THE SPACE BETWEEN: HOW HYPERTEXT AFFECTS THE AUTHOR/READER DIVIDE

By

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Michael Edward Becker
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ABSTRACT

Authors and readers have been in conflict since the invention of writing, battling over the right to interpret a written document. This has artificially created a split between these two institutions, a split typically divided between those who have the power and money to publish their words to a mass audience and those whose words have been repressed by that publishing system. This thesis examines, through the lens of deconstruction and other post-structuralist threories, how hypertext and other digital technologies have empowered reader to take back some of the functions historically granted to authors. Through blogs, interactive Web sites, and electronic literatures, readers can assume a larger role in the creative process. However, with more power comes more danger for manipulation, as authors have also become more canny with the rise of electronic text. Though readers have more freedom, they must also face an increased potential for mediation and manipulation outside of their control. This thesis determines that although the gap between authors and readers is narrowing, many of the old conflicts are too ingrained to ever be settled.

INTRODUCTION

There is a space between the author and the reader, one that exists naturally as a result of the technology of writing. This space is both physical and temporal. Writing can record speech, either actual or potential, and thought, coding that information into language for the reader to decode later. The amount of information and the efficiency of this transmission vary depending on a number of factors, from context to social upbringing to education. A space opens between the author and reader because the two of them do not have to be in the same place for this transmission to happen. The author may be located around the world from the reader, the physical space; or the author may have written yeas ago or even be long dead, the temporal space.

Space, in a sense, also exists between individual writings. Some readers and authors believe that an individual text is distinct, that it lacks connections to other texts. In a case like this, it is up to the reader to make his own connections between two or more texts. We call this interpretation, and if the reader then writes about those connections and analysis, we call it criticism. But the task of making connections is not easy. It relies heavily on memory, past experience, and context. While some conventions in writing have been developed over the centuries to help in this task (indexes, bibliographies, tables of contents, glossaries, etc.), bridging the intertextual space remains difficult.

Computer technologies may provide a way. In 1945, Vannevar Bush called for a review of the ways that scholarly readers around the world shared information, both across physical and intertextual spaces. In “As We May Think,” Bush wrote,

"Professionally, our methods of transmitting and reviewing the results of research are generations old and by now are totally inadequate for their purpose" (Bush). In his time, at the tail end of World War II, scholarship was moving faster, and more was being written than ever before. As the head of the Office of Scientific Research and Development, Bush saw ways the world could benefit from the hundreds of thousands of hours of research conducted during the war. He proposed a new way for scholars to communicate, a system called the *memex,* a desk-sized machine much like a modern computer, though reliant on punch cards and not circuit boards. The memex was intended to model human memory. A memex user might read a text and then link it to another text by association. These "trails" were what Bush saw as the "essential feature of the memex"[1] because they allowed the user to return to what he or she was doing, perhaps months later, and recall those same trails with the push of a button.

The memex would have bridged the intertextual space nicely by giving readers an easy way to retrace their connections without having to sort through volumes of notes. And though it was meant to model memory, the memex would have ironically reduced the need for detailed memories of those intertextual connections. The details of those trails would be recorded for them, and the way in which texts were connected would have jogged the user's memory as to the details. Bush also addressed the physical space with the memex by allowing users to share their trails with others. Though this still would have required physically transporting a record of those connections to someone else's memex device.

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[1] See What Hypertext Is, p. 11

But the memex was intended chiefly for scientific readers who, it could be argued, need to make more intertextual connections than scholars of, perhaps, literature. But that changed with the rise of literary theory in the twentieth century. For myriad reasons, literary scholars began to question traditions in literature and found new ways to read and interpret texts. Even the definition of a "literary text" broadened to include elements of popular culture that would not have been considered worthy of study before theory. Contextuality and intertextuality became much more important to the study of literature than ever before, as did studies of power relationships. Established traditions were questioned, and authors became, for some, the agents of colonial or cultural power. Ideas culled from other ideologies—Marxism, for example—transformed under theory into useful ways to look at literature. In other words, scholars began looking at the places where cultures, texts, readers, traditions, and history collided. The "space between" became very interesting.

In addition to appropriating material from other fields of study, theorists in the 1950s and 1960s began to look at the way new technologies challenged traditional approaches to literature. The popularity of television, radio, and film not only broadened what counted as literature but also forced theorists to look at print as one medium among many. Though centuries of use had turned print into the chief medium for serious scholarly communication, the rash of technological developments after World War II suddenly gave print competition.

Among those post-war technologies threatening print was the computer. The first computers, like the vacuum-tube leviathan ENIAC that was unveiled in 1946, were

number-crunching machines without the ability to communicate in ways that a normal person could understand (without a doctorate in physics or mathematics). But then, in 1960, Theodor Nelson began work on Project Xanadu, an endeavor to make computers user-friendly.[2] More than that, Nelson saw what computers could do with raw data and numbers, and he wondered what that kind of power could do to text. The eventual result was what Nelson termed a "hypertext." Though it will be problematically defined below, suffice to say, a hypertext is generally a computerized document that allows users to easily access it, search it, and navigate it, usually through a series of links between documents; and rather than the reader sifting through the text, traveling toward the desired pages, the hypertext document brings those words to the reader. Hypertexts give readers more control to shape their reading experience than ever before.

Hypertext, along with being a technology, is a new way of reading that can remove linearity from a text. The order in which an author set down her words no longer necessarily matters. With hypertext, the reader can produce her own unique *instance* of a text;[3] and though readers have read printed books and articles out of order for almost as long as that technology has existed, the *hyper*text provides tools designed specifically to undermine its own stability. For example, a person reading a hypertext novel might read one chunk of text, or *lexia* in Barthes' terms, and then be asked to choose from a set of options as to what the "next" page will be. By the time the reader finishes, she may not have read all possible lexias, and should she return to try to "finish," she will find a

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[2] See What Hypertext Is, p. 14

[3] See Instance Issues, p. 40

different text, even if only by small degrees. Printed books—with a few exceptions like encyclopedias, dictionaries, and books openly trying to break up their own reading order (usually to emulate hypertext)—always have a privileged reading order: the order they were bound in, the order the author set down. A hypertext, on the other hand, provides no such order. It provides only text waiting to be read however the reader wills.

Hypertext does more than just give the reader more control. It complicates the author's relationship with the text. Remember that writing traditionally separates the author and the reader both physically and temporally. Writing literally removes the life from language by allowing it to exist without the speaker's breath. In his famous essay "What is an Author?", Michel Foucault states that as an author writes, he "cancels out the signs of his particular individuality," making the author "nothing more than the singularity of his absence" (141). That absence is linked with power: who has it and who does not. For example, Richard Lanham suggests in *The Electronic Word* that writing's power comes from "the *role* it allows the writer to play" (220). He explains:

> The writer seems to speak as we do, but actually speaks from a different time scale, one that condenses years of work and thought into minutes of reading time. The rush we get from reading great writing comes from that sudden, almost instantaneous transfer of power. No writer's role, no transfer of power. (220)

Lanham here addresses the temporal space and asserts that writing gives the writer the ability to command great power across that space. When he talks about "writing's power," he is speaking from the point of view of the reader, as if to say "the power writing has over us as readers." Authorial power affects readers across great distances.

Yet hypertext is not a medium for the one-way transfer of power. Electronic reading and writing practices also bring the author back into the text, narrowing the

physical and temporal space. With hypertext, it is possible to converse with an author in real time, shortly after or perhaps *during* the reading. Several experiments sponsored by the Institute for the Future of the Book in New York have attempted to do just that by letting readers take part in the writing process. McKenzie Wark's forthcoming book *GAM3R7H3ORY 1.1* has been written on the World Wide Web with specially designed software that lets readers comment on chapters as Wark posts them to the Web. Those comments are publicly accessible, and Wark has incorporated some of them into his draft.[4] The book, according to the Institute's Web site, is part of their continuing effort to "investigate new approaches to writing in the networked environment … to see what happens when authors and readers are brought into conversation over an evolving text" (Vershbow, Wark and Wilbur). Along with Wark's book, the Institute has several other projects underway, including an interactive version of the recent Iraq Study Group Report which allows readers to comment on individual paragraphs, a running "conversation in the margins."[5]

What difference does this make? Readers of critical editions have had access to authors' notes and drafts for years. It is not uncommon for readers to glimpse the writing process, but that treatment is given to only a handful of the most famous and researched authors. Moreover, critical editions take years to compile and are always retrospective, and there is the question of what merits inclusion, an issue that Foucault addresses in his attempt to define the *work:*

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[4] McKenzie Wark, 2007, Web page, Available: http://www.futureofthebook.org/gamertheory, 4 January 2007.
[5] http://www.futureofthebook.org/iraqreport/

> Even when an individual has been accepted as an author, we must still ask whether everything that he wrote, said, or left behind is part of his work. The problem is both theoretical and technical. When undertaking the publication of Nietzsche's works, for example, where should one stop? Surely everything must be published, but what is "everything"? Everything that Nietzsche himself published, certainly. And what about the rough drafts for his works? Obviously. The plans for his aphorisms? Yes. The deleted passages and the notes at the bottom of the page? Yes. What if, within a workbook filled with aphorisms, one finds a reference, the notation of a meeting or of an address, or a laundry list: is it a work, or not? Why not? And so on, ad infinitum. (142-43)

With the above example, Foucault has only to deal with notes that were written by Nietzsche himself. Left out are the other marks that might have found their way into a manuscript, notes that were perhaps not made by the author. Should they be considered part of the text? Would they be part of a critical edition?

Web-based, hypertextual projects like *GAM3R7H3ORY* contain traces of reader commentary, but when the monograph is published, those "marginal" comments will be limited.[6] There will be no doubt who the author of the book is. But other Web-native projects are not as clear about authorship. Take for example, the *Wikipedia*, the Web's largest encyclopedia. Launched in 2001, the site relies on reader-generated content; every article was written by, often, amateur and, more often, anonymous contributors. Any visitor to the site can either edit an existing entry or create a new one, a process that opens the door for vandalism and abuse.[7] With over 1.6 million articles,[8] *Wikipedia* is

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[6] Wark has said, though, that certain elements of his readers' comments may make it into his monograph, along with a discussion of the format of the Web site.

[7] In 2006, television personality Steven Colbert, host of the mock-news show "The Colbert Report," challenged his viewers to tamper with the *Wikipedia* article on "elephants." It was an experiment, the comedian said, in reality by consensus or "wikiality." Colbert's call to vandalism caused the editors of the Wikipedia to restrict edits on the "elephants" page.

one of the most visited Web sites online, and academics have begun to question its accuracy. Despite a study, published in *Nature,* that compared the *Wikipedia* to the *Encyclopedia Britannica* and found them to be similarly accurate, the question remains: can an anonymously created text ever be trusted? If we think of authors and readers as the boundaries that define the space between them, then when one of those boundaries is missing, all that is left is unbound space. It is a level of uncertainty that some find uncomfortable.

