. I have dubiously begun to save, organize and link all this data into a hypertext document using Storyspace.

¹¹See also Glaser and Strauss, and Geotz and LeCompte, on constant comparative methods of inductive data analysis.

Chapter Five

Social Arts and Discursive Acts: Interventions and Hypertext in Network Discussion Lists

"When we read from a computer, it is much, much harder to get into that 'dream space' that narrativity depends so much upon" As interactive reader/authors of this communal space, we're bound to break down the deceptions of any narrator, even if they're writing non-fiction. The narrative in this space, as in hypertext, is divided into individual, smaller spaces; here we call such spaces "mail messages," but we could potentially name them "nodes" or "writing spaces." The idea is the same: a partitioned text, a deconstructed text; in this case, a collaborative text. In this space we also deconstruct time: the conversation shifts back and forth as different people reply to messages that interest them (Simon Rakov, Vassar College '92).

(TNC, 25 Mar., 1992)

In this description of electronic discussion lists, Simon Rakov describes the form and function of messages on the academic electronic list Technoculture. Rakov, a college senior in a hypertext writing workshop taught by Robert

Coover, initiated a discussion of networked communication and hypertext with other members of an interested community—hypertext writers and critics Mark Bernstein, Carolyn Guyer, Michael Joyce, Nancy Kaplan, George Landow, Stuart Moulthrop, Allucquere Rosanne Stone, and many others. With careful attention to academic convention and authoritative theoretical discourse, Rakov first quotes from a classmate's paper on hypertext [in the first line of text] and then extends the comparison to networked computer-mediated communication as hypertext in form. A key concept of current hypertext writing aesthetics emerges from this comparison—that hypertext lays bare, even “deconstructs” its own formal structures and undercuts the dream world of a typical reading experience. In direct contrast to Coover's own metaphoric comments about the dreaming mind exploring hypertext, Rakov argues in this public forum how hypertext *undoes* the dreaming metaphors for reading experience. His comments emphasize how academic debate, intellectual posturing and consensus-making all take place on these lists.

As a genre, a series of electronic discussions might resemble a hypertext on the surface. The features of networked discussion include similar formal elements like threads of topics, multiple temporal sequences and individual segments of text that appear in discrete spaces. Networked discussion, however, have unique formal features as well, such as the subject and response structures in headers, the names, titles and affiliations of participants, and the

embedded gestures, like in on-going, overlapping correspondences, of social connections and interaction. Thus, network communication is marked by mixed modes of interaction, response gestures like changes in footing and the sheer speed of interaction. Some hypertext reader/writers might agree that, when read, electronic conferences look like collaborative hypertexts in form and structure. However, hypertext is at best an analogy for networked communication in action. Those participating in the conversation experience a hybrid of text and talk, as I will demonstrate in the following section. And finally, as I explored in the previous chapter, current hypertext aesthetics are not settled on the precise nature of hypertextual structures and reading processes, or on the degree to which they are self-reflexive, postmodern texts.

This chapter focuses on electronic mail discussions about writing practices and computer-mediated communication that take place on several professional electronic discussion lists, commonly called electronic conferences. These discussions have the flavor of conferences in that they cover topics about theory, aesthetics, and uses of hypertext, as well as broader cultural and political issues surrounding electronic spaces. I use these conversations to trace how the construction of an electronic writing community is formed, from moment to moment, through such public discussions, and how that constructed image of community continually includes and overlaps with many other cultural

discourses. Some might want to argue that Rakov's statement gives evidence of hypertext's "democracy" in action as a lowly undergraduate wields theory at published writers and critics and disagrees with his own teacher. I want to argue instead that these discussions point to precisely the power structures of this communicative social context and to negotiations for meaning and consensus in professional academic life. Despite the bonds of community apparent from a fairly coherent set of shared commitments to electronic writing and communicative practice, achieved through professional connections as well as the human connections over the Internet, contentious disagreement also structures these discussions. This activity, in fact, indexes the contentious, contextualized transactionality that Phelps describes as the social processes of authorship and audience ("Audience and Authorship" 155). Not surprisingly, some discussions on public lists include and overlap issues brought up privately in the correspondences discussed in Chapter Four. These issues include hypertext's relation to print texts, the deconstructive theories that emerge as models for hypertext writing and the impact of electronic writing on composition processes. The group discussions, however, while including many of the same people, enact a social forum and provide a broader context to the social and political realms that surround hypertext literate practices.

Academic Communities Online

I begin by analyzing how community has been established on three different discussion lists: Megabyte University [MBU], a list for teachers in Computers and Writing; Technoculture [TNC], a list for people interested in theories of culture and technology; and Hi-Pitched Voices [HPV], a list for women who write hypertext works. While MBU is a rather large and established list with approximately 580 subscribed participants and countless others who read it as a Netnews newsgroup (bit.listserv.mbu-1), TNC and HPV are both rather small groups of approximately 40 people each, many of whom, like myself, participate on-and-off in the larger MBU list.¹ Regardless of size, the shared topics, similar professional commitments and common goals give the people in an electronic conference a sense of coherence. At the same time, I demonstrate throughout this chapter that the social spaces of participants' professional lives (which are for the most part academic or literary) are not only reproduced, but actually amplified by the electronic social spaces formed on these lists. In fact, academic debates are carried on rigorously and sometimes ruthlessly in these forums. These informal discussions frequently become a forensic activity where participants use electronic personas to "speak their minds"; in the spirit of good debate, the consequences of such activity carry over into their "real world" human relations as new coalitions, but with few hard feelings.

Though not as popular a subject as classroom-based electronic conferencing for pedagogical purposes, academic discussion groups have been the subject of several recent studies. For example, in "Testing Claims for On-Line Conferences," Selfe and Meyer demonstrate dominance in the conversations on MBU that dramatize the gender and power relations in discussions.² MBU, founded by Fred Kemp specifically to support those who attended the Fifth Annual Computers and Writing Conference in May of 1989, has served as a forum to connect academics interested in computers and writing for five years. Kemp thus began MBU as an academic forum "intended not as a chat net or a technical exchange, but as a continuing discussion regarding important aspects of an emerging field, Computers and English" (quoted in Selfe and Meyer 171). Selfe and Meyer describe MBU participants as self-selected and explain that "Megabyte participants are professional educators who choose to participate in the conference because of their common interest in composition studies. They are scattered across the country, but many members know each other fairly well because of conferences and other professional activities" (172). The numbers on MBU have grown, as well as its access (it now exists as both a subscription listserv and a Netnews newsgroup, involving potentially thousands of new readers). Despite its size, however, MBU remains quite focused on the computers and writing community whose shared interests include computer

technology's impact on writing classroom and on the profession of composition studies generally.

Some of the interests of TNC members overlap with those of its "parent" conference MBU, and the consensus-building process can overlap as well due to cross-over discussions where the same participants bring ideas from one list to another. For example, electronic publication is an academic issue and context interwoven into many of these discussions on both lists. John Unsworth, editor of the first electronic journal, *PostModern Culture*, describes the current situation for academic publishing:

Here's one idea for a practical change in the way we do things, made possible (but by no means made inevitable) by networked communication—it's something we talk about at the end of the Centennial Review essay, which I'll quote here. The "five-year window of opportunity" refers to the projected schedule for the privatization of the nets.

. . . .

"Finally, we would like to see academic institutions acknowledge the value of more informal contributions to scholarly dialogues: the impediment here is not one of record-keeping or of identifying authors, but simply of requiring that peer evaluations take such contributions into

account. If we can do these things, we will have effected a very positive and concrete change in the way we use, value, and reward intellectual labor."

I don't know whether this qualifies as "info-socialism," but it is an attempt to grapple with the existing state of affairs in academic publishing, tenure-and-promotion, etc. and suggest a direction we might follow in the immediate present and over the next few years. Yes, we do need free access to terminals, e-mail accounts, etc.-- Cleveland's Freenet is one possible model for some of this; the good old public library is a model for some of the rest of it. (TNC, 15 Mar. 1992)

Unsworth invokes a whole range of academic structures and issues of tenure and publication, as well as wider public issue of access to technology such as the "good old public library" as the preferred model. Interestingly, he quotes in the middle of this long message from his own print journal article that itself argues for self-publishing and other nontraditional uses of the network, and then argues for mainstream academic acceptance of that very activity; he thus blurs and integrates academic conventions of text and talk. Many people like myself who were reading several lists carried on these paradoxical discussions about more open

publishing structures and issues of tenure that contextualize our lives as people who study and write about technology, literacy and culture, but who still pursue academic jobs, publications and tenure.

George Landow also took part in this discussion of academic publishing and then reflected on the experience in print. He suggests that, as a participant-observer on TNC, such conversations "transform this kind of electronic textuality into a discourse without a center, or better, a discourse with a traveling center, one that changes shifts, disappears, and reappears according to the interventions—the questions and comments—of individual participants" ("Samizdat Textuality" 10). Such activity, he concludes, is exactly like a hypertextual link, while the individual post, like the individual text, has its own order and focus. "The conference has only the unity implied by its stated subject and it has that unity only as long as the contributors choose to adhere to it and not to some apparently peripheral one" (11). His comments in this article are derived Rakov's ideas and from the same discussion in the early days of TNC. His print essay will in fact help solidify and disseminate these hypertext network aesthetics. As his comments suggest, however, he selects and then reads a few posts exclusively as a series of texts rather than as conversations, texts with no embedded, non-textual context whatsoever.³

Network conversations, like any form of communication, must be analyzed as hybrid forms and as mixed modes of

interaction. Methods derived from communications research and cultural studies can yield a much richer description of context. For example, Baym analyzes Internet discussions of soap operas that focus on the communal interests, shared knowledge and sheer pleasure for networked fans. She uses among other data, a large corpus of posts, which provides "structural information about the numbers of participants, the rates of participation, and the sites through which they gained access. Since the language of the posts indexes cultural meanings, they also reveal the dynamics of the group's culture building" (7). Baym analyzes computer-mediated communities for their rich linguistic resources and talk-oriented features and communicative contexts. She gives an excellent overview of how such data might be used to study computer-mediated culture:

Interviews with users illuminate features of the groups they recognize as compelling, as well as those they see as problematic, and also allow insight into individual uses of the group. . . . Analysis of the possibilities and limits of the computer network and its accompanying software lends understanding of each group's possibilities. Analysis of the topics of discussion, in this case soap operas, in terms of thought and discourse practices rather than abstract issues, also leads to insight into the community. Finally, the

nuances of language in each group provide a window into the interests which motivate and sustain participation in each group. (27)

Baym suggests that formal structures like subject lines, the amount of participation, and the language and meanings of specific messages can all provide useful ways for unpacking social features and contexts. While Baym's fans draw upon shared knowledge of soap opera plot lines and characters, my academic communities draw upon shared professional conventions and discourses. For professional lists, then, we must trace how people interact, look at the specific topics and how they shift and place that activity within the context academic culture and specific debates. These analyses, embedded in the individual voices and responses of participants, portray the experiences of academic communities on the electronic network.

To demonstrate the heightened sense of debate on academic lists, I look at several highly politicized debates about critical reviews of hypertext, gender politics, and academic politics. I find that, in light of the posturing or even flaming that inevitably takes place, and the sorts of personas used, a heightened and aggressive kind of *intervention* often constructs and marks these discussions. These interventions on the network are several key "moments" in which a strategic change of topic, tone or audience precipitates a change in the communicative context, and then

realigns the group's sense of community. Interventions in these environments are communicative acts with the primary aim of shifting and bringing attention to power relations within a specific discursive context.⁴ These interventions have limited impact, since the people in these spaces are overwhelmingly white, white collar and white-bread American academics and students. Several key debates I witnessed as a participant, for example, focused on specifically feminist politics that emerged as clashes between white feminists and feminists of color, and between feminists and the academy in general.⁵

I see these debates *both* as computer-mediated public professional conversations and as the written exchange of authored texts. For example, a conversational thread such as "hypertext," when taken as a whole, is a co-authored exchange of ideas in process. At the same time, however, the messages themselves include a limited range of individual gestures, like a signature of "Hey Joe," that participants use to establish electronic identities. Some of the emotion of face-to-face communication occurs through tone and in message interactions. People debate hotly the issues they care about, they change topics to suit their purposes, they get angry and "sign off" the list, and groups of people, often with a "leader," branch off to form new electronic spaces. In fact, both TNC and HPV were formed this way: Stuart Moulthrop and Anne Balsamo began TNC to let people discuss explicit theory and cultural critique. HPV, formed by

hypertext writers Anne Johnstone and Carolyn Guyer, began as a small exodus of women leaving TNC to discuss specifically their writing and collaboration online. I have participated on all three lists myself since they were formed in 1992-1993. The discussions that I focus on below are ones that I observed and often contributed to, and that I later reflected upon. I can draw upon both the immediate and the retrospective perspectives as a participant-observer.⁶ Furthermore, we all draw upon other contexts that serve as backdrops to these conversations, such as our actual academic conferences, our experiences in authoring hypertext applications, and our reading of key essays and other writings by one another. My narrative accounts interpret how these conversations have evolved over time as a whole and become stories, voices, self-reflection and analysis.

Interventions On the Net

Narrative # 1: "Dear Boys . . ."

A mere three days after the Technoculture discussion list came to be, a long and carefully crafted message entitled "Dear Boys" was posted as a feminist intervention by co-founder Anne Balsamo and visitor Angela Wall. After alluding to various definitions of "technoculture," which had been a subject of discussion, the message (slightly edited) read as follows:

From: "Stuart A. Moulthrop"
<sm51@PRISM.GATECH.EDU>
Subject: Dear Boys...

I'm posting the following for Anne Balsamo and Angela Wall. They ran into some technocultural difficulties.

Re-posted message follows:

Dear Boys....

So many questions, so little time. We'll begin with the first one: "What is TNC?"

1) TechNoCulture was, first of all, a casual tossed-off comment by Anne. More to the point, TNC is the handle for a conversation that includes what can only be described as masturbatory e-jaculations of pretty-boy techno-speak. (And joe accuses A. Ross of "flasher" talk? But, hey, we understand psychoanalytic projection. We also understand how the "*pole*mic would wear thin after a while.")

. . . [2 paragraphs omitted]

We would begin with a question alluded to by RG "who is posting?" This is to ask, what cultural identities are you screening when you post? Do you assume the screen is a mirror, reflecting an image of your- self as your ideal reader? What notion of

audience is at work here? After reading 20-odd postings, we began to understand that some contributors assumed that their readers would appreciate and endorse gratuitous comments about A. Ross, and Kim Basinger's legs, and disparaging comments about a certain mode of cultural criticism and scholarship. What cultural conditions enable them to make such assumptions about the readers of this list? How can one be so dismissive of the broader social and cultural network within which their network postings make sense? What is the distribution of these clever comments and uninformed criticism? What about the bodies of those who interact through these channels, the cultural identities they embody, and the bodies they are connected to... (colleagues of A. Ross, future employers, tenure committees)?

And one final question for now: Why do we have to regress to the mid-1970s in our discussions of language and power? Once again, feminists are put in the position of having to remind people that gender (like race and class) is only invisible (taken-for-granted) for those who are privileged by it.

And since we started with a parlor-game, let us suggest additional questions more in keeping with the topic of this list: What is the difference....
....between a flame and valid criticism?
....between posturing and postmodern language games?between electronic writing spaces and the phallacy of the blank page?

And who said feminists have no sense of humor? :-)

Anne Balsamo

School of Literature, Communication and Culture Ga
Tech

Angela Wall

Cultural Activist at Large.

(TNC, 16 Mar., 1992)

This lengthy message was written in response to the conversations that had been taking place for the past several days. Since it was reposted by Moulthrop and had the subject "Dear Boys . . .," it initially looked like a friendly nudge—"Hey guys, cut it out." The serious tone and scathing critique, however, brought the jokes about Andrew Ross (a well-known communications scholar) to a halt and brought out a number of feminist lurkers for comment. Balsamo and Wall assume a lot of shared academic knowledge with their readers

about feminist theory, language theory, and postmodern critique of technology. Balsamo was directly confronting other differently-minded colleagues, like Richard Grushin ("RG" in the message) who were present in the online audience. In short, Balsamo and Wall made a classic, academic-style intervention with a clear sense of audience and a pointed feminist critique of male-centered postmodernist discourse (the "masturbatory e-jaculations of pretty-boy technospeak").

Another feminist response followed two weeks later.

From: "Deborah HEATH" <heath@LCLARK.EDU>
Subject: situated knowledges

On Wed, 29 Apr 1992, Diane Greco wrote:

>With respect to features of medium which might
lead to different sorts of social organization:

>It seems as though social organization depends on
where one "is" in these environments, and what kind
of rules/protocol exists in each of these spaces.
My question: what does a real refusal to "play by
the rules" of a particular space signify here? Does
it mean logging off, or silence, or complaint -- or
is it simply that refusal to play by the rules has

its own unique protocol that will need to be defined for cyber-environments as well?

These are important questions, which reinforce the notion that in cyberspace, as elsewhere, knowledge production is relational-- we pursue different norms of appropriateness in various contexts, including "appropriate" ways to be "inappropriate/d". We are dealing, as Haraway puts it, with situated knowledges.

(TNC, 29 Apr., 1992)

This posting includes a long quotation from Diane Greco about social organization on the list. The mail software automatically produces the quotation, and Greco's original words are marked by the character (>) that appears at the beginning of her two paragraphs. These quoting features not only help keep sources cited, but they actually create the intertextual features of conversation in network discussions, features that fit with academic proscriptions about knowledge-making activity. The new subject line, however, is Heath's addition, and injects a new idea and textual reference into the conversation.

I reacted to all these posted interventions by feminists with quiet relief and gratitude. I recognized the Haraway reference and agreed with Heath's position: I wanted space for feminist issues and positioned statements without falling

into essentialist flame wars. I also knew both of TNC's co-founders, and I was hoping for interesting intellectual discussions of technoculture. As a full-fledged lurker at the time, however, I had already become dismayed at the conversational turns and gossipy tone; I felt both uncomfortable and excluded as part of the potential audience. In this sense, a lurker is necessarily excluded and can only become part of the virtual audience by intervening in the conversation herself. As often happens on the painfully self-reflexive TNC, people were discussing just this phenomenon of lurkers. About two weeks after the Balsamo/Wall intervention, I entered the discussion with a conciliatory tone.

From: Mary Hocks <mhocks@UX1.CSO.UIUC.EDU>
Subject: Re: lurking, group dynamics

Another lurker emerges, and (as much as one can pin a gender on any of us) a woman, provoked by such an interesting meditation on lurking. I lurk in public, in classrooms and on lists as well: the only times I don't lurk are when I'm singing or giving a presentation. But--aside from the theory and politics of lurking--I'm only writing because I'm stuck in the Rhetoric office right now with lights off and door locked (spelling the secretary & answering the phone).

I, too, think the Balsamo/Wall intervention changed this list for the better: I must admit I was [also] worried over it [TNC] echoing the predominantly-male po-mo ravings that I see in so much theory and po-mo fiction. But, genders aside, I like this list and its focus very much. Of course, I for one want to see more feminism since that's my interest, but I'll shoulder some of that burden myself and watch the feminist spaces emerge.

Mary Hocks

University of Illinois

(TNC, 30 Mar., 1992)

Despite my attempt to add one more feminist voice, the strand of feminist interventions didn't change things for the better. Feminist discussion continued for about a month, and then dropped off. I and others "left" the list, disappointed, and went searching for other spaces (I joined the Women's Studies List [WMST-L] and eagerly joined Feminists in Science and Technology [FIST] when it was created by still other disgruntled TNC readers.

Landow writes about this same month of conversation, but gives a different narrative of these exchanges. He focuses on the discussions of cultural politics and identity, picking up on John Unsworth's early comments on "infoworlds";

however, he altogether ignores the feminist and positional context of the "Dear Boys."

But let's get to infoworlds and infoculture: don't we have to explore, perhaps by extrapolation, three possible worlds that range from utopian to dystopian. In the most extreme, which technophiliasts glory in the contemplation of, all technology is free and widely available, you know, the way clean air, clean water, and even filet mignon is today. Then, you've got the cyberpunk vision of it all in which wealthy people and entitles corner information and access to the data, the net, the technoworld is the definition of power and status -- you know, sort of the way Bill Gates supposedly tried to corner images with his new IHS. He's probably been reading Gibson. Then, in between, you've the world of partial and changing access, problems of being swamped by information you don't want and being frustrated by inability to gain access to information to do want but can't find or receive permission to use (e.g. Dead Sea Scrolls, Hawthorne's letters -- both about half a century).

(TNC, 15 Mar., 1992)

This turn of conversation, and the subsequent strands of conversation about electronic identities and academic politics took over the discussion and later made their way into his print essay. Feminist interventions and gender politics did not.

Narrative #2: "Invisible Still"

In January of 1993, after another long discussion of computer pornography and related issues by the men on TNC, Kali Tal posted a series of messages entitled "Invisible Still," where she expressed outrage at her feelings about pornography not being regarded or "heard." She later produced a long, account of the exchanges which first shows the participants how their "social" network behavior replicated face-to-face confrontations, and then undercuts that analogy altogether:

I will suggest that what is going on here is a common (and almost certainly unconscious) masculine double-teaming strategy which works in this manner:

- 1) Male and female are engaged in normative (rational/masculine) discourse.

- 2) Female discussant claims such discourse has no place for her in it, changes mode of discourse,

expands the discourse to include emotion--how *she*
feels.

3) Male discussant refuses to address either
rational or "irrational" arguments put forth by
female discussant: "We can't talk if you're going
to be like this...." Withdraws from conversation.

4) Male (objective/objectifying) observer steps in
and affirms the irrationality of the female
discussant, absolving male discussant from
responsibility of addressing female discussant's
concerns, rational or otherwise.

5) The topic of the conversation then turns to the
discussion of the irrationality (now a foregone
conclusion) of the female discussant, in this case
taking the form of this "extraordinary piece of
electronic culture."

I assume that both Grusin and Gardner are men of
good will, sincere in their professions of support
for feminism. I have no reason to believe
otherwise. I also think that it is quite difficult
for men (relative to women) or whitefolks (relative
to blackfolks and other people of color) to be

continuously self-conscious about their words and actions towards these less privileged groups.

Beware of the assumptions you make. Remember that Gardner compares my words to Grusin to a similar statement made in an in-person encounter. What access, however, does any reader have to my state of mind when I typed:

>There is, at this moment, a terrible tightness in my chest. My impulse is to wail, or to scream, or to beat my fists against the wall. Why is it that I cannot cannot cannot be SEEN/READ?

I had all the time in the world to compose those lines. What might be read as an outburst might have actually been crafted as careful prose, for effect.
. . . Or I might have been truly furious.

Tal first recounts and analyzes fairly accurately what seemed to be going on when she intervened into the discussion with a feminist critique, and then felt attacked by Richard Grushin. Her messages sparked a raging debate, a theory war. In her last paragraphs, however, Tal draws explicit attention to the unknown but powerful contexts of writing and intention that lie behind electronic utterances. She quotes her own emotionally resonant words that she crafted, in an unknown

amount of time, a feminist and emotional "outburst" that hit the list with great emotional impact, and caused wide-ranging debate. By the end of the argument, Michael Joyce calls Tal's performance a dance and writes a "Tee Totaling Narrative" about it; Tal calls it guerrilla warfare. I wrote that the whole conversation was "pointless," wrote "here we go again," and signed off in real annoyance. The exchanges resembled a colloquium where debate had degenerated into posturing and self-reflexive language games, although I would probably never have said that in person, but simply left the room.

Shortly after this exchange on TNC, the Voices list was formed and drew most of the feminists away once again. Here, Tal again made explicit what the role of electronic interventions might be, asking us to think about feminist acts on electronic networks and what they might accomplish:

What I want out of "Voices":

Collaborations... I really want to try out the notion of virtual performance "spaces." Can we do political art here? How do we navigate the net as women, as feminists?

(HPV, Feb. 1993)

These questions had never been asked on TNC or MBU, because participants were too engaged in the gender wars. Kal brought up her ideas strategically in a new and supportive

social space. After a day of discussion about the goals of feminist writing and interventions, Tal responded to Carolyn Guyer and changed her terms from "warfare" to "performance art":

In bitnet list terms, I'm thinking of a performance group which subs onto a list. Each performer has a role to play in a series of scripted interactions with other performers... these might begin with introductions and then proceed to dialogues. Other list members will no doubt respond to the intros and dialogues and we'd have to work that into the performance. At the conclusion of the performance we have a discussion period. Then we unsub... and move on. Questions include whether or not we should declare the performative nature of our presence, what the effect of an "unannounced" performance might be, what the ethical implications of such performances would be under various circumstances.