This kind of "wreaderly" behavior begs the question of just who has the power to create a text in the age of hypertext, the reader or the author? Thanks to sites like the *Wikipedia*, where so much has been accomplished by anonymous contributors working together to create a functional whole, modern critics are left to wonder whether the "author" is even necessary.

And when it seems that user-generated hypertexts are eliminating authorship and individuality, we must remember that the Web is supported by a complex system of economics. Along with giving readers a new way to look at literature and culture, the Web has also provided new models of commodification. In the early 1990s, as the Web became more and more popular, users learned to "surf the Web" and travel the "Information Superhighway." Spatial metaphors abounded as a new "frontier" opened for settlement, and as with any new territorial discovery, entrepreneurs found ways to make money online. This "land grab" was so quick that after just six years, critic Geoffrey

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[8] That's 1.6 million written in English alone; *Wikipedias* exist in 250 languages. The German edition comes in second with 539,000 articles, according to the *Wikipedia's* home page, http://www.wikipedia.org.

Nunberg wrote in 1996 that "access to the Internet has already become so widespread that many of the academics and technologists who pioneered its development have begun to complain about its vulgarization" (Nunberg 13). In the face of early theorists who championed the egalitarian, democratic characteristics of hypertextual networks, the Web evolved around commerce (hence, dot-com). The individual, not the community, was the focus. On an Internet where as many as 60 million users a day[9] choose their reading paths through search engines owned by billion-dollar corporations, the divide between the economics of the individual and the benefit of the community comes into play. Where does the individual intersect with the communal? When a literate society places so much value on authorship, what happens in an environment where the connection between genius and product are blurred?

With this thesis, I intend to look at hypertext and its related electronic writing technologies through the power struggle between author and reader that is excited by networked hypertexts. Will the space between authors and readers be narrowed so much that the two entities merge? Is the author dying off and being replaced by a hybrid "wreader"? Will the author's return to the reading, thanks to the features of many hypertext programs, make a substantial difference in the way readers read? I think that the answer to these questions is yes.

The emergence and popularization of hypertext and its related technologies and derivatives over the past 20 years has caused an anxiety of belatedness in the print world,

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[9] This is according to a memo published by the Pew Internet & American Life Project in late 2005. This number accounts for roughly 41 percent of Internet users daily. Search engine use is also close to topping e-mail as the number one activity online.

as "purists" struggle to hold on to elements of that tradition. Books remain popular because of this resurgence in interest, yet the Web (including Web 2.0) and its style of sometimes frenetic, nonlinear reading have also grown in popularity, provoking reactions from scholars like Lindsay Watters, who believes that silent, sustained reading is the way to deeper scholarship. At the same time, hypertext and the Web are heavy with allusions and references to print. It is a heritage that is hard to escape[10] because it takes readers into unfamiliar territory, the liminal space between print and hypertext.

Authorship, too, must weather hypertext. Just as musicians in the Information Age must face digital pirates who undermine their status as owners of their own work and as directors like George Lucas must face re-edited versions of their own films disseminated around the world, the authors of printed texts must face the fact that their works, once released, may find their way online, where they can be traded easily and without regard for ownership. Is this space between copyright and free-distribution a form of anarchy, or is it egalitarian?[11] Does the institution of authorship face eventual extinction as generations of new "wreaders" forget what pure authorship once was? That depends on whether we believe in the notion of "pure authorship," especially since evidence suggests that notion, along with intellectual property, is only a product of economics and history. The demise of godlike author should not be mourned, but does this mean that the reader should have the freedom to play with texts as she wishes? Can we stand a world without

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[10] See Bookishness, p. 33

[11] See Copyright Issues, p. 70

boundaries between authors and readers, where the space between seems to have vanished, jumped over instantly by a hyperlink?

Organization of Thesis

In the spirit of hypertext, this thesis is split into numerous shorter sections, or lexias. Each will be titled. Though the entire thesis may be read in order, from beginning to end, I encourage the reader to choose his or her own path through the text. By keeping the lexias fairly short, I hope that the reader will be enticed to read more of them. To that end, I have cross-referenced them so that readers may follow the references as they might follow links in a hypertext or trails on a mythical memex.

For those who crave order: the first part of the thesis will deal with how hypertext has emerged over the last fifty years. From its initial conception as a democratizing agent to the commercial dyna-lith it has become since the Dot-Com Boom and the emergence of Web 2.0. The quarrel over the definition of hypertext will be addressed in this section as well. Both editions of Jay David Bolter's book *Writing Space* will be invaluable to this section.

The second section will discuss the emergence of new languages to deal with hypertext, specifically HTML—a *form*- and *aesthetically*-based code-language that has minimized the importance of static text online. These form-based languages enable electronic texts to emulate print in looks, if not in function; so the "bookishness" of hypertext will be discussed here. Essays by Roger Chartier, Susan Hockey, and Michael Joyce will inform this section.

The third section will look at hyperlinks, the defining characteristics of hypertext. These powerful textual devices allow readers to choose their own paths through a reading and give authors new techniques to explore. They also bridge the intertextual space and dynamically create new, never-before-conceived texts. George Landow's work on the rhetorics of departure and arrival will provide the background for this section, as will Stuart Moulthrop's essays on hypertext.

The fourth section will approach the controversy over the digital author and her struggle with the reader. This section will rely heavily on Barthes' *S/Z* and "The Death of the Author," as well as Foucault's "What is an Author?" This section will discuss questions of "writerly" and "readerly" texts and the "author function." Issues of copyright and intellectual property, with minimal references to economics, will also be discussed in this section.

The thesis will conclude on ideas of copyright, intellectual property, plagiarism, and how they are being reconceived thanks to the Web and hypertext. These are issues I feel will drive hypertext (and hypermedia) in the years to come and have the biggest impact on how we read and write online.

I hope that by the end of her reading session, a reader in the humanities will take away a greater knowledge of the history of hypertext theory and better understand how hypertext and network technologies can fit with the goals of the humanities, which I see as to understand the human condition through the various artifacts humans leave behind. As Leroy Searle writes, hypertexts "allow us to see ourselves in thought, and to actively practice it, not in some splendid isolation but in and through others' words" (5). What

better way to understand humanity than a method that allows us to see how we think, how we come to the decisions that drive life and ultimately the course of destiny? The Romantic notion of the isolated, struggling, pining author is dead. The humanities need to reflect the growing intertextuality and cooperative nature of writing that has evolved thanks to computers and their accompanying technologies and become comfortable writing and reading among the blurred remains of traditional binaries.

SECTION ONE: HISTORY

What Hypertext Is

The first step is the hardest. What is hypertext? Or should the question be worded, what is *a* hypertext? The term has been used both as a collective noun, naming a larger class of texts, and to name the individual texts that fall under that heading. The choice of which one gets used often has to do with how inclusive the author feels. Using the collective form indicates that hypertext is an established genre or at least type of text and that conclusions about it can be summarized and grouped under a single banner. For reasons that should become clear, this is not fair to hypertext; it is not unified and resists pigeonholing, as deconstructionists say about their own field: it resists labeling and manufactures, in a way, its own demise.[12] At the same time, strictly referring to *a hypertext* or *a hypertextual document* robs some power from hypertext as a field. This usage implies that hypertext is no more than a certain variety of text, that it does not break enough new ground to have its own heading or label. This too, is unfair because it does not recognize the genuinely unique features that hypertext/s have by virtue of the technologies they with which they are written and read.

So the problem remains how to define these terms. Does it even matter? Since the turn of the century, the word *hypertext* has lost much of its currency. In the 1990s when the World Wide Web became popular, the word was used often, but as time went on and network technologies became common, rigorous terminology slipped into slang.

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[12] See Deconstruction in Practice, p. 65

Hypertext became synonymous with *World Wide Web,* which then, in its own turn, became synonymous with *Internet* until users of the Web dropped the capital letter and came to call an icon on their computer desktops *the internet.* On top of this, so many different, yet related, technologies were invented along with the Web that if there ever was a true definition of hypertext, it has now been lost among a—pardon the pun—web of usages. As hypertext critic Espen Aarseth writes, hypertext is a "fluid, ill-defined concept with unclear borders." True hypertext, he says, is forever and Platonically out of reach because it epitomizes "a technological utopian condition of perfect communication" (Aarseth).

Despite the confusion, a working definition is possible. Hypertext is a text that allows its users to easily leap from one portion of the reading to another text or to a different part of the same text. Under this logic, an encyclopedia could be called a hypertext, though some might debate how "easy" it is to get from one lexia to another. Hypertext gets its most common modern meaning from the inclusion of electronic reading and writing technologies, a.k.a. the computer and its associated networks. However, a hypertext does not have to be connected to a network or to the Internet. Many of the earliest hypertexts and hyper-novels were circulated on CD-ROM, entirely contained on a single disk. The defining quality was not their breadth—though many of them certainly were large—but the linking technology that readers used while reading the hypertext. These links are analogous to footnotes and citations in print, but rather than asking the reader to turn the page of divert her eyes to the bottom of the page, hyperlinks brought the linked material to the reader at her command.

However, in the article that lent its name to the title of this section, Noah Wardrip-Fruin takes a stand against this link-dependent definition. As with other academic terms, he writes, a serious look at hypertext's definitions begins with "the work of the thinker who coined them," Thedor Nelson (Wardrip-Fruin 1). The link-dependent definitions, he says, do not fall in line with how Nelson originally defined it in his own early writings.

More than anything, Theodor Nelson wanted the hypertextual system he envisioned in 1960 to be a method of communication that promoted academic freedom, a goal closely linked to his philosophy on computers in general. He wrote that the "purpose of the computer is human freedom, so the purpose of hypertext is overview and understanding" (Nelson "Opening" 56). Nelson's inspiration came from his thinking about print literature, which for him was already a "connected system of documents." Inside this "docuverse," the connections between fields of study and genres were complex and tangled (Nelson "Opening" 53-4).

In 1960, Nelson began work on Project Xanadu, a system of computers that would have allowed scholars to cite any document in the system at any time while protecting the integrity of the original document. The project's mission statement,[13] states that for almost a half-century, Xanadu has "fought for a world of deep electronic documents—with side-by-side intercomparison and frictionless re-use of copyrighted material." Nelson summarizes the project:

> …proposing an entire form of literature where links do not break as versions change; where documents may be closely compared side by side and closely

[13] http://www.xanadu.com

> annotated; where it is possible to see the origins of every quotation; and in which there is a valid copyright system—a literary, legal and business arrangement—for frictionless, non-negotiated quotation at any time and in any amount. (Nelson "Xanalogical")

Nelson describes Xanadu as being similar to cutting a book into chunks and rearranging the pieces. Though the order and usage of those chunks changes, they remain as pieces of a larger whole. They are not transformed through citation or usage into something different or new. And in the process of all this fair use, Xanadu would keep track of copyrights.