I'm still looking for collaborators in building a feminist theater/improv company which "acts" in virtual space. And I'd like to start by thinking of performances that could be played on the listserv lists (like TNC). Collaborators would need to be willing to spend a lot of time thinking about and analyzing the patterns of narrative interaction

currently in force on lists (what do men talk about? how do they do it? what do women talk about? how do they do it? what happens when women talk? what happens when men talk? what sort of reactions to particular personae/"characters" receive? etc....) AS WELL AS trying to figure out what an artistic performance on a list IS. What aspects of nonvirtual performance art can we apply? What sorts of theory help us understand what we are trying to do?

(HPV, Feb., 1993)

Tal reflects directly on her experience during the "Invisible Still" exchanges a few months earlier. She makes clear the value of feminist intervention and role-playing in electronic spaces and uses self-conscious academic prose about constructed subject identities. Her questions reach toward the virtually unexplored territory of postmodernist feminist engagement with electronic writing and conversational spaces.

I exchanged a few private conversations with Tal about feminist theories. I had a lot to say about Haraway, and Tal reminded me that white feminists often embraced Haraway's theory, but missed how Haraway appropriates the trickster figure from African-American culture. I thought Tal's ideas about performance art were fascinating, but I secretly wished she would tell me whether she really was furious or not when she responded to Grushin. She never did. I only found these

discussions interesting after reconstructing the series of interventions and hearing Tal's comments for how these performances might affect the culture of a particular list. I didn't join the performance artists, but Tal undoubtedly formed a coalition elsewhere of interested Voices and other cyborgs. Many of us decided to collaborate on rooms and texts in the Hi-Pitched Voices wing of the Hypertext Hotel, yet another hypertext writing space that is still in the process of becoming.

Reflections of a Network Researcher

As time has passed, I have become aware of how artificial my own experiences and feelings have been in these discussions. I said things I normally wouldn't for the purposes of debate and I seem painfully aware of being on public display. On the other hand, I experience one-to-one electronic correspondences like on-going correspondences with friends. While the human connection of electronic communication is more obvious in one-to-one electronic correspondence, it exists on some of these academic lists as well. I'll never forget walking into the Hypertext '91 conference in San Antonio, Texas, and running into Michael Joyce, Stuart Moulthrop and Nancy Kaplan, whom I'd never met. Michael shouted "It's Mary Hocks from MBU!" They already felt like friends, though we had no doubt argued already on the lists (and will argue still). Similarly, my correspondences with particular readers and writers have felt the most like human connections and thus are the most

personally fulfilling. I've also recognized the need to expand my inquiries in this study much further: to look to even wider institutional and historical horizons, to explore compositions in hypertext using case studies of individual writers, and to incorporate more social spaces, from the Hotel MOO to the Internet to real bodies in hands-on workshops. Like most other academic settings, whether written or spoken, performances, constructed personalities, situated theorizing and even intellectual posturing still dominate the social environment. Such activities thus constitute the contexts and provide the widest horizons for hypertext writing in practice.

Notes

¹All electronic list messages are cited by list name, author and date or month. The full list name and retrieval information is included in the Works Cited. List messages are typically archived by date, but they use different formats depending on the system.

²Selfe and Meyer analyze what they call "the typical markers of discourse dominance (amount of discourse, verbal assertiveness, and politeness) related to gender and professional profile" (176). See also Landow, "Samizdat Textuality: The Case of Technoculture," which analyzes a month's exchange of messages on TNC about the topics of electronic discourse and publication.

³Similarly, Selfe and Meyer describe MBU as "essentially an on-line letter exchange" of "'messages' or 'texts'" (171), even though they also refer to messages as computer-mediated communication.

⁴For examples for this use of intervention into a specific field of discourse, see Haraway and Alaimo.

⁵These discussions, like the data analyzed in Chapter Four, focus on white, professional middle class people. They demonstrate regrettably little about other issues of identity politics such as race relations in electronic spaces.

⁶For the theories underlying participant-observation and writing, see Brodkey, "Ethnographic Narratives"; Clifford and Marcus; Geertz; Glaser and Strauss; Goetze and Compte; and Lauer and Asher, "Ethnographies." For exemplary situated studies of writing, see Odell, Prior, and Star.

Figures

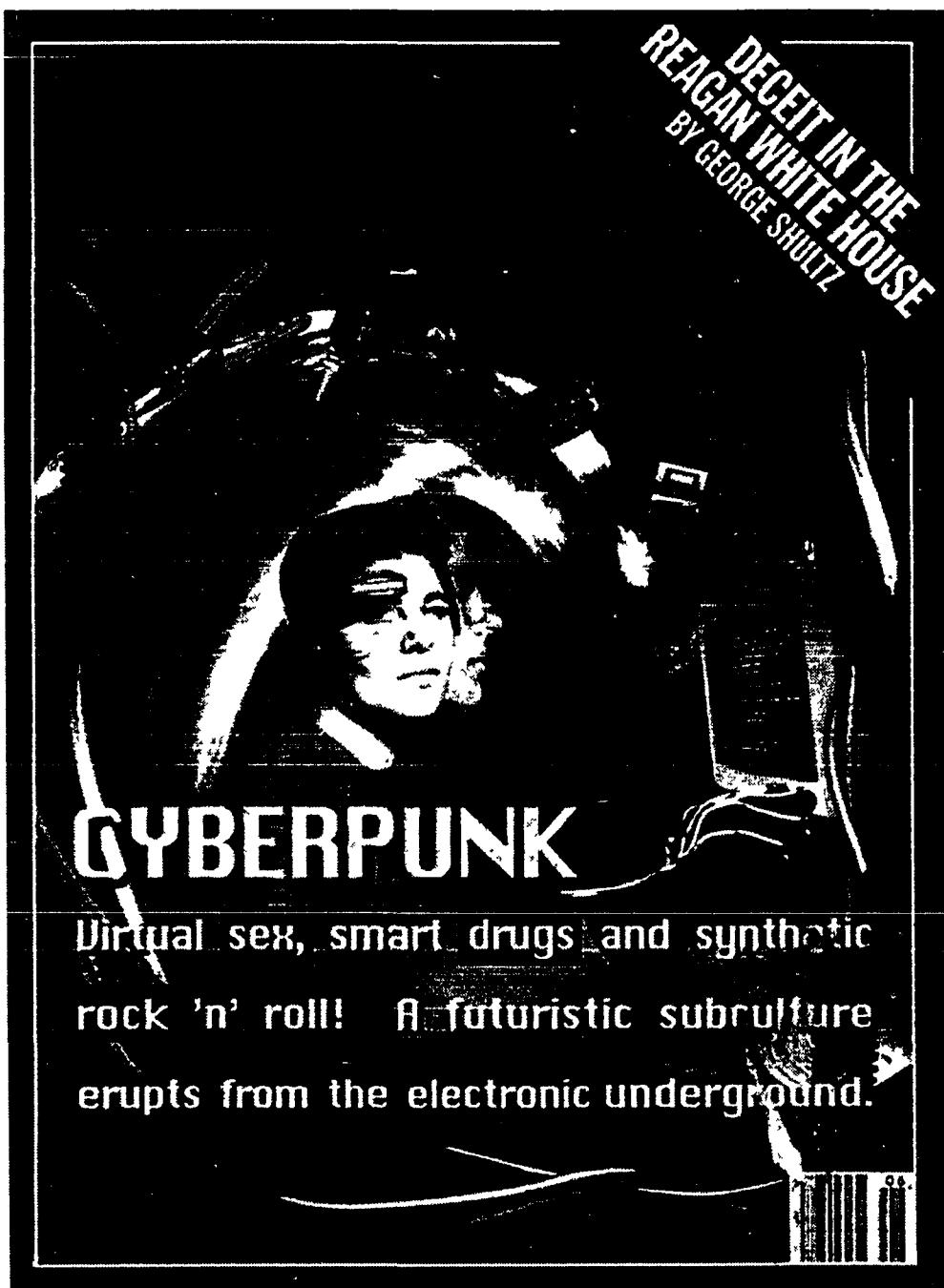


Figure 1. Androgenous cyberpunk hype.

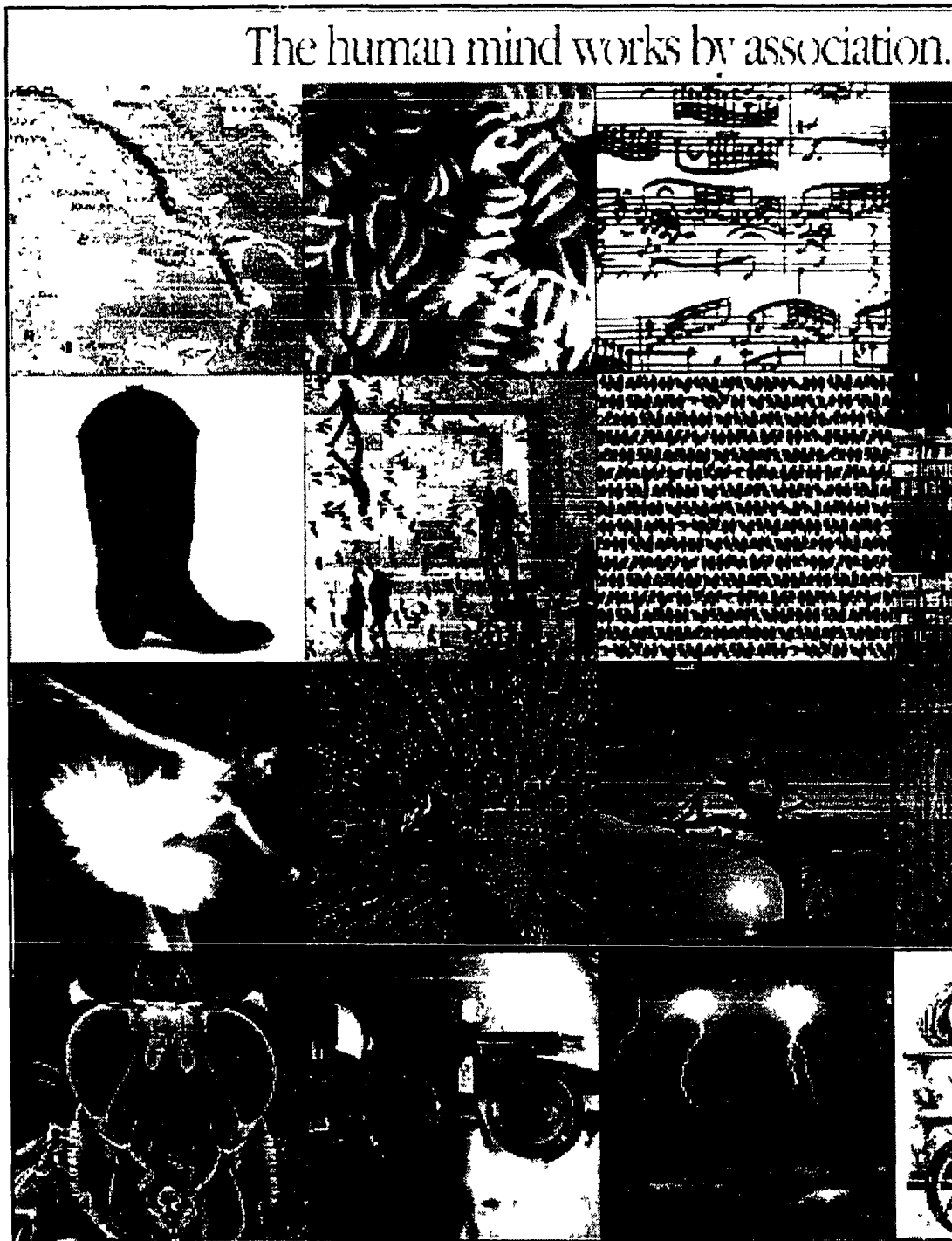


Figure 2a. An early brochure for Apple's Hypercard hypertext software (1987).

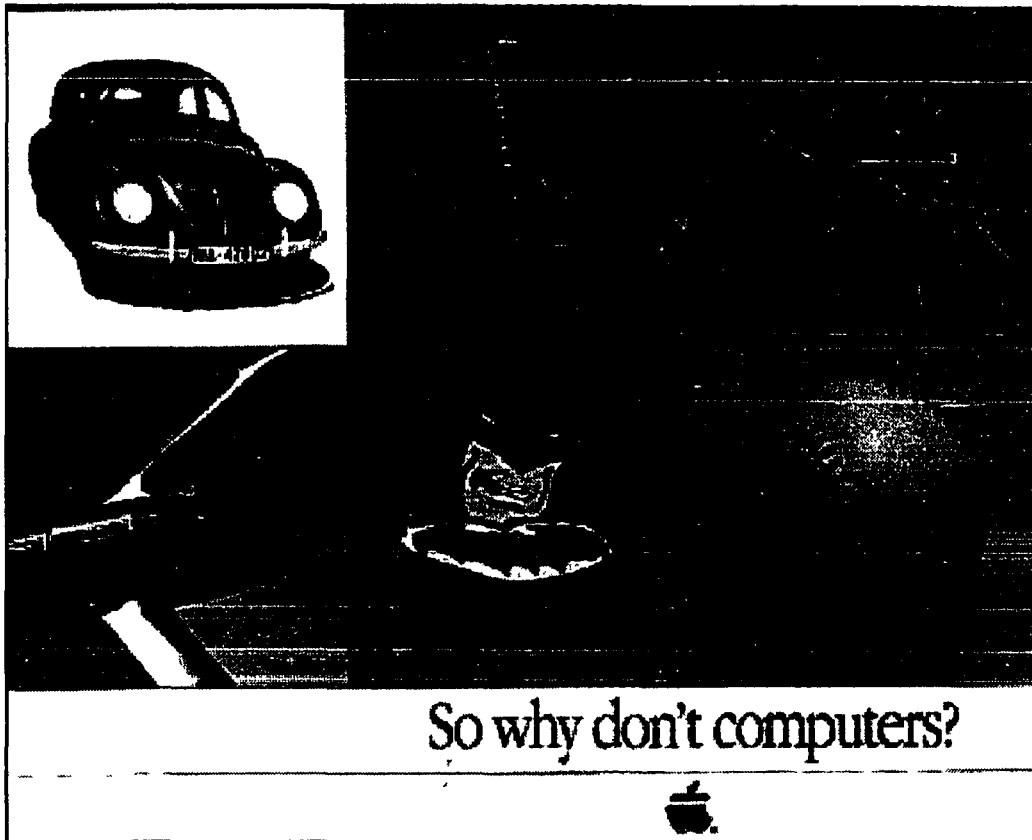


Figure 2b. The computer as analogous to the human mind.

Hyperfiction: Novels for the Computer

By Robert Coover

JUDE BUSCH, an aggressive undergraduate student with something of a crazy past, is ferociously seducing a reluctant graduate student named — in Stuart Moulthrop's fiction entitled "Victory Garden" — Victor Gardner. It is the winter of 1991, and Victor, we have learned, has just received a "Dear John" letter from the woman he loves, a former student and friend of Jude's named Emily Rubbard, who is now serving with the American forces in the

gulf war. Emily has made it clear in a letter from the front that her true love is Victor's maddening and possibly deranged thesis adviser, Boris Urquhart. Now Jude, determined, as she says, to add pain to pleasure, seems to be using Victor's thwarted passion for Emily as part of her seduction. "Like all great desires this one was neither plain nor simple," she knows, "it was radically perverse."

This perversity "thematizes" her conquest.

as she might have put it in a Boris Urquhart seminar. She strips lugubrous Victor, dons a blond wig (Emily is a blonde), sets up a mirror in her black bedroom so she and Victor can watch themselves, and makes him tell her how Emily smells.

After their peculiar out-of-body climax ("Yes folks, love is strange," the author muses wryly), Jude makes Victor admit that he still loves Emily, and she confesses (all this in the present

issue) that she does, too. Suddenly — poof! — the narrative ends.

Or . . .

(What is it like to read fiction on a computer screen in hypertext? Is it even possible to describe this nonlinear interactive art here in the implacably linear medium of printed text? As the hipster hypertexter Michael Joyce puts it in his

Figure 3. Hyperfiction as an endless labyrinth.

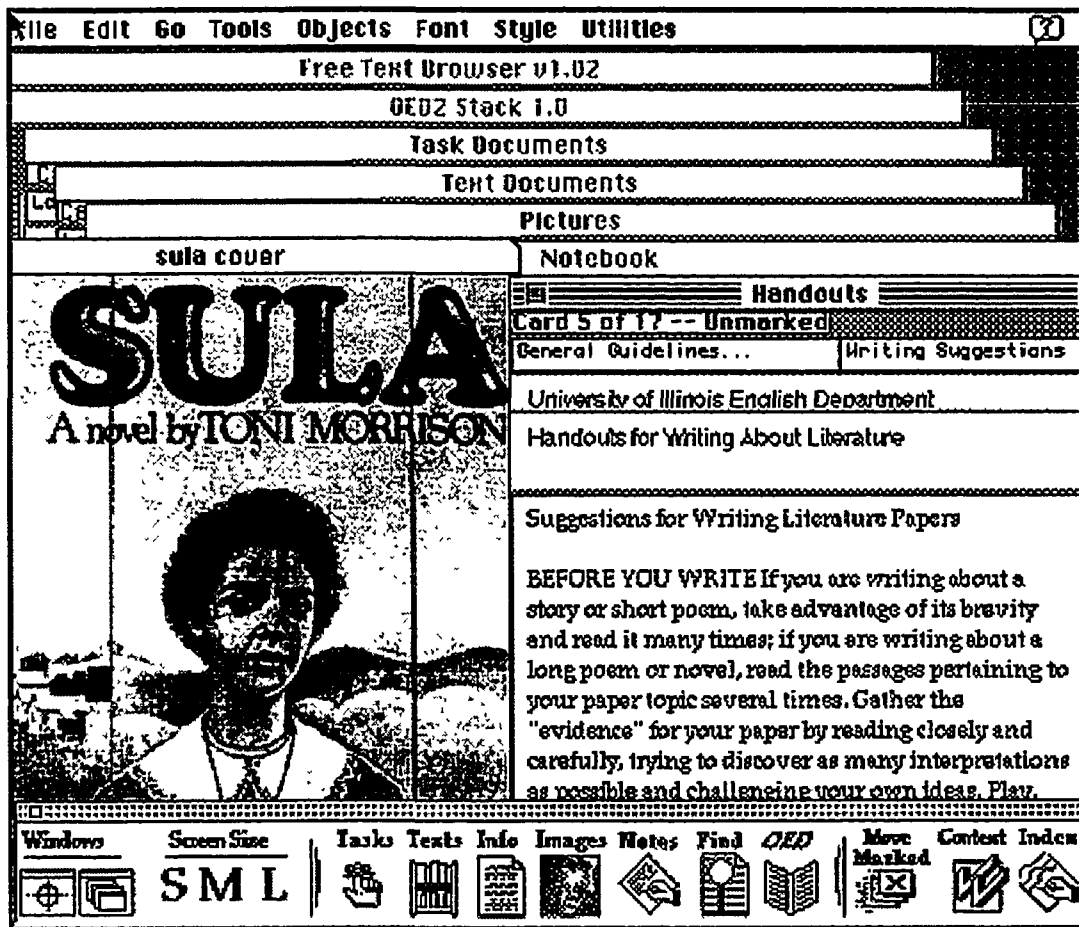


Figure 4. Homegrown Hypertext. An electronic course reader called Writing About Literature.

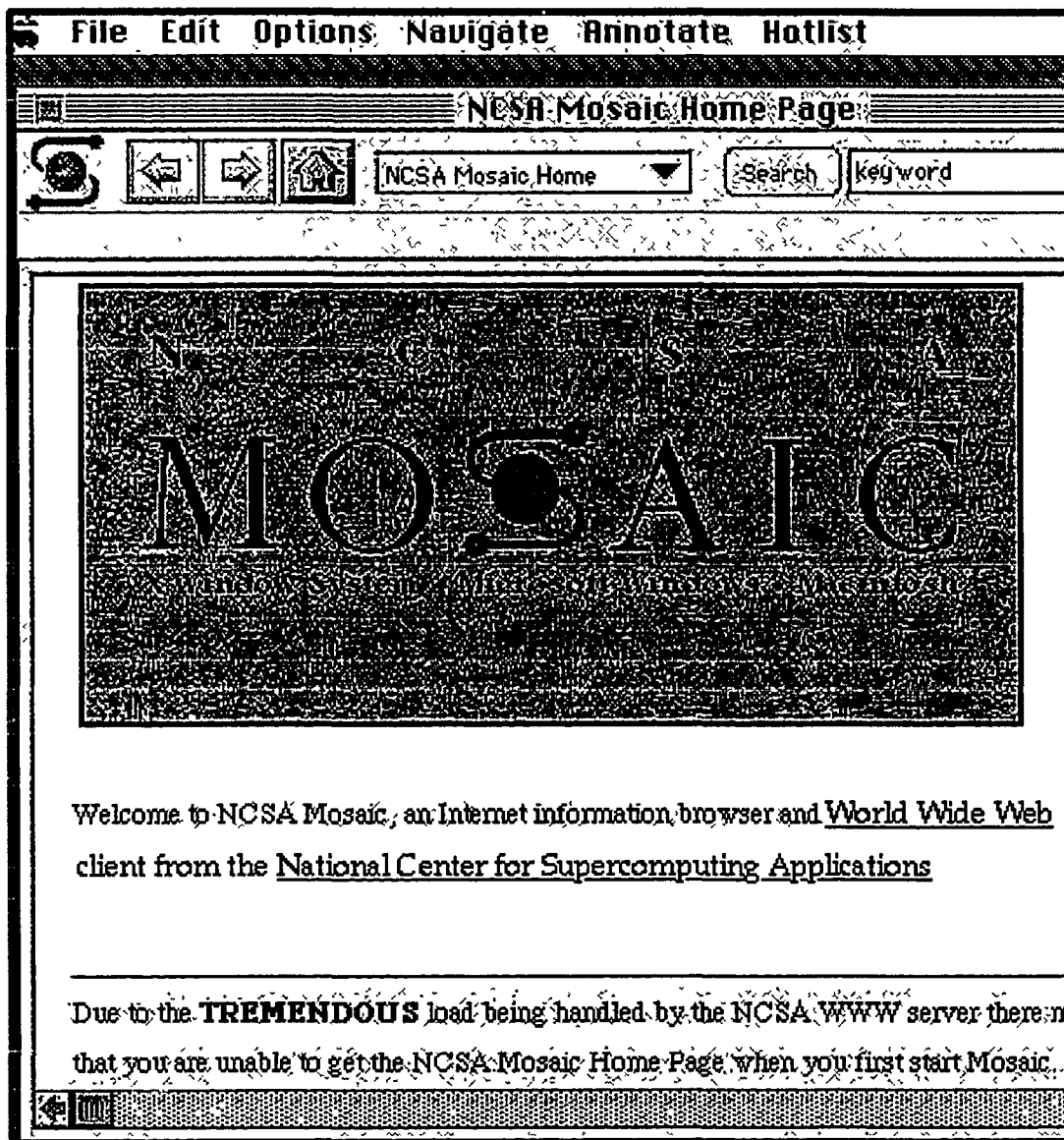


Figure 5. NCSA Mosaic allows full-color hypermedia over the Internet.