In "Xanalogical Structure," Nelson writes that Xanadu is an "alternative paradigm for a computer universe." He says the Web has corrupted the original idea of Xanadu making it hard to find stable links and reliable citations online. "Fonts and glitz," he writes, "rather than content connective structure, prevail." He goes on:

> The World Wide Web was not what we were working toward, it was what we were trying to *prevent*. The Web displaced our principled model with something far more raw, chaotic and short-sighted. Its one-way breaking links glorified and fetishized as "websites" those very hierarchical directories from which we sought to free users, and discarded the ideas of stable publishing, annotation, two-way connection and trackable change.

According to Wardrip-Fruin's reading, Nelson saw hypertext as a form of hypermedia that works "textually," including the link-based "'discrete hypertext' (of which the Web is one example) and the level-of-detail-based 'stretchtext'" (Wardrip-Fruin 2). By "textually," Nelson means a document that is ultimately *readable* in some way, despite being perhaps an amalgam of various kind of media. Moreover, the new definitions that are coming forward, which include the idea of association-building and "structured knowledge work" are not appropriate definitions either (Wardrip-Fruin 1). Wardrip-Fruin

suggests that scholars of hypertext must disregard these definitions in favor of one that focuses more on the media involved, rather than what is done with/to them (Wardrip-Fruin 2).

There is some benefit to thinking of hypertext as a medium rather than as the way a users work with it. By going back to Nelson's words and defining the medium, Wardrip-Fruin hopes to permanently establish a genre of hypertext. Reading methods, like the hyperlink structure, can change. The book, for example, introduced the notion of solitary, silent reading because the characteristics of its medium, the bound volume, allowed for portability—hence the ability to take it away from others to a room of your own. The bound volume also discouraged tandem reading; two or more people have a hard time crowding around a single book. So the pre-book reading techniques—which of course require a broader definition of "reading" that includes listening to spoken language—changed when the emergent, popular medium offered new possibilities. As books evolved, eventually moving into the realm of print, new reading characteristics developed in reaction to the medium's changes. If this logical order is correct, then Wardrip-Fruin's idea of approaching hypertext as a medium would allow hypertext critics to look at causes rather than effects.

Resistance to Change

At those points in history when one medium overtook another as the chief means of written communication, the older medium never disappeared completely or quietly. Its

supporters kept it alive, much as we see some writers (and professors) loathe to use a computer, preferring the typewriter or the quill pen. Even though it may seem like a good idea, the new medium must overcome the resistance to it, a process that has only become more difficult with time. Print had much less social pressure to overcome when it overtook the handwritten book because the readers of handwritten books comprised a relatively small part of the population (due I suspect to low literacy rates).

Over the past five hundred years, though, an increasingly higher percentage of people have learned to read, increasing the demand for printed material to read. More people reading more books results in a much higher resistance to change. Because of this, hypertext has had a very hard time winning over generations raised in the print world, prompting hypertext designers to find ways to win over the holdouts. And the easiest way to win a book lover over to a hypertext is to make the hypertext both easy to use and booklike.[14] The results are methods for creating hypertexts that work hard to emulate the look, feel, and functionality of printed matter, methods that take hypertext further and further away from being a unique medium. Instead it has become print-PLUS! As Jay David Bolter writes, hypertext is little more than a "supplement to alphabetic writing" ("Writing on the World: The Role of Symbolic Communication in Graphic Computer Environments" 8).

A more full discussion of this bookishness comes later in the thesis. For now, it is enough to understand that hypertext cannot be easily defined. Observation leads to a definition based on characteristics, like hyperlinks and database-driven dynamic content.

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[14] See Bookishness, p. 33

Wardrip-Fruin sees this approach as historically inaccurate and as an analysis that begins with *effects.* He wants to think of hypertext as a medium whose innate abilities lead to those effects, a move that, if successful, would make hypertext into a genre of its own. Yet hypertext designers are not without their own anxieties of influence. To win over print readers, they must emulate print, sacrificing originality for popularity.

Spatiality and Mash-ups

Jay David Bolter writes that computers and hypertext were designed as symbol manipulators that used language and mathematics to produce an expected effect. His 1993 essay, "Writing on the World," pondered virtual reality: the use of computer simulations to recreate sensory input and trick a user into thinking that its simulation was reality. Despite the fact that the actual technology is little closer to being a reality now than when Bolter wrote, the *idea* of virtual reality redefined computers as perception processors, whose goal was "to replace the world as we know it through our senses with another world…telepresence," removing "any sense of difference or separation between the viewer and the view" ("Writing on the World: The Role of Symbolic Communication in Graphic Computer Environments" 3).

Bolter's idea can be expanded to include eliminating the separation between authors and readers and between signifier and signified. This is not a new idea. In 1909, E.M. Forster published a short story entitled "The Machine Stops." In this early science fiction, Forster creates a world in the distance future in which all humans live in underground pods:

> Imagine, if you can, a small room, hexagonal in shape, like the cell of a bee. It is lighted neither by window nor by lamp, yet it is filled with a soft radiance. There are no apertures for ventilation, yet the air is fresh. There are no musical instruments, and yet, at the moment that my meditation opens, this room is throbbing with melodious sounds. An armchair is in the centre, by its side a reading-desk - that is all the furniture. And in the armchair there sits a swaddled lump of flesh - a woman, about five feet high, with a face as white as a fungus. It is to her that the little room belongs.

Every such room around the world is identical, and all of them are maintained by the Machine, a global system that refreshes the air, delivers entertainment, educates the citizens, and (rarely) arranges transportation. The Machine is so old and vast that no one understands how it works.

People in Forster's imagined world speak to each other through something like videophones and have developed a disdain for personal contact. Indeed, Forster writes, "The clumsy system of public gathering has been long since abandoned."[15] The people prefer to say in their rooms, allowing the Machine to supply their every need. In the story, the woman, Vashti, receives a call from her son who wants her to visit him in person. "But I can see you!" Vashti replies. "What more do you want?" Vashti, believing herself so well-connected to humanity through the Machine, cannot see any benefit to a face-to-face encounter.

On one level, Forster's story cautions against relying too much on machines. By isolating humanity from itself and from nature, machines will stagnate the mind and eventually cause the collapse of society. Despite the doomsday scenario, elements of the tale are eerily prescient of the Internet and virtual reality, especially Vashti's fear of

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[15] Quotations are taken from the version of Forster's story found online at http://emforster.de/hypertext/template.php3?t=tms (accessed Feb. 11, 2007).

isolation. Though characters can isolate themselves from the flow of communication at any time by pressing a button, most see it as a waste of time. More important, though, is Vashti's confusion between virtual reality and "real" reality. She knows the difference between the two, but her utilitarian view of life does not include wasting time to physically visit someone when it can be done instantly through the Machine. For Vashti, the image, the representation, is as good as the real. Crossing space is an unnecessary waste of time.

Her near-religious apprehension of the Machine complicates her feelings as well. Though she denies having faith in a god or following any religion, she sees her son's questions about the Machine as mild blasphemies and reacts in much the same way the devout might respond to someone taking their god's name in vain. Vashti even reads from the Machine's manual, the "book of the Machine," daily; and it is the one item she takes with her when she goes to visit her son because its presence comforts and reassures her of the Machine's higher power. Forster's allegory warns the pious against blind faith and also hints that religion could really be no more than a misunderstood creation of mankind. The worship of symbols and images, in other words, is the real waste of time.

Allegory aside, Bolter's essay addresses a similar secular worship of images through text, an appropriate approach considering that Bolter is an expert on the history of print. Images are powerful, and he reminds his readers of the old saying, "A picture is worth a thousand words." Pardon the puns, but in other words this means literally that a picture could be translated into text, not with a hundred percent accuracy, of course, but far more accurately than the reverse: text to image. Writing has recorded not only speech

and thought but also live observations for millennia, but far less attention has been paid to translating text into images (unless you consider the text itself to be an image or glyph, which it technically is). A picture cannot fully capture the meanings present in a written. That is why all those Hollywood adaptations of popular novels fail to satisfy like the books did. Ultimately, images and writing are different kinds of communication. Images are seemingly more "present" because they can be experienced without language. Text, like the human presence in Forster's story, requires more work; it requires effort from both author and reader to cross the space between, and it is vastly more nuanced and complex.

But presence and spatiality play important roles in the history of print too. When people first began to write, before paper was invented, Bolter says people "wrote on the world," on tablets, the soil, buildings, rocks, wherever they could. And from very early on, words and images were combined in the same space, what Bolter calls "spatialized text" ("Writing on the World: The Role of Symbolic Communication in Graphic Computer Environments" 5). An example of spatialized text can be seen during the opening credits of the television series *Rome,* a drama set around the assassination of Julius Caesar. As the show begins, the viewer sees the city of Rome as it might have looked during the time of Caesar. Rather than the bleached white buildings that greet tourists today, the viewer sees what history tells us was once there: illustrations, drawings, graffiti, Latin phrases, representations of the gods, etc. More than that, some of the images are animated. Snakes slither, warriors battle, lovers kiss. The city comes alive. Though the graffiti plays no role in the show itself, its credits exemplify how the

combination of images and text can move writing into the third dimension, a kind of virtual reality that parallels "real" reality. Rather than freezing meaning in place, writing becomes part of the environment. Instead of a metaphor for death, spatialized text connotes life. Writing becomes vital and real.

Some modern hypertexts allow computer users a similar power to write on the world around them. In a project that Bolter worked on at Georgia Tech, software modeled the city of Atlanta and allowed its users to make notes on the digital copy. Some early operating systems were even modeled in 3-D so users could navigate through their personal files in a digital simulacrum of a city. A modern example is Google Earth, a Web site that combines satellite photographs of the earth with a labeling feature. By default, the program marks major highways, roads, and streets, layering them atop the photographs. A realistic representation of the world is thus turned into a multi-layered map. Users may also make their own notes and reference points, creating a personal copy of their world.

Now the question is whether this counts as hypertext or merely software. If we take the characteristic-based definition of hypertext, then Google Earth qualified as one because it contains links to lexias outside of itself. A map point indicating a florist might contain information culled from their phonebook entry and a link to their Web page. Multiple databases and resources are pulled together into one site for easy of use. From that point of view, it is certainly a hypertext, but is that also true from the Wardrip-Fruin media-oriented point of view? Is Google Earth a medium that offers users a unique reading experience, a "textual" experience to use Nelson's words? Well, look at what

Google Earth is: a coordinated blend of the visual and the textual. It pulls information from both its own sources and the entire Web, taking only what it needs and leaving the originals intact, even referring the reader to those sources; and since the pool of information it pulls from is constantly updated, it is rarely out of date. The program blurs the line between different media types, creating what Nelson would call a "hypermedia" environment that is more than any one media alone.