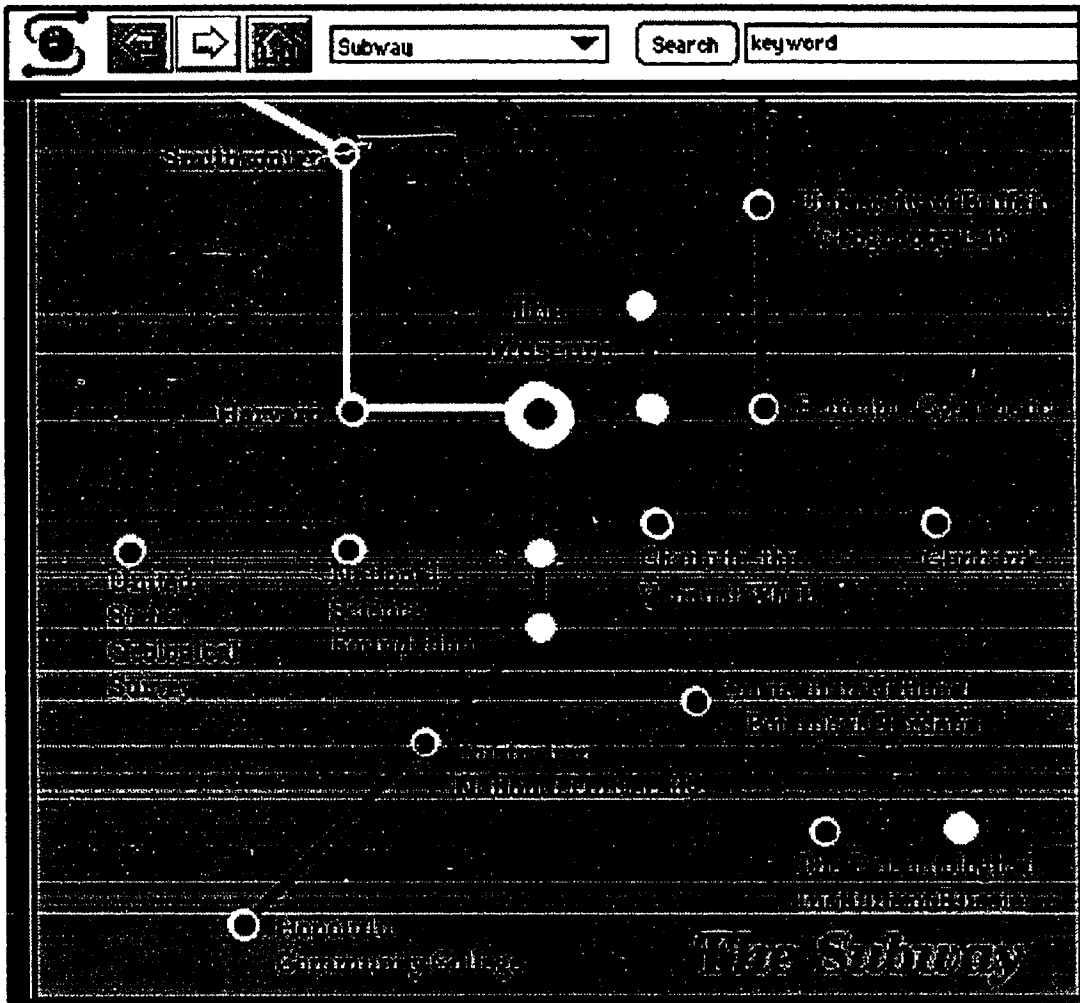


Figure 6. The travel metaphor of a subway in Mosaic.

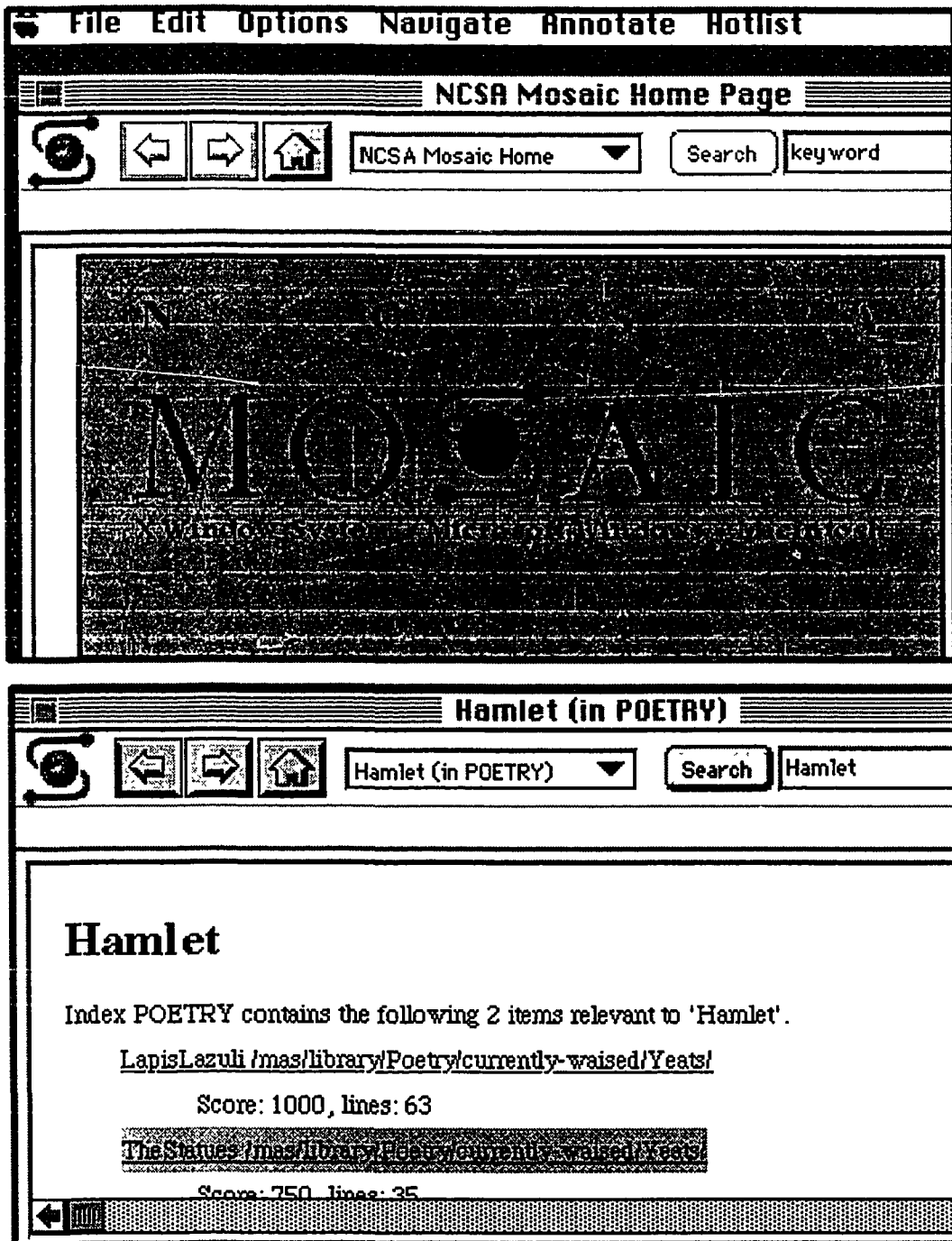


Figure 7a. The world of electronic texts. Using Mosaic to search for literary references.

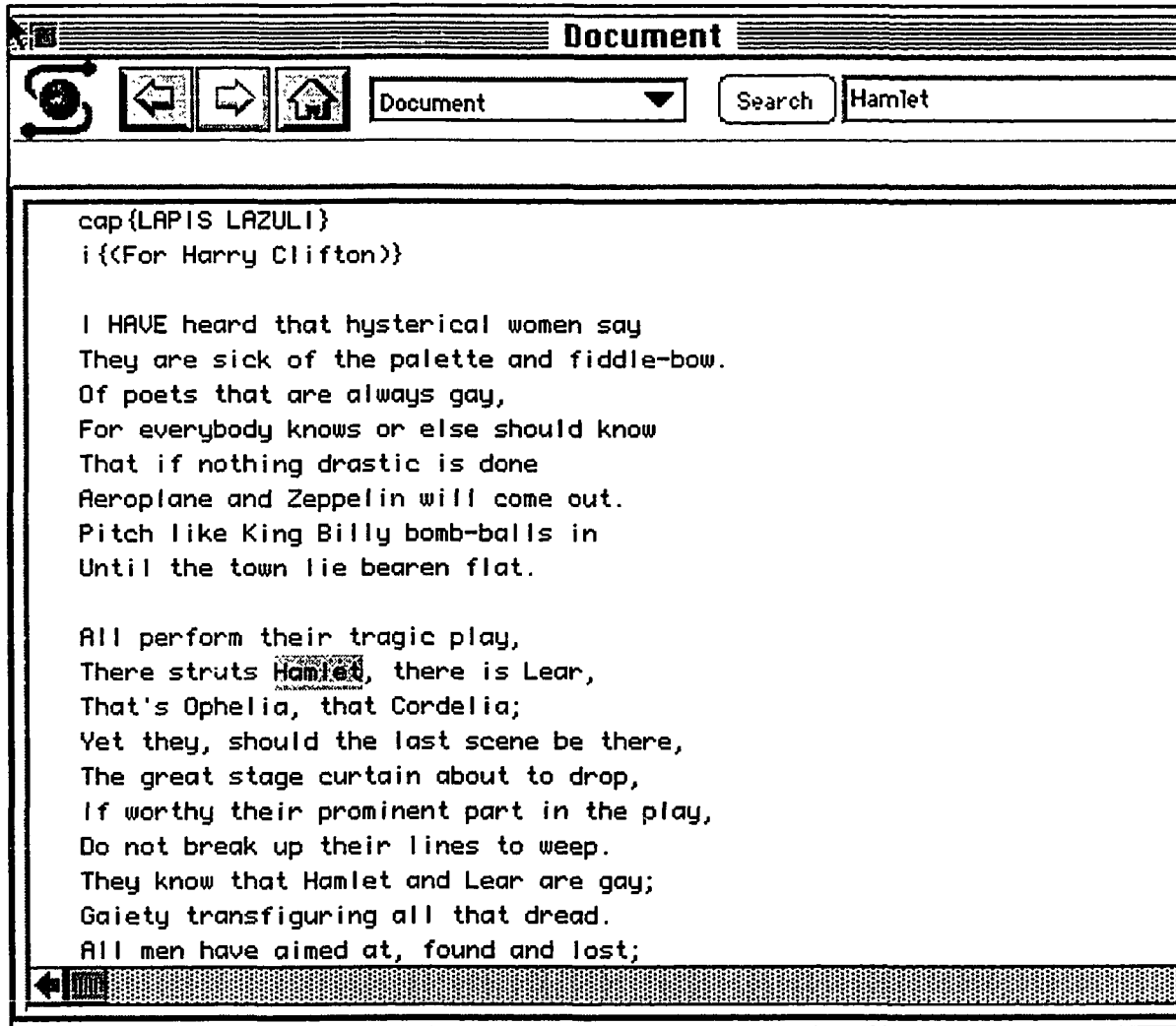


Figure 7b. The result of a search for "Hamlet": The full text of Yeats' "Lapis Lazuli."

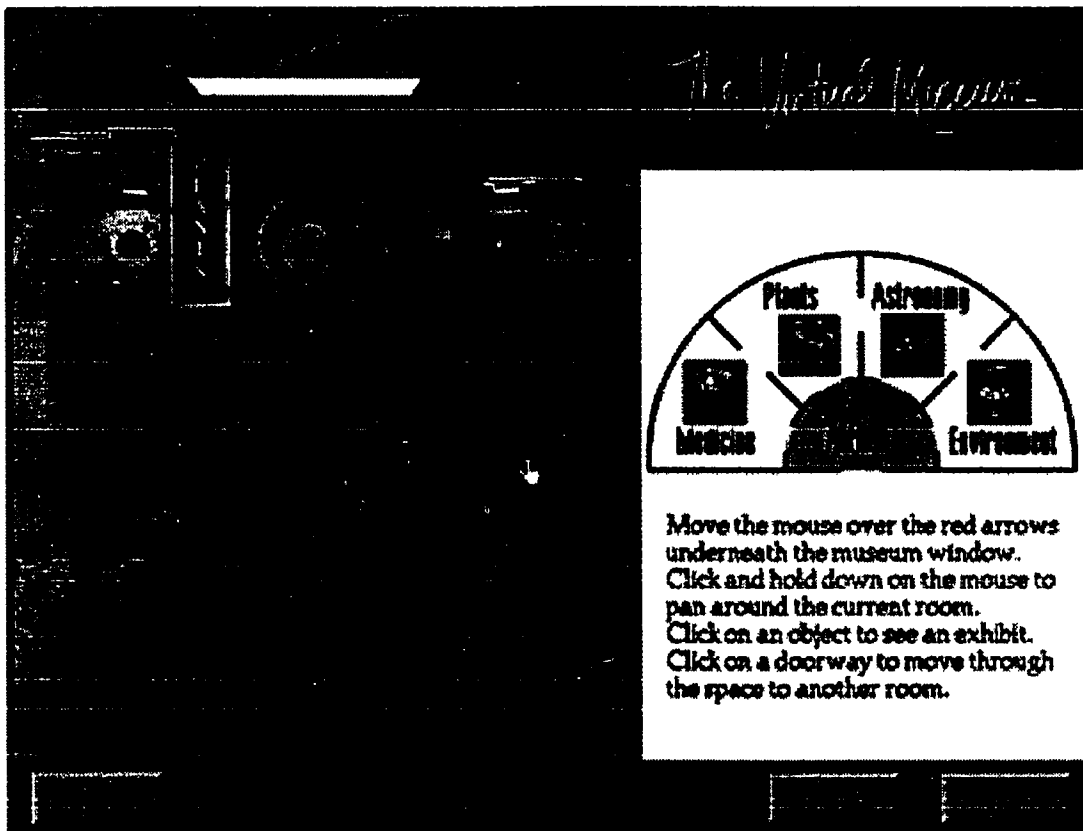


Figure 8. "Looking" around the front foyer of *The Virtual Museum* using digital movies.

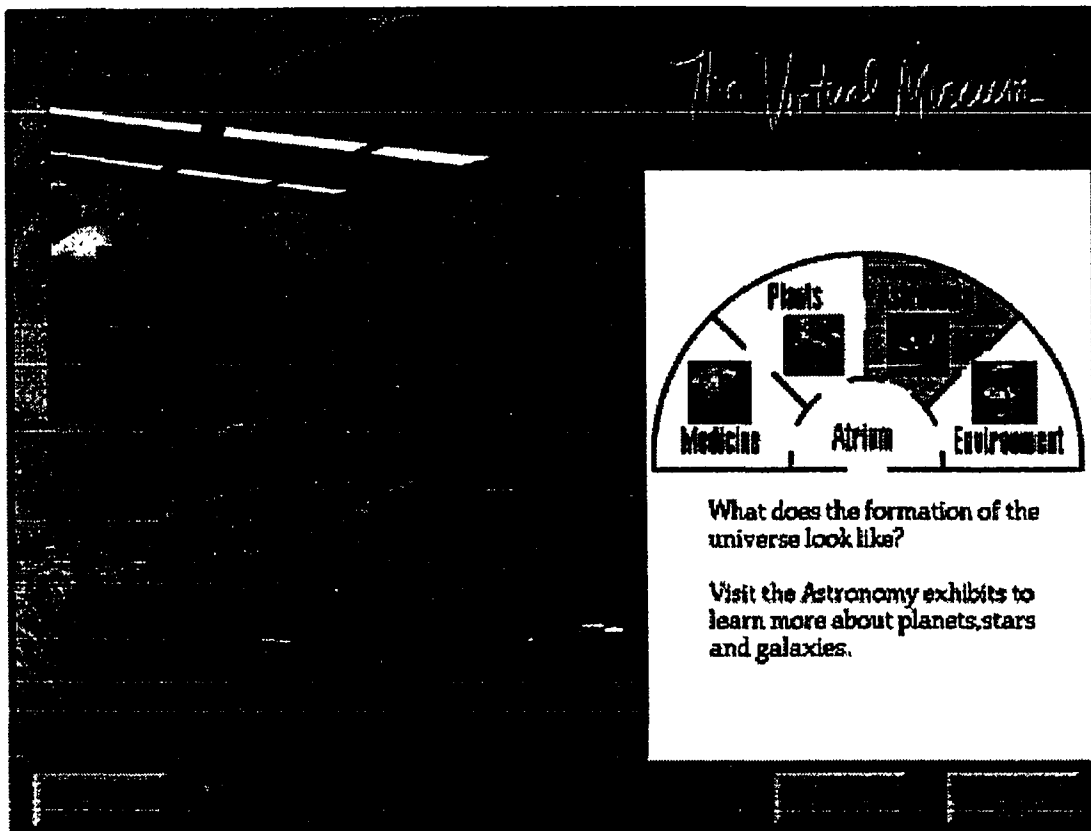


Figure 9. Three-dimensional "realistic" navigation in an artificial space.

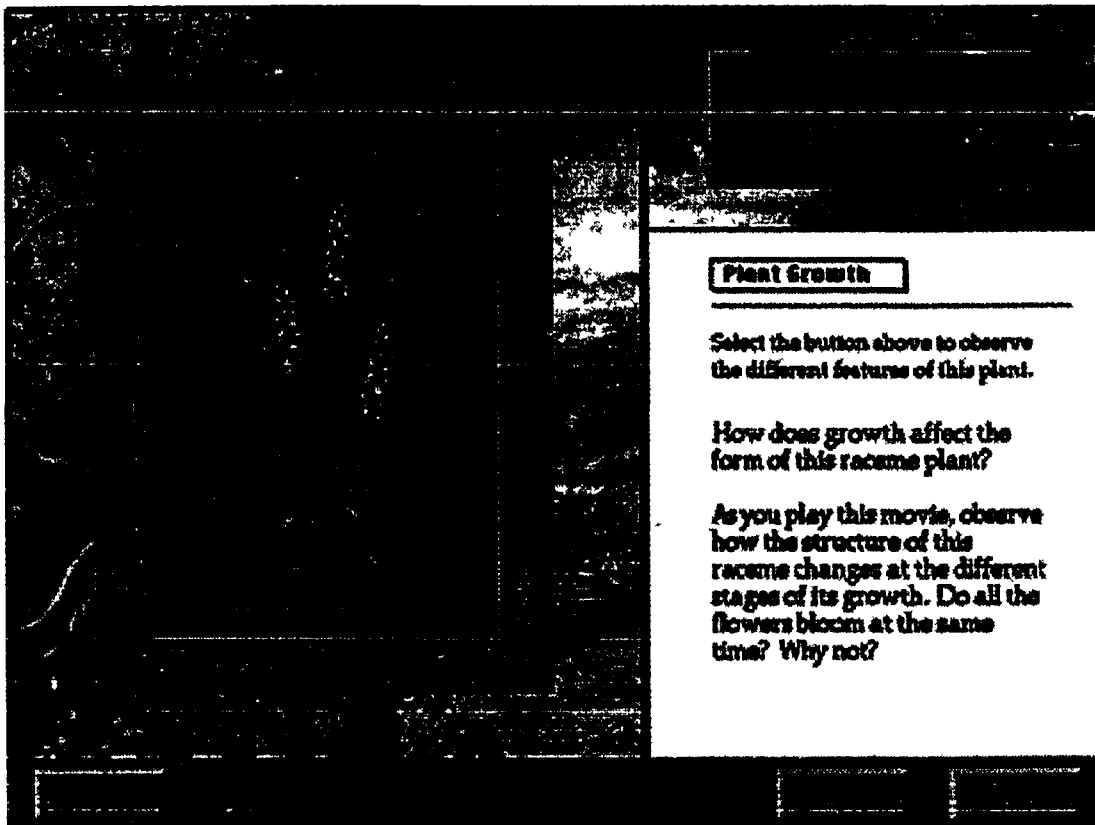


Figure 10. The two-dimensional screen (left) plays scientific visualisation movies while the text on the right displays questions.

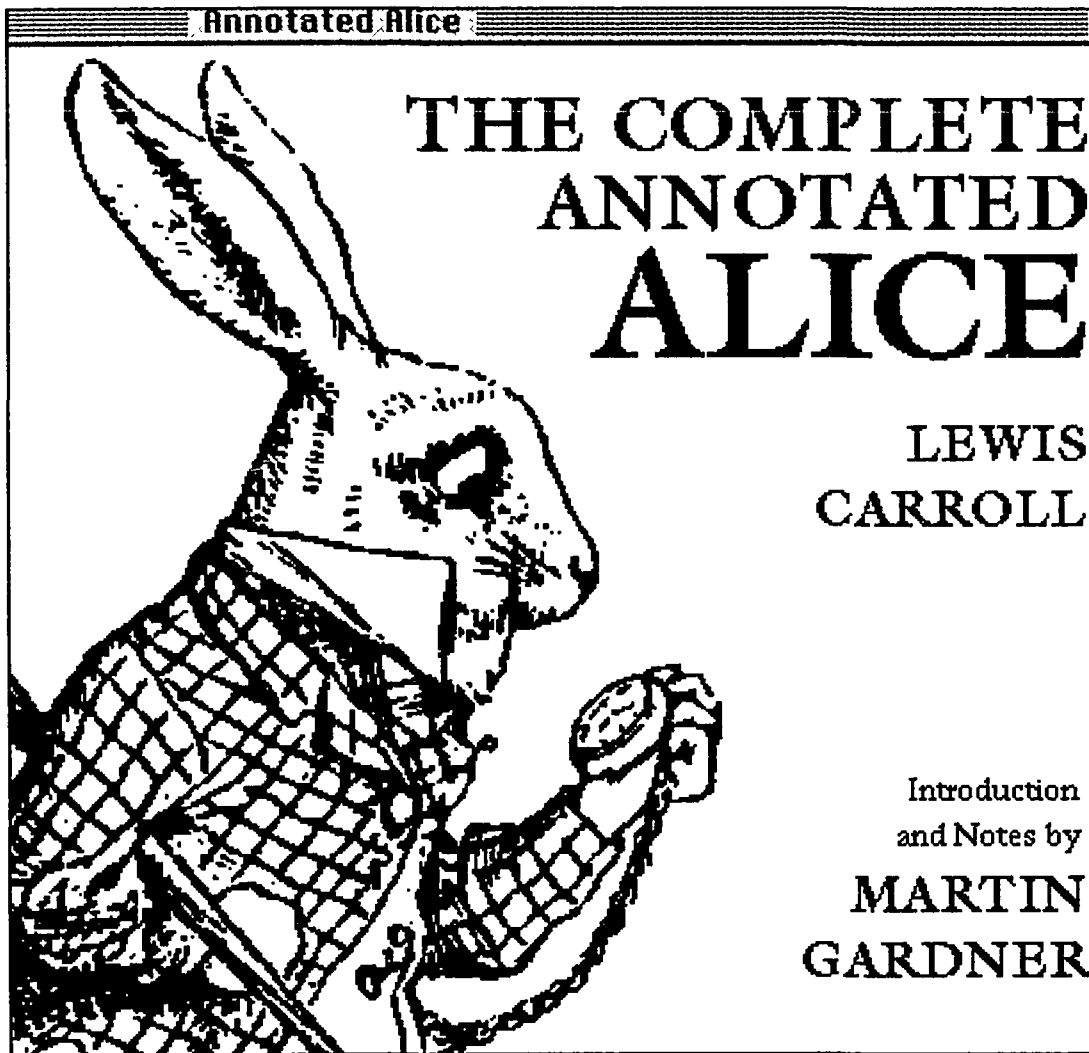


Figure 11. The first page or "cover" of an Expanded Book.