It is original? Not necessarily. This hypermedia document combines elements of existing media, but in doing so it creates a new kind of medium, one designed to replace certain print resources, like atlases and phonebooks. Whereas print is fixed in space on the page, hypertexts like Google Earth remain fluid and malleable. In addition, independent hypertext designers have taken a cue from what Google Earth does and taken it a step further, creating what industry analysts are calling mash-ups, after a similar phenomenon in hip-hop music. Many of these combine Google's features with other sites' functionalities, like one site that automatically plots online housing vacancies on a Google Earth map.[16] Another plots Chicago crime statistics on a Google map, letting users visualize where crime happens and read details about it.[17] This is just one mash-up reporter Robert Hof mentions in "Mix, Match, and Mutate." He writes:

> Suddenly, hordes of volunteer programmers are taking it upon themselves to combine and remix the data and services of unrelated, even competing sites. The result: entirely new offerings they call "mash-ups." They're the Web versions of Reese's ("Hey, you got peanut butter on my chocolate!") Peanut Butter Cups. (Hof)

Hof sees mash-ups as the future of the Web, the epitome of Web 2.0. He writes, "No

[16] http://www.housingmaps.com
[17] http://www.chicagocrime.org

longer just a collection of pages, the Web is morphing into a sort of global operating system.… And now, people are learning to program Web 2.0 with much of the same innovative energy of the personal computer's early days." The benefit, writes Hof, is that users are "seizing far more control of what they do online."

Like the animations at the beginning of each episode of *Rome,* the established texts and layouts of hypertexts do not stay put. This is partly because there is no physical place for them to be fixed, as they exist only in the world of electrons and magnetism. Hypertext is both nowhere and everywhere. Yet like the graffiti in *Rome*—and I use that word, *graffiti,* very specifically as a term for writing or art that defiles existing writing or art—it also shifts and changes because of readers who take it upon themselves to change the hypertexts, to give them functionality they didn't originally have, to seize power that was originally the province of the hypertext's author. The readers take control of the hypertext writing space.

SECTION TWO: LANGUAGE

Form over Function

Spatiality plays an important role in the form hypertexts take. Indeed, thanks to its print heritage *and* its code-based nature, aesthetics are fundamental to hypertext. The markup languages that make the Web possible rely heavily on form. Only by strictly adhering to the code language's established grammar can that language be understood by the computers that process it and, consequently, the human readers. The situation parallels one already familiar to every user of the English language.

In "The Text Between the Voice and the Book," Roger Chartier argues for the importance of punctuation and the "meanings produced by forms" (69). He uses the prologue to Shakespeare's play-within-the-play in *A Midsummer Night's Dream* as an example of how form affects language. When Quince delivers the prologue to the workmen's play, he does so without the proper punctuation, producing a monologue that conveys the opposite of what he intended to his royal audience. The lesson Chartier says we should take is that the written *form* of language affects the possible meanings readers can take from it. For a contemporary example, look to the joke that inspired the title of Lynne Truss's immensely popular grammar book *Eats, Shoots & Leaves*.[18]

[18] Briefly: A bartender and a couple customers are sitting quietly in a bar when suddenly a panda walks through the door. The panda saunters over to the bar, grabs a handful of peanuts from a bowl and munches them down. Then, the panda produces a pistol and proceeds to shoot one of the patrons. The panda stows the gun and exits the bar as suddenly as he entered it. The remaining patron turns a quizzical glance toward the bartender, who merely shrugs and hefts an encyclopedia volume onto the bar and flips it

In print, the author usually rules over punctuation. With that power comes the ability to command some of the text's basic interpretations through the choice of punctuation—where sentences are broken, the use of semicolons rather than periods, creatively using dashes, etc. When an author, for example Cormac McCarthy,[19] purposely alters or omits punctuation, the reading process becomes harder. McCarthy leaves out quotation marks, inviting interesting interpretative opportunities. Readers are thrown into the position of having to take on a portion of what is traditionally the author's job as punctuator just to make sense of the text. Now, whereas in print this can be an annoyance or challenge, in a hypertext the punctuation of a document determines whether it can be read at all.

The most common language use to build modern hypertexts is Hypertext Markup Language or HTML. This language allows computers to recognize certain markers and then parse them in a way most readers can understand. For example, to make text italic in HTML, the author or designer must enclose the word or phrase with markers, or "tags," that indicate how the receiving computer will display the text. So: Word or Word yields *Word* when displayed in software that recognizes HTML. The particularities of HTML allow for multiple sets of tags to produce the same result. While the tags seem more intuitive, as *I* stands for *italics,* the tag stands for *emphasis.* As a broader term, *emphasis* can be read by far more software applications and possibly, with some tinkering, not even displayed as italic text. As with punctuation in print,

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open to the article entitled "Pandas." The patron reads the first words printed there: "Pandas, a large mammal native to Asia that eats shoots and leaves."

[19] See *Blood Meridian* or *The Road* for excellent examples.

readers often take it for granted that a document is punctuated correctly, only noticing when something is wrong or different. Susan Hockey explains that "markup makes explicit for computer processing things that are implicit for the human reader" (Hockey 362).

The obsession with form does not end with markup language, however. It can hardly be called an "obsession" for markup in any case, seeing as how that kind of form is crucial to the formation of the readable text. However, form is an obsession when it comes to "electronic editions" of printed books, other wise known as *e-books.* These electronic texts are designed to be read on a computer screen or portable devices, and despite the hopes of e-book proponents over the last twenty years, this form of hypertext has not become very popular among readers. The standard reason given, though hardly a scientific one, is that they fail the "cuddle" test. People will never abandon trusty printed books because it is impossible to cuddle up on a sofa or in bed with a computer monitor. In other words, by removing reading from the seclusion of comfortable private places and transforming it into a practice that requires almost devotional presence in an uncomfortable place where an intermediary sits between the reader and the "pure" reading (oddly similar to a church or temple's function in religion, to make worship a public, penitent experience). Of course, the technology required to read e-books has advanced since that "test" was first mentioned in hypertext criticism. Computers are small enough now to retire with the reader to whatever private space they deem fit, but Hockey suggests there is more to the lackluster performance of e-books.

She points out that simply deciding how to create an electronic book is

complicated, especially in the humanities and especially if that e-edition simulates a printed monograph. In "The Reality of Electronic Editions," Hockey writes that the most popular and easiest to use code-language, HTML, has problems functioning in the ways humanities scholars want to use electronic texts. Specifically, HTML has trouble generating meaningful results when scholars perform full-text searches on texts. The results do not, for example, distinguish between a word located in a title and one located in a footnote. HTML, whose set of markup tags are strictly regulated, doesn't know the difference between more than the most elementary portions of a document (mainly "header," "body," and "footer"). That's because HTML's primary purpose is to create visually stimulating, not textually rich, material. Jon Bosak and Tim Bray examine HTML's inadequacies more fully. Though it is popular, they write, "it is superficial," concerned mainly with the appearance of the displayed page (Bosak and Bray). Most of the language's tags indicate how to parse text, whether bolded or italicized, underlined or block-quoted. No tags are concerned with classifying lexias or individual words into humanities-useful categories like *title, byline, topic sentence,* or *thesis.* Thus far, HTML has focused on organizing information on the screen rather than structuring it ways that are useful to scholars (Shipman et al.). It makes little sense to attempt to approach the humanities through hypertext; the needed features just aren't there, so scholars leave it alone, preferring to leave hypertexts to the scientists.

Kinetics and Spatial Language

Nelson was not alone in thinking that aesthetics, "fonts and glitz," drive the Web.

Michael Joyce, the author of the nigh-canonical hypertext fiction *afternoon*—which has been reviewed by been reviewed by almost every hypertext theorist since 1991—says hypertext raises both reader and author awareness of the structure of the reading environment, the screen in this case instead of the page. For Joyce, hypertext is "the confirmation of the visual kinetic of reading," proof that the ways readers look at a page matter to understanding (580). He says hypertext "engages working writing with aesthetic and readerly questions about linking" (580). Instead of the fixity and media transparency that are symbolic of print (Landow H-T 2.0 79), hypertext encourages movement and an awareness of the reading environment, the space around the reader and the virtual space in which the hypertext exists. The virtual space's importance is reflected in the spatial jargon that surrounds hypertext: Web *site,* uniform resource *locator,* and Web *address,* for example. Users *surf* the Web and *browse* online documents. The use of words connoting space and travel is common.[20]

Popular culture has adapted this spatial language. William Gibson's novel *Neuromancer* is just one example.[21] Published in 1984, the novel imagines a system resembling the World Wide Web as a kind of parallel reality, a "consensual hallucination" into which a user projects her "disembodied consciousness" (5). Users, hackers, and "cowboys" visit cyberspace, easily "flipping" back and forth between reality and the Web, experiencing both in real-time.

The spaces and geographies of cyberspace and the novel's work are entwined. In the world of *Neuromancer,* the east coast of the United States has grown into one giant

[20] See also Spatiality, page 20
[21] Gibson actually coined the term *cyberspace* in the novel.

urban complex called the Sprawl. When the main character meets a woman whose "accent puts her south along the Sprawl, toward Atlanta" (9), it becomes clear that relative thinking has become more important that specific location. A person's home is located within the whole Sprawl or urban web, rather than in one specific city. The city is no longer a place; the world is instead one linked community with blended cultures and societies (think of the vision of Los Angeles in the film *Blade Runner,* streets filled with both taxis and rickshaws, the amalgam of distinct cultures). As in the real world, geographic *place* in cyberspace is not important. Just like the Sprawl connects all cities, cyberspace links all computers. Space doesn't matter.

The virtual world in the *Matrix* series of films is also similar to Gibson's cyberspace. One interesting note about both the novel and the films is that in both, the virtual world is liberatory. When the characters are disconnected from the network, they are vulnerable. As Gibson's main character Case says, being disconnected meant living in the "prison of his own flesh" (6). In the *Matrix* films, the characters' ultimate goal was freedom from the prison-like virtual world; but to earn that freedom, they had to venture into the heart of the machine. Salvation lies within, so to speak.