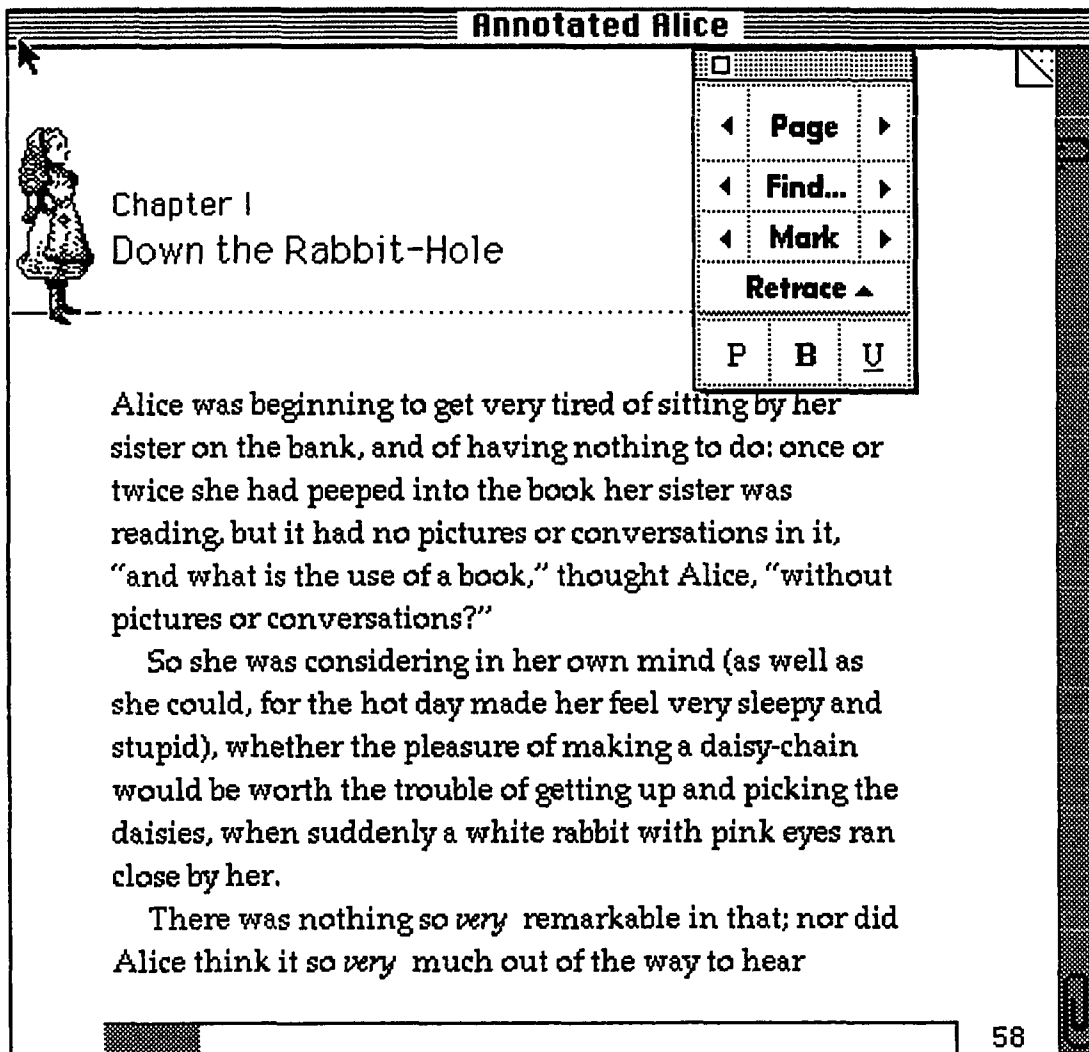


Figure 12. A page just like a printed page, complete with marginal notes on the left, page numbers, turned corners and paper clips.

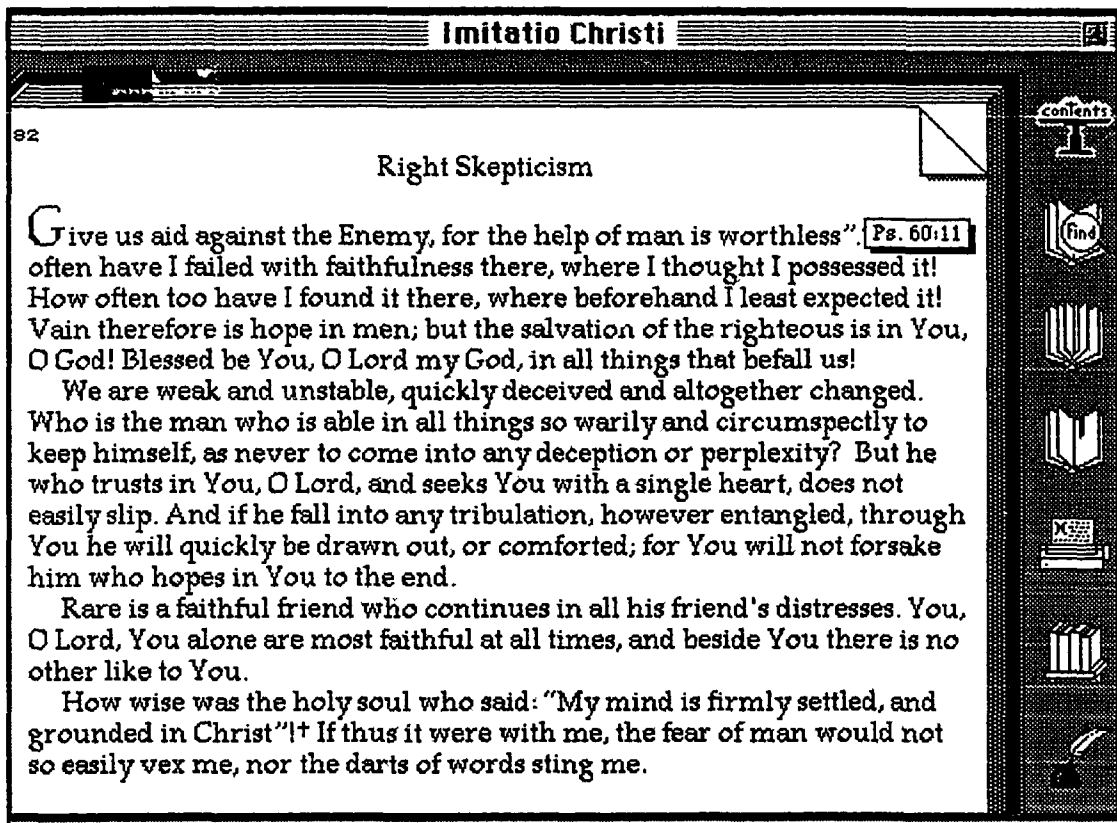


Figure 13. The footnote biblical reference pops up when one clicks on a cross icon. The tools at the right let one flip to a random page for inspiration.

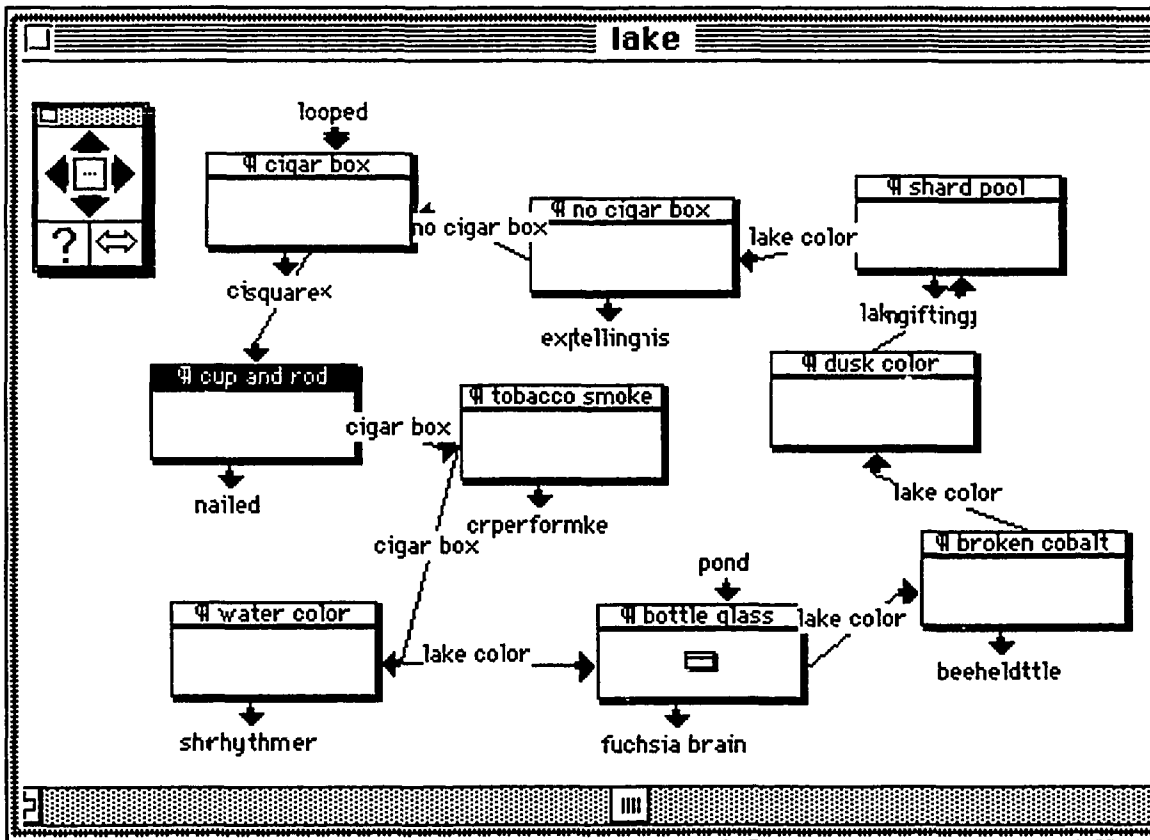


Figure 14. Hyperfiction *Quibbling* in the Storyspace view: Chinese boxes connected by links with the path names.

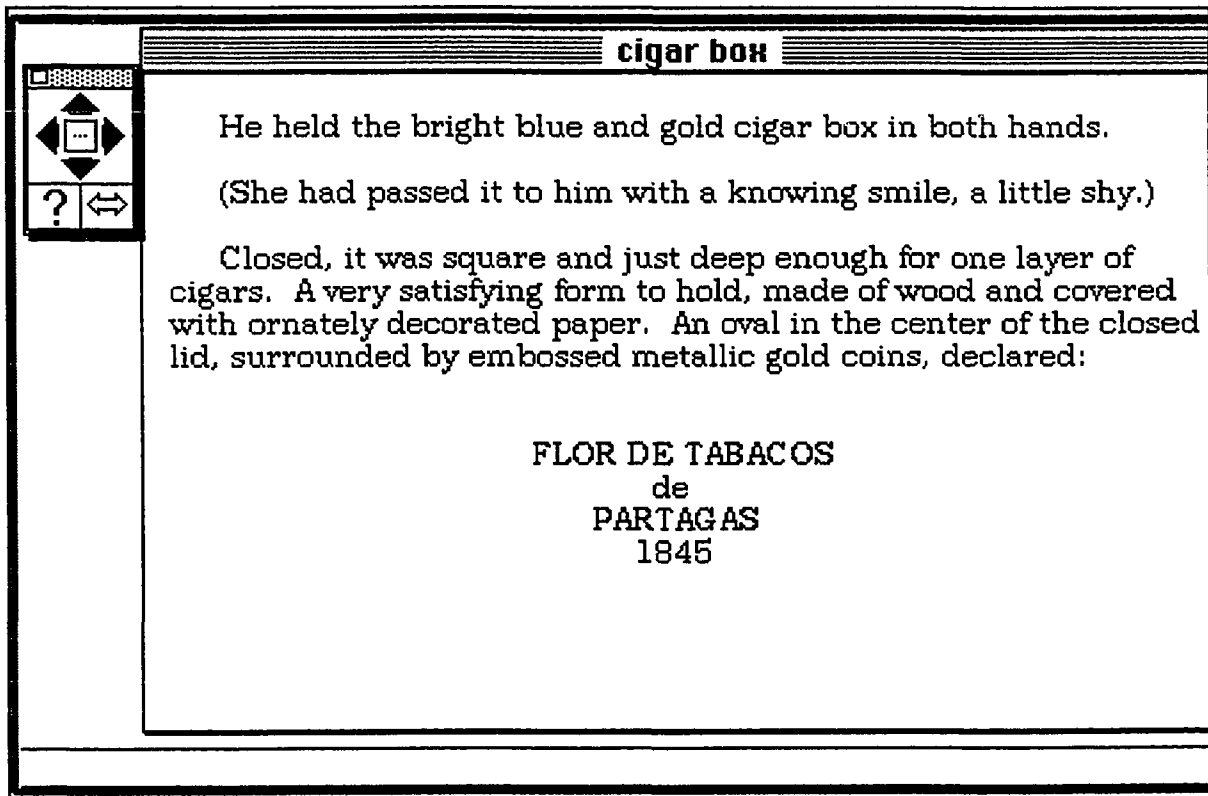


Figure 15. One text space in the read-only view of *Quibbling*.

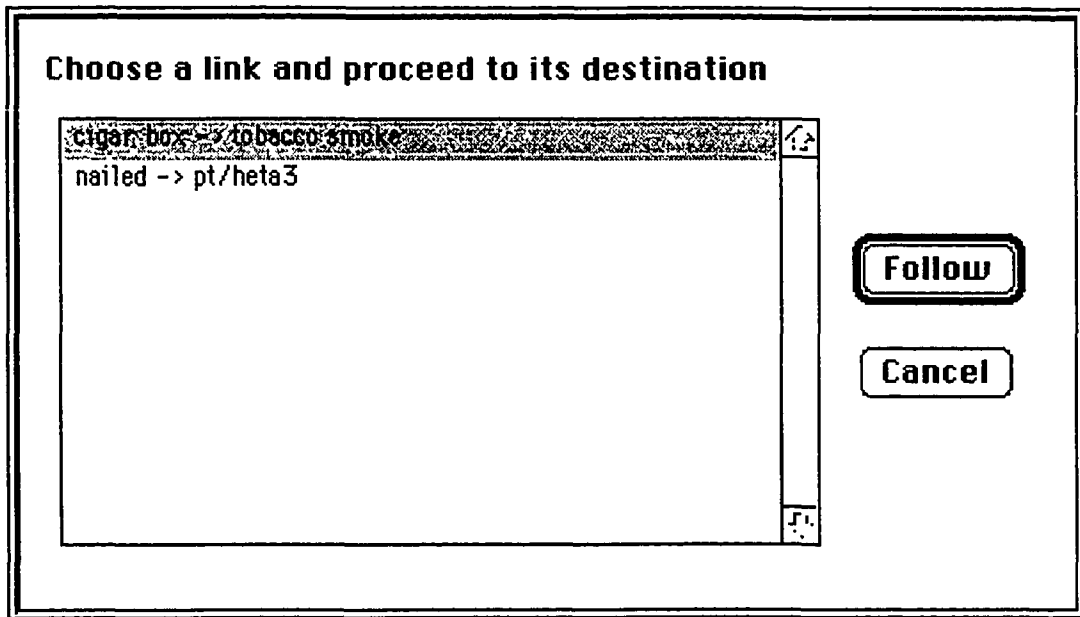


Figure 16. Possible links from the "Cigar Box" space.

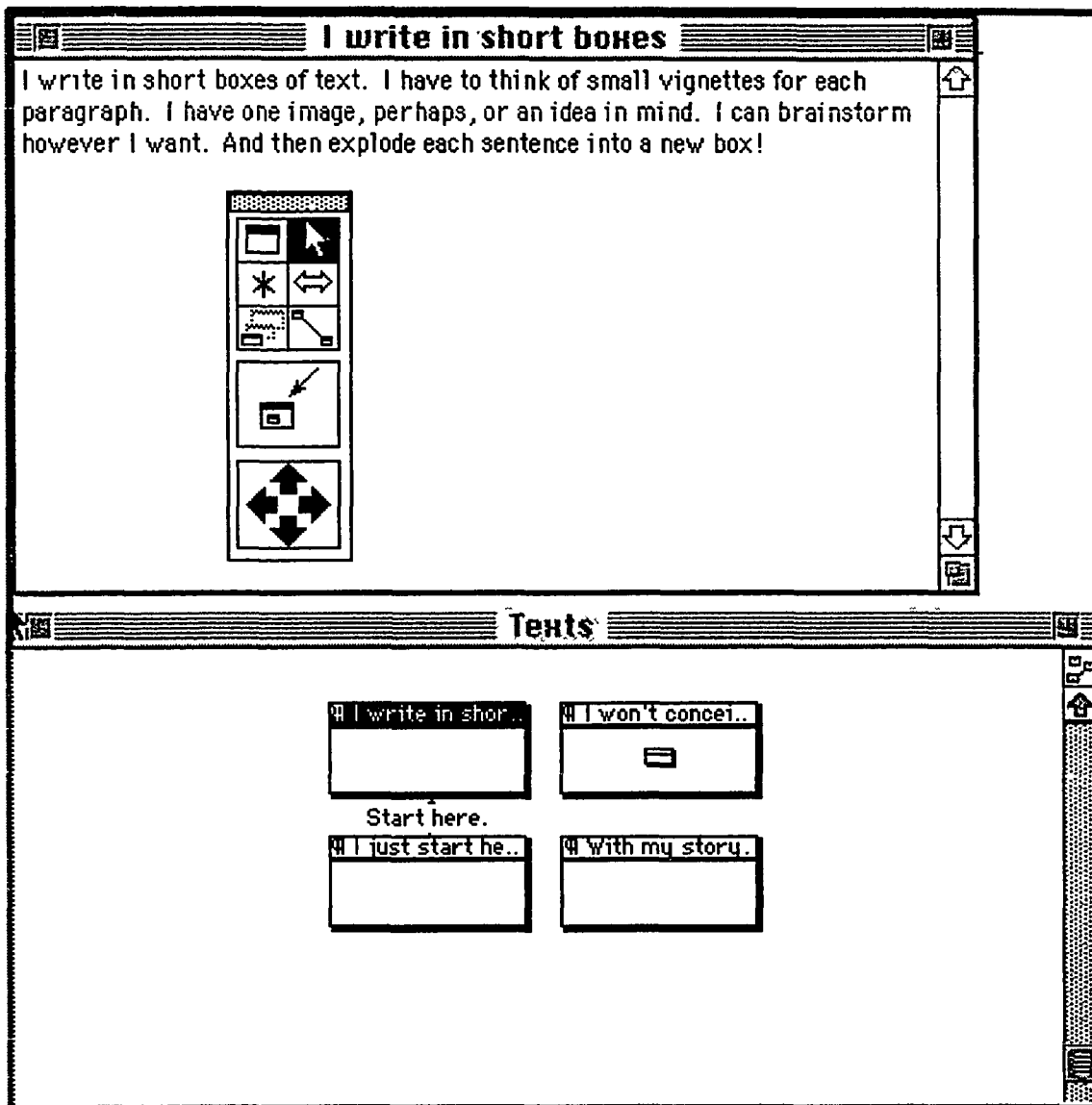


Figure 17. Composing a hypertext with Storyspace.

Appendix A: "Hypertext Fiction Survey"
Questions Distributed by Electronic Mail

HYPertext FICTION SURVEY

Please Read the Following:

I would appreciate it if you would take some time to answer the questions on this electronic form and return it directly to me (and not to the list) through electronic mail. I am conducting these interviews via e-mail to determine the practice of people who read and write hypertext fictions. This survey is designed to discover your personal ideas and observations about reading and writing in hypertext. It also aims to describe some of the general social practices of those who read and write electronic texts. Most questions can be answered with a "short answer" response (a few words to several sentences).

I plan to follow up this preliminary survey with in-depth interviews conducted over electronic mail over the next few months. Please understand that your participation is completely voluntary, but I would appreciate if you would tell me at the end of this survey that you don't wish to participate. Thank you very much for your cooperation.

Mary E. Hocks
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University of Illinois at Urbana-Champaign

I. ABOUT YOU

What are your job(s) and vocation(s)?

Gender?

Ethnic Background?

Age?

When did you first begin using a computer?

How often do you write on a computer?

How much do you read on a computer?

What software programs do you most often use?

In regards to computer technology, put an "x" by any of the following that describe you:

teacher

writer

critic

fan

worker

artist

cyberpunk

hacker

developer

phobic

novice

comfortable

expert

other:

II. ABOUT READING PRINTED FICTION

How much do you read for pleasure each month (excluding magazines and newspapers)? Describe in whatever terms are appropriate, such as numbers of books, articles, parts of books, numbers of pages, etc.

What kinds of *printed* narrative fictions do you read regularly for pleasure? Feel free to name writers or styles that you particularly like.

How would you describe your reading style when you read printed fictions? For example, do you often read in one sitting, skip around in the text, skim the text, read three books simultaneously, and so on. Feel free to use any terms that you like that help describe your reading style.

III. ABOUT READING HYPERTEXT FICTION

Where did you first hear about hypertext fiction?

What other kinds of texts and media does hypertext remind you of? Put an "x" by any of the following:

novels

essays

verse

encyclopedias

dictionaries

paintings

films

performance art

museums

science experiments

other (please specify)

What was the title of the first hypertext fiction you read?

Where did you get it?

How would you describe your reading style when you read a hypertext fiction? For example, do you often read in one sitting, skip around in the text, skim the text, read three fictions simultaneously, and so on. Feel free to use any terms that you like that help describe your reading style.

IV. ABOUT WRITING HYPERTEXT FICTION

(If you've never written in hypertext, go on to Section V)

When did you create your first hypertext fiction?

What software and system(s) do you use to create hypertext fictions?

How would you describe the reader or audience for your hypertext writing?

Do you write creatively in non-electronic forms? If so, what do you write?

Do you believe that your compositions receive adequate attention and recognition, professional, popular or otherwise?

What responses do you receive from other people when they discover that you write hypertext fiction?

Any other comments about reading or composing in hypertext?

V. ABOUT THIS SURVEY

I will be using this information to come up with a preliminary description of hypertext reading and writing practices. Do you give me permission to use the contents of this survey, including anonymous quotations, in my work about hypertext?

Would you be willing to participate in an interview with me over electronic mail?

Please mail this file **directly** back to me at mhocks@uiuc.edu. Thanks for your participation!

Appendix B: Tables From Data

Table 1: Demographics

Gender	Number	"Expert"	Qualify Expert"	"Comfort -able"	"Novice"
female	21	9	7	18	1
male	33	17	7	23	0
Total	54	25	14	41	1

Ethnicity/Background	Number of respondents
Chicano/a	2
European	2
Canadian	2
White American	48

Profession	Number of respondents
Technical, computer professional	20
Academics at college level	23
Secondary level teachers	1
Librarians	3
Artists (visual, graphical, video)	3
Writers (published or aspiring)	12
Students (undergraduates, graduates)	5
Publishing Professionals	3

Hypertext Programs Used	Frequency Cited
Storyspace	46
Hypercard	25
MOSAIC	7
Macromind Director	3

Hypergate	1
Guide	1
Macromind Director	3
Toolbook	1
Blackmagic	1
Pacerforum	1
multimedia (generic term)	8

Table 2: Print Texts Genres and Authors Cited.

Print Text Genres	Frequency Cited
science fiction	29
fantasy	8
cyberpunk	13
romance	1
historical	6
experimental	5
postmodern	6
mysteries	15
detective	5

Male Print Authors	Frequency Cited
Borges	1
Ballard	3
Fowles	1

Ginsberg	1
Burroughs	2
Cortazar	3
Carver	3
DeLillo	4
Umberto	1
Barthes	1
Gibson	9
Pynchon	3
Coover	4
Calvino	1
Bartholame	2

Table 3: Electronic Texts And Sources Cited

Hypertext Books and Fictions Read	Design Software	Frequency
Adventure	Interactive Fictions	12
Afternoon	Storyspace	25
Alice in Wonderland	Hypercard	4
Ambulance	Hypercard	1
Dreamtime	Hypercard	1
Forking Paths	Storyspace	1
It's name was Penelope	Storyspace	1
Izme Pass	Storyspace	7
"Just Grandma and Me"	Interactive Fictions	1
KING OF SPACE	Hypergate	1
Literary Machines	Xanadu	1
"On reading hypertext"	Storyspace	1
Quibbling	Storyspace	6

"THE MADNESS OF ROLAND"	Hypercard	1
Uncle Buddies Fun House	Hypercard	1
Victory Garden	Storyspace	3
Woe	Storyspace	6
Writing Space	Storyspace	2

Hypertext Authors Named	Publisher/Distributor	Frequency
Martin Gardner	Voyageur	1
Jay Bolter	Eastgate	3
Carolyn Guyer	Eastgate	4
Michael Joyce	Eastgate	17
John McDavid	Eastgate	5
Stuart Moulthrop	Eastgate	4
Ted Nelson	Ted Nelson	4
Martha Petry	Eastgate	1

Sources for hypertext books and hyperfictions	Frequency Cited
Eastgate Publishers	14
Perforations Journal	2
Writing on the Edge Journal	1
NYT Coover article	3
Chronical of Higher Ed	1
The network	8
Friends/teachers/colleagues	10
ANALOG magazine	1
Infocom Company	1
World Wide Web	1

Table 4: Categories Derived From Qualitative Analysis

Inductive Categories	Description	Instances
COMPARE	explicit comparisons between printed and electronic text experiences	12
GROUP	direct references to other survey respondents	12
LINEAR	references to linearity or nonlinearity	19

NEGATIVE	comments about problems or frustrations with hypertext technology	20
POSITIVE	positive comments about hypertext technology	9
PROCESS	comments on their writing processes	5
READER	directly mentions of "the reader"	10
SURVEY	direct references to the questions	11
WOMEN	references to women artists, writers	4

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