Is the network meant to replace reality or to augment it? Arguments could be made for both, depending on how one thinks of the purpose of hypertext. Is the purpose of hypertext and its derivative technologies, as Nelson claimed, human freedom? Freedom from what? Likely, Nelson meant freedom from the prison-house of language and freedom from the piles of paper needed to sustain a modern academic life. Nelson would argue that hypertext augmented reality by providing a steady and dependable

resource for the work that would be done offline. On the other hand, modern Web applications (all based on hypertext, remember) ask users to document and/or live their lives online. Massive multiplayer online games, like *World of Warcraft* and *Everquest* (and to a lesser extent social networking sites like MySpace and Facebook), recreate societies on multiple levels—from the economic to the social. A person who may feel inadequate in reality, trapped in their bodies as Gibson's Case or Forster's Vashti felt when unhooked from the network, may seek a virtual existence where they can exceed the boundaries of the body and often life. It is escapism in yet another, modern iteration.

Both approaches—hypertext as an *augment to reality* and as an *augmented reality*—seek some kind of liberation. Whether it is liberating a person from mind-numbing labor or freeing a person from an intolerable existence, hypertext provides a medium through which to manifest those real world, corporeal desires in a functional language.

Bookishness

Another reason why hypertext languages have thus far focused on appearances is that hypertext is inescapably bound to its print roots. Jerome McGann, as well as other critics like Brian Clark, says this condition is unavoidable because of print culture's massive influence over every form of the "literary." No matter what technologies develop to work with texts, "the literature we inherit (to this day) is and will always be bookish." In other words, electronic forms of text will always be compared to print because print is second nature to literate cultures. The real advance, he writes in "The Rationale of

Hypertext," is that "we no longer have to use books to analyze and study other books or texts" (McGann). And it is this development has threatens to topple centuries of traditional print criticism, in the forms of critical editions, facsimiles, and annotated editions.

Researching with a hypertext, provided the coding language would work with a humanities approach, as discussed above,[22] would relieve scholars of the often difficult-to-use print editions of critical works *and* their innate limitations. For example, four editions of *Hamlet* may contain four versions of the play, all with different glosses. The researcher who wants to write expertly about the play must search through multiple volumes and wade through subtle differences in wording in the print copies. According to McGann, this is the curse of analyzing books with more books. Though printers and authors have developed conventions to force this medium to work for analysis, that analysis will always be limited by the medium. Compared to that model, a hypertext is liberating. Staying with the *Hamlet* example, this means that if a reader wanted to *hear* the song Ophelia sings after her father's murder, the print reader would be out of luck. An electronic edition, though, could play the song. This is of course, one example, but it is an example that shows how multiple media can be merged into one hypertext document. And remember all those versions of *Hamlet* that might be in print? An ideal research hypertext would contain all of them at the same time, perhaps allowing its user to view them side-by-side or in some other useful way.

Despite the possibilities, electronic texts remain prisoners to the heritage of print.

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[22] See Form over Function, p. 27

In “Epistemology and the Metaphor of the Book,” Gabor Forrai explains that it is the obsession with linear order that binds hypertext. McGann’s argument that books cannot be well used to analyze other books is what Forrai calls “linear justification.” He writes, “If A figures into the justification of B, B cannot figure into the justification of A” (218). In essence, Forrai is reminding us that a term cannot be used in its own definitions. Print’s linear, logical hierarchy of terms and ideas makes that kind of circular logic impossible. While it may have been acceptable for ancient philosophers to circle back upon their previous points as a rhetorical strategy, the print-minded reader sees this as an endless chain. They think it must either go on forever or terminate at some claim that “need not be justified in terms of other claims” (Forrai 218)—absolute truth, in other words, the *transcendental signified.* The permanence associated with print is often to blame for the death of this kind of rhetoric: “A book is something that lasts,” Forrai writes. “It is not something that can be rewritten and rewritten again, any time one finds mistakes” (220).

A hypertext, on the other hand, can be corrected “on the fly” and can distinguish editions, displaying them in such a way that they need not be organized “in relation to a central document, or some idea reconstruction generated from different documents” (McGann). One translation of a Derrida essay, for example, does not have to be the focus of a hypertextual critical edition. Electronic text’s extensible structure infinitely accommodates different linkages and points of view, allowing more freedom in reading and interpretation simply by making more material available for anaysis. At the same time, electronic editions “preserve the authority of all the units that comprise its

documentary arrays" (McGann). No one text is the center of the hypertext, and all the ingredients flavor the soup without overpowering each other. The reader chooses what is most useful for a particular reading and proceeds through them. The reading of a hypertext is a contextual process that carries the reader through the reading session as if on a wave of discovery. As McGann writes, the entire process "encourages decentralization."

Nine years after McGann published his rationale, hypertext critic Stuart Moulthrop presented his paper "What the Geeks Know" at the 2005 ACM Hypertext Conference. In that paper, Moulthrop echoes a consensus among hypertext theorists. Hypertext cannot be associated with older forms of literature, not in their shape and form or in they manner they are read. Instead, it must become "the basis for a new version of general literacy" (Moulthrop "What the Geeks Know: Hypertext and the Problem of Literacy" 227) that recognizes its media-specific features.

Moulthrop divides the history of the Web into three phases: development, popularization, and *now* ("What the Geeks Know: Hypertext and the Problem of Literacy" 227). Texts generated in the *now* he calls "third wave" hypertexts, and these hold the potential to rescue the notion of hypertext from the realm of theory and deliver it to the "realm of practical implementation" ("What the Geeks Know: Hypertext and the Problem of Literacy" 229). He is not interested, for example, in some of the claims that hypertext is deconstruction in action.[23] Rather, Moulthrop wonders what all this looks like when it has to be coded into a computer-readable language.

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[23] See Deconstruction in Practice, p. 65

SECTION THREE: HYPERLINKS

Time-Spans

Notably, Stuart Moulthrop criticizes an NEA report that claims modern media threaten reading, both informational and recreational. The report said that modern media favor instant gratification rather than the delayed enlightenment that is commonly associated with books, and of course the connotation here in negative. Anything achieved quickly is not achieved well. Moulthrop condemns this as closed-minded research that fails to consider that electronic writing supplements print, introducing a new kind of selective reading. "With trillions of documents almost instantly available," he writes, "there is too much of nearly everything, so attention must be selective" ("What the Geeks Know: Hypertext and the Problem of Literacy" 228-9). Nelson puts in another way in "Opening Hypertext." He says hypertext has merely provided a system for reading that works the way readers do. Instead of reading linearly, most educated readers skip and skim. Hypertext advances reading technology to meet reading technique (Nelson "Opening").

Not everyone accepts this idea. In an article published in the *Chronicle Review,* Lindsay Waters argues that since the Industrial Revolution, Western societies have been urged to speed things up and increase production. This has led to what he calls a "reading crisis" at all levels of study, a crisis he says is only abetted by the Chomskyian idea that children are "neurologically 'wired' to use language 'completely' in certain ways." Waters asserts that students need methodical lessons if they are to learn to read properly.

Even at the college level, thrift and haste have "pushed aside the pleasure of waywardness in plot and rhyme" (6).

It is ironic that Waters should choose the word *waywardness* to describe writing, since hypertext is all but waywardness in practice; but let that stand. What he really wants to point out is that the traditional pleasure of reading has been replaced by readings that set out with a goal in mind. From personal experience in the classroom, I know that younger students often go into a reading with the idea that it is a chore to be done quickly and with as little energy as possible. They read for information and to satisfy a professor (and perhaps a reading comprehension quiz), but professionals are no better in some respects. The reader who goes into a text with a theory in mind, perhaps New Historicism or Deconstruction, will read for ideas that jibe with that theory and miss a great deal more. Rather than see readers continue to enter texts with preconceived notions, Waters wants to emphasize the process of discovery that he sees as integral to reading properly, and he wants to emphasize rereading, spending longer in a single text before moving on to something else. A preoccupation with the clock is the bane of deep reading (Waters 6).

Time is of special interest when thinking about the World Wide Web. In December 2006, the Web users spent an average of forty-five seconds on each Web page visited (Nielsen/NetRatings). This relatively short span is the result of two factors as interdependent as the chicken and the egg. First, hypertexts like the Web were not designed to hold readers on one page for a long time; they were designed to let readers proceed at their own paces. But if a reader spends a lot of time on one page, she ignores

the links, which are one of the defining characteristics of hypertext.[24] If readers ignore links, there is no purpose to publishing the text as a hypertext. Second, readers enjoy links, and designers know it. Pages are therefore created with little text or text that can be read and understood quickly, like bold headings and lists. The pages' designs cater to the reader's fleeting nature. Seeing that most pages are designed with very little text and that no one wants to spend much time on a single page anyhow, deep reading becomes meaningless on the Web. Readers accustomed to the Web are flighty and easily frightened by long blocks of text.

Waters' critique aims at students and scholars who read "important" works quickly and without what he sees as due consideration; but online reading practices and *offline* reading practices are often lumped together. Readers who spend most of their time reading online learn their habits there and carry them back into the world of print. This is why, I argue, that younger students—raised with the Web in their homes—are having a harder time living up to Waters' expectations.

If the reading methods differ, it is safe to assume that the methods of criticism will differ too. Methods designed for print will not work well with hypertext. The answer here, Moulthrop says, is to develop a practical theory of hypertext. He wants to adapt the awareness of poststructuralist literacy to work with electronic writing—something that can only happen when (if) scholars learn to "think of the digital archive not as a component of other tasks but as a primary site of textual engagement" ("What the Geeks Know: Hypertext and the Problem of Literacy" 230). The time for theorizing about the

[24] See What Hypertext Is, p. 14

Web is over. The time for theorizing with the Web has come.

Instance Issues

Praxis aside, we can start to see here that the space between the author and reader is bridged by hypertext. The author is nowhere to be found in print. The words are isolated on the page and must speak for themselves, combining with the readers' knowledge of the text and the context. The author is physically absent from this interaction. The reader must fend for himself.

Yet networked hypertext allows for instant communication (sometimes) with the author of a text. When a reader has a question, many hypertexts allow the reader to either e-mail or leave a comment for the author, who can then respond. This is especially visible on those miracles of Web 2.0, *blogs.* The resulting dialogue between authors and readers becomes part of the hypertext, displayed along side the author-generated content on the Web, akin to marginal notes in a print volume. The author can use these comments to address shortcomings that readers see in the writing, even possibly editing the hypertext to incorporate ideas suggested by readers. The hypertext is not fixed at all. It is always unfinished.

If it is always unfinished, then the author never really leaves the hypertext behind. She never vacates. With a printed monograph, there comes a time when the text must be declared finished. It must be left alone so that publishers can take over and bind those words in books. The word "binding" indicates exactly what happens. The text is locked up, taken out of the dialogic instant and frozen. The words' living meaning is

robbed from them. Like putting a slab of meat in the freezer, the binding and printing process halts the natural processes that might act on an unfinished text. Revisions cease, and by the time the text comes out of the freezer, perhaps in a revised edition, the thoughts contained in it are spoiled.

Hypertexts are never finished. The words are always fresh. Drafts are always rough, however polished their wordings. But what problems arise when the author is somehow present at the "instance" of reading? Does the reader lose a sense of his own power when the author is always there to guide him to a "correct" interpretation? The space that separated the author and reader when print reigned as the top notch on the technological ladder gets removed (re-placed?). As with a hyperlink, we jump over that "space" and have instant immediacy.

Initially, in the early 1990s when hypertext was becoming popular, this was hailed as a boon for the reading process. What could be better than giving the author a chance to answer her readers? But there's another way to look at that authorial absence. Perhaps that space between author and reader was for the reader's benefit, the space that the reader had to himself, the buffer between the constantly applied "intentional fallacy" and the reader's own interpretations. Now, hypertext has violated that space by allowing the writer back into reading life.

Remember the anecdote about the author sitting in the audience at an academic conference, listening to what he thought was a misinterpretation of his text. His complaint was answered flatly, "You're just one reader." Hypertext upends that idea. Sure, everyone has the technical ability to become an author and then to comment and

influence others' hypertextual publications, but once you write something, the very tools used to author that text provide plenty of features to guarantee that you'll always be considered its author. The hypertext writer can always have the final say, no matter how many comments she receives. Yes, hypertext combined with the features of a modern computer will allow a user to copy/paste that text to somewhere else and to modify it freely, but that's no longer the same text. It's a mash-up, a portmanteau, a derivational work that shares a bloodline with another text but is not the same.

Rhetoric of Departure

As we have seen, hypertext—like all forms of writing—is a site of conflict between authors and readers. What is at stake in that conflict is the meaning that will be taken from the reading. In hypertext, the conflict stems from nonlinearity. Someone reading a hypertext version of this thesis, for example, would see one word in this sentence underlined or somehow else made distinct from its context. But clicking on that word with the mouse pointer, the text on the screen would be replaced with something probably related to that distinct word, perhaps other relevant information or a definition. Many critics see this instantaneous and metaphorical transportation as the most important part of hypertext.[25]

George Landow, perhaps the most published hypertext critic, discusses the Web's universality. Landow writes that, on the Web "the borders and limits of these hypertext documents, their edges, as it were, clearly have to be understood only as fictions, as

[25] See What Hypertext Is, p. 14

agreed upon conventions" (H/T/T 148). The defining characteristic of hypertext for Landow is its ability to cross textual borders. For example, computers often use a folder structure that gives users a sense of organization and hierarchy, but hypertext frees users from that sort of system and reinforces the notion that computer hierarchies are optional. Though the reader might read one lexia in a conventional manner, "once one leaves the shadowy bounds of any text unit, new rules and new experience apply" (H/T/T 148).

Hypertext "permits one to make explicit, though not necessarily intrusive, the linked materials that an educated reader perceived surrounding it" (Landow H-T 2.0 35). In other words, hypertext does not distract readers from their readings. In fact, *distraction* must be redefined, since hypertexts de-center what would have been the principal text. Material that would once have been deemed less important by the reader is put on equal footing with the principal lexia. The electronically linked text exists "as part of a much larger system in which the totality might count more than the individual document" (Landow H-T 2.0 35). Instead of disrupting a reading, hypertexts provide contexts that the reader already knew were there, context she half-expected anyhow.

The chief difference between the electronic link and the printed notation is space. With a footnote, the point of departure from the reading experience is marked with a superscript or asterisk or other small, relatively unobtrusive glyph, as I use superscript numbers in this thesis. This tells the reader that she should look for a corresponding symbol at the bottom of a particular page or at the end of a chapter, at some point that is separated from where the eye was focused. The space the eyes or fingers must cross makes it unlikely that most readers will visit the footnote or endnote. The extra physical

action draws the reader's attention even further from the line of thought they may have been following in the main body of the text. It is a subtle reminder that it is not the reader's line of thinking that is important; it is the author's.

The shift from footnotes to electronic links threatens the intellectual domain of the author by blurring the boundaries of texts and reconfiguring "our experience of both author and authorial property," by reducing "the hierarchical separation between the so-called main text and the annotations, which now exist as independent texts" (Landow H-T 2.0 25). By presenting the reader with options and context, hypertext disallows a "tyrannical, univocal voice" that speaks to the reader from a position of authority. Instead, Landow writes, the voice of the hypertext is "distilled from the combined experience of the momentary focus" (H-T 2.0 36). This is especially evident when hypertext is compared to the world of print. Instead of relying on the authorial voice, the reader must use the mutivocality she is presented with the perform the act of interpretation at the site of reading.

One of Landow's most important points is that, despite all the material that can be included in a hypertextual web, there can never be a complete version or final word. When works traditionally thought of as complete are converted into hypertextual formats, they instantly become incomplete (H-T 2.0 79) because hypertext's links make a text "always open, borderless, unfinished and unfinishable, capable of infinite extension" (H-T 2.0 175). This could be a detriment to the reader, who is caught in what Landow calls a "rhetoric of departure" (H-T 2.0 175), a rhetoric full of comings and goings where the reader can never finish a single text because of hypertext's multiplicity. Stuart Moulthrop

put it another way, saying "links tend to dislocate even as they connect" ("Pushing Back" 662).

But this expansive nature of texts is not a new idea. Jay David Bolter writes that it was print and not hypertext that originally "made textual overload a permanent condition" (Writing Space 90). By textual overload, he means that sensation that there is far more to read than there is time to read it, to be overwhelmed by the number of connections and interpenetrations between texts. To avoid the negative consequences of Landow's rhetoric of departure and textual overload, Bolter argues that readers must be welcomed into a hypertext and situated at their arrival point or points. They cannot, he says, move throughout a hypertext without *some* sense of context because they already "must decipher the system as they read" (Writing Space 61).

SECTION FOUR: AUTHORS AND READERS IN CONFLICT

Mediation

In *Writing Space,* Bolter describes the windows displayed on typical computer screens, common in all modern operating systems today like Windows Vista, Mac's OS X, and Linux. The window is a kind of framing device, he says, that is important to readers' involvements with a hypertext (Writing Space 69). As today's computer users know, resizing a window that contains text causes that text to be rearranged to fit the new size of the window—whether that text is stored on your computer or fetched over the Web. Unlike a printed book, the change in typography is immediate and dynamic *and* is dependent on the preferences of the user or reader. As Bolter says, "the typography is not determined prior to the reading, but is instead a manifestation of the act of reading" (Writing Space 71). The lesson to take is that the hypertextual reading process, the preferences of the reader, play a big role in creating the text, and the space it will be read in, for that instance.

With so many Web users viewing so many pages in so many different ways, Web designers had to come up with a way to combat this perceived inconsistency in display. The answer was CSS, which stands for Cascading Style Sheets. CSS is a method for coding specific instructions for displaying text sent to a Web browser that ignores user preference. In other words, no matter how fine a monitor's resolution or how big their window, the Web page's elements will look the same. CSS pre-formats pages before users read them. Any control the user might have had over how they are displayed is

taken away unless the page's designer specifically includes that option. Through CSS, the author regains the "opportunity to control the procedure of reading, because he or she can program restrictions into the text itself" (Bolter Writing Space 30). Not only does CSS limit the reader's control over a hypertext, but it also allows electronic text to imitate the appearance of print,[26] a move that still lends credibility to a Web site because of the respect print commands.

In hypertext, the author and reader struggle for control of the reading process in a way that print does not allow. Hypertexts native features consistently overturn conventions that centuries of fixed-text print have established. Words and letters become fluid, flowing into the space defined by the reader. The reader can choose the typeface, display size, and colors. The reader, through the use of hyperlinks can nominate any text to be the primary lexia or leave that position vague. Either way, the process of evaluating and interpreting a text falls more and more into the readers' hands. It becomes less a process of deciphering the meaning the author coded into that text and more a process of generating meaning through reader-defined contexts and experiences.

But in the face of this subversion, authors can use specially designed tools to bring the hypertext back under control. CSS can limit a reader's options and make sure that how a page is parsed is far from the reader's thoughts. In this metaphorical power struggle, the author has a vested interest in keeping the medium transparent. When the reader thinks about how the text is constructed, it opens the door to interpretations that the author did not intend, but if the reader is kept focused purely on the words, then the

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[26] See Bookishness, p. 33

number of interpretations is limited. Think of the film version of *The Wizard of Oz.* As long as the Wizard stayed behind the curtain, the mechanisms by which he transmitted his words to Dorothy and her fellow travelers were transparent. As a result, he maintained his power and influence over them; yet as soon as the curtain is drawn back and the mechanism is revealed, he loses that power. His message was no longer mediated by the mechanism that people feared and respected. By circumventing the mechanism, jumping over the space between the "author" and "reader," everyone is able to have a meaningful discourse.

Curiosity Killed the Tradition

Just like Toto in *The Wizard of Oz*, readers are curious. Given the opportunity to peer into or partake in a world that was previously unknown or poorly understood, like the publishing world, they will take that opportunity. It is similar to the idea put forth by feminist author Simone de Beauvoir in *The Second Sex.* She asserts that in the relationship between women and men, men often play the role of masters and women the role of slaves, and in that slave/master dynamic, "Mystery belongs to the slave" (259). She argues that rather than admit the weakness of not understanding women, men invented the myth of the feminine mystique to place the blame on natural phenomena instead of human fallibility.

In complex relationships like the ones between authors and readers, it is hard to draw a line between masters and slaves. Certainly there is give and take on both sides. One is tempted to say that readers are slaves to the author's will as it is expressed in print,

but authors also cater on some levels to their readers—else their profits drop and they cease to be authors. As such, both sides have some wonder and mystery about them; their processes are mysterious and hard to crack. Authors and publishers obsess over what readers want, trying through audience polls and market research to predefine the next breakout genre. The average reader, though, has a harder time learning the ins and outs of writing a book. All the reader typically sees is the inside of a bookstore; the process of writing and making books remains mysterious, and a reader's experience with that world is almost always mediated by someone else: booksellers or distributors or printers or editors. The line of communication between authors and readers are crowded with middlemen.

But even the most basic of mediation, like alphabetical order, can be circumvented by a hypertextual document, like a printed encyclopedia. In 1974, the *Encyclopaedia Britannica* published its fifteenth edition, which included a volume known as the *Propaedia.* This volume fought the notion of an encyclopedia as a depository for short, alphabetized articles by providing readers with an alternative order for the articles. The *Propaedia* was a "vast outline" that reorganized all the knowledge contained in the *Macropaedia,* the more traditional set of volumes (Bolter Writing Space 93). Instead of using the encyclopedia as a reference volume, the *Propaedia* encourages readers to follow a thread of knowledge that wound through the main volumes, constructing cogent, informative essays out of particular paragraphs and entries. Bolter writes that the *Propaedia* challeneged the assertion that alphabetical order is the "canonical" arrangement of *Britannica* (Writing Space 94). Other equally useful orders

coexist with the authorial vision, reminiscent of Nelson's idea of parallel document structure.[27]

Unfortunately, the *Propaedia* was dropped from subsequent editions. Readers found it hard to use, and more often than not it stood unused next to the well-worn *Macropaedia* volumes. Still, it stands as an example of a hypertext in print form and as proof that alternate reading orders and even "incomplete" readings of a major text can still be viable and useful. It also demonstrates that, given the tools to change the texts and the will to use them, readers will seize the opportunity to author part of the reading experience, as Web users do today with the popular online encyclopedia *Wikipedia.*

Barthes' Influence

The reader's freedom can never be absolute. Hypertext does not free readers from all authorial intention. In practice, hypertext simply entangles the reader in a new set of nets "of a different order" (Tuman 60), and it provides a chance for readers to see, as Laura Mandell writes, that authorship

> is not, or not only, a matter of plumbing the depths of one's soul, but rather that it is fundamentally intertextual: it makes tangible in the reading process the fact that authors gaze not off into space but into open books scattered around their work space, or appearing on multiple windows or screens (212)

Writing is a kind of seduction, a deal between the reader and the author in which the reader attempts to get to know the author and vice versa. The reader, of course, seeks to understand what the author has written, but the author's seduction still comes through. The reader is held in a trance by the author's power to weave a narrative, but as in the

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[27] See What Hypertext Is, p. 14

novella "Sarrasine," which Barthes makes an example of in *S/Z,* and as Barbara Johnson points out in her careful reading of Barthes, readers can and do resist the author's seduction.

Referring to the unique structure of *S/Z,* Johnson writes that the "purpose of these cuts and codes is to pluralize the reader's intake, to effect a resistance to the reader's desire to restructure the text into large, ordered masses of meaning" (4). *S/Z* reades "Sarrasine" out of order, along a series of codes and themes that Barthes establishes for this particular reading. This reordering not only explores the power—or ineptitude—of authorial intent, but it also demonstrates Barthes' reading power. He attempts to demolish the power the author holds over the text by refusing to blindly follow the narrative and lose himself in it. His apporopriation of "Sarrasine" displays the characteristics of a hypertextual reading, including his acute awareness of the medium and of his position, as reader, relative to the text.

Barthes' hypertextual reading fulfills what he sees as the goal of a literary work: "to make the reader no longer a consumer, but a producer of the text" (Barthes 4). He goes on:

> Our literature is characterized by the pitiless divorce which the literary institution maintains between the producer of the text and its user, between its owner and its customer, between its author and its reader. (4)

Barthes says texts which exist only to be read—where the act of reading is nothing more than a "referendum" that decides whether the text's ideas are rejected or accepted—are "readerly" texts. The opposite, "writerly" texts, are *"ourselves writing,"* before any ideologies or organizing systems are applied to that writing. The writerly text is always

present, always an action performed, and it always has a "plurality of entrances" (5) that the reader can find. To interpret a writerly text is to recognize its inherent plurality (5).

Barthes acknowledges some tension between *denotation* and *connotation.* Polyvocal texts, texts in which more than one voice seem to speak, follow the path of connotation by acknowledging the existence of multiple, coexisting meanings. The univocal text relies on denotation, supporting one privileged meaning or definition (7). Connotation articulates "a voice which is woven into the text," which corrupts the "purity of communication" by offering relationships within the text that do not necessarily correspond to authorial intent. Denotation, on the other hand, represents the innocence of readerly texts, a fundamental faith in the sentence as communicator of truth and simplicity (9).

But writing and language are far from simple, and Barthes' language in *S/Z* is ideal for describing the Web, which is reflected by the number of critics who quote him. One passage that gets the scholarly treatment often is this one:

> In this ideal text, the network are many and interact, without any one of them being able to surpass the rest; this text is a galaxy of signifiers, not a structure of signifieds; it has no beginning; it is reversible; we gain access to it by several entrances, none of which can be authoritatively declared to be the main one; the codes it mobilizes extend *as far as the eye can reach,* they are indeterminate (meaning here is never subject to a principle of determination, unless by throwing dice); the systems of meaning can never take over this absolutely plural text, but their number is never closed, based as it is on the infinity of language. (Barthes 5-6)

When considered as one very large hypertext, the Web displays the plurality Barthes describes. The Web has no natural linearity. Though individual pages and sites are authored and coded, no one sets the reading order. Readers "enter" the Web through any

number of "doorways." Each page that makes up the Web can in fact be an entry point. From there, readers progress along unique reading paths each time they log on.

Some Practical Problems

So hypertext dissociates the text and author at the same time it makes the reader acutely more aware of the author's spectral presence in the text. At no time, though, can the reader forget that he is reading the hypertext; the medium's interactive characteristics require an awareness of the hypertext *as a hypertext.* Some prefix this kind of self-consciousness while reading with *meta-,* as in *metanarrative.* In this case, the best term for this kind of reading might be *meta-reading.* At any rate, critics in the 1990s believes that one benefit of meta-reading was that the reading experience became more democratic and less hegemonic, but there are some who think that hypertext introduces serious problems instead, especially for pedagogy.

In "Reconstructing the Deconstructed—Hypertext and Literary Education," Astrid Ensslin writes that hypertext theory is seen as the "most appropriate concretization of postmodern literary theory" (311).[28] To teach with hypertexts, professors must realize that they are teaching what has already been deconstructed over the past four decades. Instead of rely on methods and texts that have been systematically dismantled to see how their parts work, students must be allowed to "reconstruct" the old "knowledge structures" to serve as foundations for new knowledge (313). Ensslin believes that newer, more complex thoughts must be built on a solid foundation, and that foundation has been

[28] See Deconstruction in Practice, p. 65

broken by deconstruction. “The repercussions of deconstructivism on teaching and learning,” he writes, “cannot but be called disastrous” (313). He asserts that students can neither be taught nor motivated in an environment where learning is influenced by a theory that depicts “any conventional approach as immanently absurd and ephemeral” (313).

Ensslin sees the answer in the “empowered reader,” who does not antagonize the author but rather cooperates with the author to fill the “semantic blanks” in a text (314). These blanks appear when students in the classroom are asked to learn things they had no way of knowing existed. In other words, students cannot “be expected to want to learn anything the existence or learnabilty of which they are not aware of” (322). The teacher, who Ensslin relates to the author function in this essay, must collaborate with student readers. Rather than killing off the author, Ensslin’s approach lets the author live on as a guide and facilitator, serving as a “counselor, mediator and source of knowledge” (322).

Ensslin’s ideas preserve the author’s role, but they do so at the cost of adding another layer of mediation between the reader and the text. Applied to hypertexts, though, the need for a facilitator is valid. Many hypertexts purposely distort or hide their structures in an effort to seduce the reader. It is a curious position for the reader, like being trapped in a maze with porous walls. The reader can never become “lost” in a hypertext in the traditional sense because no point in the maze is any more important than any other. Tangents do not matter. But the reader can become “lost” because of poor design. This can lead to a sense of disorientation because there is no primary path to fall

back on. A guide or facilitator here could help the reader more easily navigate the hypertext, hopefully with minimal contamination of the reading experience.

The metaphor of the maze is hard to grasp because print possesses few analogues, mostly encyclopedias and dictionaries—which are the most hypertextual print texts because they have features that are analogous to hyperlinks and have no set reading order. Paul Edwards points out that scholars sometimes use a book's table of contents or index to skim the work, and readers often leaf through encyclopedia articles. But these he calls peripheral kinds of reading that are highly circumstantial. They only appear in a few, specialized instances. Hypertext, on the other hand, "makes such a style of reading central, automates its techniques, and creates new ones" (Edwards 236), validating each reader's "private authority" (264).

Bridging the Digital Divide

Contemporary thinking, made possible by literary theorists, depicts the relationship between authors and readers in print as an unbalanced one where authors hold a majority of the power to decide a text's meaning. But hypertext and other electronic writing technologies have made it possible for readers and authors to share more of the creative power and for each role to take on some aspects of the other, producing what Barthes called writerly texts. The reader's experience with a hypertext can now include partially authoring it. This is a drastic increase in power for the reader, and it is in increase that critics like Landow and Nelson predicted would democratize reading and writing.

Yet the Web did not mature democratically. The aging saying--familiar to most research librarians—says that "anyone can put up a Web site," but this required more than a little technical prowess. Instead of the easy-to-use system that Nelson envisioned when he created Project Xanadu, publishing a Web site required the technical capacity to find a Web host and code the pages in HTML. Though these services and skills have become easier to find and master over time, a divide still remains between the digital "haves" and "have-nots."

Publishing a Web site does not mean that everyone will view it or want to view it. To a degree, the democratization Landow and Nelson expected did happen, but that new freedom became meaningless in the face of sheer numbers. Millions of sites were created during the Internet boom in the mid-1990s, and of those, only a few could afford to advertise and promote themselves. The rest continued to exist online, unread or barely read. The situation is similar to what happens to privately published books in the world of large-scale publishing houses and worldwide distributors. What good, one might ask, are the democratizing characteristics of electronic text when the same capitalistic biases of the print world are just as present online?

Mediation and Bias Across the Divide

The turn of the century brought with it a new kind of Web site that offers real hope of bridging the digital divide. The innovations come in the form of dynamic pages and semantic relationships between pages. The content of dynamic pages is generated by software that gathers information as a user views pages on a site. That information about

the user's habits is then used to generate custom pages that are tailored to fit the user's Web preferences. Not unexpectedly, the most famous example of this comes from the field of electronic commerce. Amazon.com, the world's largest online retailer, uses dynamic content to make sales recommendations to its users. The site takes in information voluntarily provided by the users, combines it with that user's history of viewed products and pages on the Amazon.com site, and then predicts which items that the user might wish to buy in the future. Every bit of information gathered the content the viewer will see. No two Amazon.com sessions are the same for every user, even if they view the same series of products.

Outside of commercial uses, dynamic Web pages are growing increasingly popular for other activities, like reading the news. Google, the Web search giant, offers users its news site, Google News.[29] Visitors to the site decide what news will be shown and in what order it will appear on the page. If a user is interested in technology news and not health news, for example, she only needs to click on the "Personalize this page" link. From there the user moves to a "drag and drop" menu that allows them to decide what in what order news items will be displayed, which type of news will appear, how many stories per category, and even whether or not they want she wants to create a "custom" news category. The custom category uses a set of filters that search the Web for news that fit the terms the user decides, an increasingly common practice on Web sites.

There is a distinction to be made between the ways dynamic text is generated for a Web site. Amazon.com's method illustrates one way, tracking a user's movements

[29] http://news.google.com

across the Web site to identify patterns and predict likely future behavior. Google News uses a different way: custom filters that display only the content a user wishes to see. Both create dynamic pages but in vastly different ways. The Amazon.com approach is more invasive and is a somewhat touchy subject for privacy advocates; it is also the reason for Amazon.com's explicit privacy policy. Conversely, the filter method is passive. The user sets her criteria and waits for the appropriate content to find its way through the net. There is less invasion of privacy but more mediation, because while the user can set the filters, she is likely not privy to the inner workings of the software behind the results.

On a Web where millions find information through search engines, those sites' theoretical and practical impartiality is a hot-button topic. The Washington Post reported in April 2007 that Google posted a sixty percent increase in profits for 2006 and according to the New York Times, the company was valued at $185 billion. Internet search is big business, even spawning subsidiary industries that promise to put their clients' listing higher in the search engine results, where they will be more visible to consumers.

A study released in 2000 by Steven Lawrence and C. Lee Giles reported that search engines are "indexing a biased sample of the Web," and that new technologies are "further biasing the accessibility of information on Web." The search engines rank pages by the number of other Web pages that link to them. Consider for example two hypothetical Web pages that both deal with the French Revolution. One of the pages has 25 links pointing to it, the other 250,000 links. The 250,000-link page will be placed

higher in a search engine's ranking, possibly on the first page of results. The 25-link page will likely show up much further down, and the lower it is ranked, the less likely it is that Web users will find it and read it. If no one finds it and reads it, no one will link to it. The situation snowballs, making it difficult for small-scale Web authors to get their pages read. As Giles and Lawrence write, "This may delay or even prevent the widespread visibility of high-quality information." Despite the increasing ease of publishing, it is still hard for the ordinary Web user to get his writing read.

On the other hand, statistics point out a different kind of democratization on the Web. Those looking for documents on the Web are having an easier time finding them, according to Deborah Fallows of the Pew Internet & American Life Project. In January 2005, Fallows wrote that "users are extremely positive about search engines and the experience they have searching the Internet." Readers are finding usable results when they search the Web, and Fallows says filtered search results add to that experience. But Fallows also says it is a reader-beware environment, as many users are unable to tell the difference between sponsored search results—the listings companies have paid for as advertising which often appear above or within other search results—and genuine results. When this sort of counterfeit site or link is used maliciously, it is known as "phishing" and can open the door for identity theft.

Web 2.0

Web 2.0 is a primarily commercial term used to describe the user-friendly Web that has emerged since the beginning of the twenty-first century. This is the Web which

comprises blogs and social networking sites that allow their users to have an impact on the layout of the site. A blog reader, for example, can comment on the author's posts. A social networking site, like MySpace or Facebook, is built from user contributions; the pages designed and maintained by readers make up the whole of the site. But one of the most important developments for Web 2.0 had yet to be fully implemented: the Semantic Web.

The Semantic Web will affect how users, those ubiquitous "readers" of the Web, interact with the online world, giving them far more control over their reading experience and even endow them with some of the powers of textual organization traditionally given to authors. One of the biggest improvements will come in the world of search engines. Modern search engines compare hypertexts based on the words present in them, notably just the text and not multimedia elements like photographs or videos. Ideally, the more words the two hypertexts have in common, the more the documents themselves will have in common (Green), but this sort of comparison does not account for incidences of *polysemy* and *synonomy.* Polysemy is a single word that has several meanings, and synonomy denotes two words with similar meanings. Basically these are the sort of things educated readers would catch through contextual knowledge of their respective languages, but it is the kind of thing non-intelligent computers have an extremely hard time doing. Both of these phenomena "disrupt the simple identity relationship" that information retrieval programs use to determine document likeness (Green 1).

The designers of the Semantic Web hope to build "lexical chains" of words that have similar meanings in the context of the document. For example: *vim, vigor, zip, élan,*

pep, and *vitality* might be classified by semantic software as synonyms for *life.* With this lexical chain, a search engine could find documents that are more closely related to one another. Green describes the task of building semantic links between documents as "trying to discover the inter-textual cohesive relations" (3). Hence the entire lexical chains belonging to the documents will be similar rather than just one or two similar words. The hope is that the meanings of the two hypertext pages will be similar too.

This works thanks to tags that computer networks can read (and search) which describe the content of pages or images or videos. For semantics to classify and organize the entire Web, a huge number of tags will need to be written, and the most readily available source of labor is readers. Though this sounds like a lot of work and responsibility, it is already happening on sites like YouTube, Technorati, and Del.icio.us. YouTube users classify their streaming videos by entering keywords when they are uploaded. The same is true for blog content on Technorati and shared Web bookmarks on Del.icio.us. In all cases, the method for implementing the Semantic Web is not to release it officially like HTML, which you may remember is governed through a central lawmaking body, but to allow popular Web sites to build up databases of tags slowly. As readers read, comment, and upload content to Web 2.0, they are also helping to organize that giant Technicolor Dreamcoat of a hypertext system.

Doubtless, people will disagree over appropriate classifications, and there is also the danger that lexical chains of tags could be arbitrarily created by simply linking a hypertext to an online thesaurus. That would provide an efficient source of synonyms but a source lacking in the depth an empowered reader could bring to the hypertext. Could,

for example a lexical chain created by software explain the word *pharmakos* as Derrida uses it in *Disseminations?* Automated procedures might provide some context, but it is doubtful the Semantic Web's computer elements could make the same sort of links human readers can.

Controversies in the New Archival Medium

For a contemporary application of Web 2.0 and a budding system of semantic tagging, one need look no further than the wiki, a software application that allows the readers of a site to generate and edit the content of the site, either anonymously or through a username system. The most recognizable use of the wiki software is, of course, *Wikipedia*. And while it provides an unsurpassed amount of reader participation in crafting the textual space, it is not without controversy.[30]

As I mentioned in the introduction, tempering and vandalism have been the bane the *Wikipedia* since its immense rise in popularity. If the popular record is so malleable, many wonder, how can any of it be considered accurate? How can an anonymous mass of readers create a text as accurate as the world-famous *Encyclopedia Britannica?* As Johndan Johnson-Eiola and Amy Kimme Hea write:

> What happens if history is erased or conversely if history is made too convenient? Is every history equally viable? Do all histories have equally loud voices? If every text and every view is equally available at all times, critical distance collapses and we are left without a way of reflecting critically on our present; we cannot locate the rupture, and any efforts to discuss the relationships among different hypertexts leaves everyone waiting in an absurdist play for a fictional character who is never to arrive. We require a non-accommodating hypertext, one that allows us a place into which we can push back. (418)

[30] See Introduction, p. 1

When every reader has a voice, it becomes increasingly difficult to hear one voice among the din. The non-accomodating hypertext that Johnson-Eiola and Kimme Hea propose would be one that provides rules and regulations, a firm hypertext in the spirit of Nelson's Project Xanadu. Such systems are in the works, even by Nelson himself, with the goal of assigning credit (or blame) in a more print-traditional manner. DiLoria and Vitali look to return the Web to its globally-writable roots with their software IsaWiki, which promises safe and controlled page editing. They assert that "customization and reuse of other peoples' materials can be the right moves towards and augmented web publishing environment, if and only if they are performed in a controlled and safe way, i.e., with good support for individual merits and authorship" (Di Lorio and Vitali 2) Their system essentially mirrors in code what the *Wikipedia* has recently adopted as policy. On *Wikipedia*, all those who wish to change a page must now register for a user account with the site. There is no way to certify an editor's identity, but the thin veil of even a username is sometimes enough to provoke honesty and integrity on the Web.

But despite an apparent need for attribution—as per the *Wikipedia* scandals—typical Web users value anonymity over attribution, seeing open publishing without citation as the defining characteristic of the Web and of hypertext in general, which, as Johnson-Eiola and Kimme Hea write, "coalesces, it seems, around a wish of what we want text to be—contingent, anchored, slipping, caught in a net, Disappearing" (416).

Ultimate reader freedom on the Web may not be possible, considering the Web's status as mediated hypertext. An observation make by Michalak and Coney is especially important to this theme: "a reader who attempted to play the role of *user* would be

thoroughly frustrated by a document in which the designer had anticipated them to play *maker of meaning"* (180). In other words, the role a reader/user can expect to play is uncertain at best; and in a highly decentralized hypertext there is little in the way of context or semantic linkage to let the reader know her place with respect to the text or to indicate which roles she should play. Michalak and Coney imagine a system in which the reader could chose the role she wanted to play from the start. Only by understanding the relationship between author and reader from the start can a hypertext reader complete the chain of signification and accomplish hypertext's primary purpose: communication (Michalak and Coney 181).

CONCLUSIONS

Deconstruction in Practice

In his afterword to *The Future of the Book,* Umberto Eco reminds us that hypertexts, despite the hopes of utopia-minded theorists, are still limited systems. A hypertext that delves into the works of Percy Shelly, for example, cannot provide the reader with evidence for the existence of dark matter. Eco writes that that who tell us we can do *anything* with a text or hypertext are "irresponsible deconstructionists" (303). Deconstruction, Eco and many other critics believe, ruins the possibility for a meaningful text by dispersing any potential readings in the wind. How, they wonder, can any reading or interpretation stand if it is constantly torn apart by theory? Even worse, deconstruction is natively self-destructive. It is an anti-theory, in a way. Critics working under the auspices of deconstruction are not as interested in defining a deconstructionist method of reading as they are in showing how *constructed* every other theory is. To scholars whose minds are built on carefully delineated spaces and hierarchical thinking—a more scientific approach than a human approach—deconstruction does not compute.

But deconstruction, as I've loosely defined it here, makes perfect sense in the context of a hypertext network. The connections between documents and words, lexias and ideas are fleeting. They are all consciously constructed pathways designed by an author or even, thanks to Web 2.0, a wreader; but there is also an element of the unknown. Just as a deconstructionist reading of any text has the potential to produce an unforeseeable outcome, following a link on the Web can produce an unpredictable

reading experience, especially if the hypertext is vague about where that link will lead the reader. It may lead to a dead end or to a random page. Two of the highest profile uses of the random link is on the search engine Google's home page with its "I'm Feeling Lucky" button and on the home page of the *Wikipedia*, where a single click takes users to a random page from the gigantic encyclopedia.[31]

In fact, one of the most interesting features of hyperlink creation has been around since the early days of the Web: the random hyperlink. It used to be seen when such things as "Web rings" were popular. The creators of these groups of thematically-similar sites would put a navigation menu on their pages offering to take the user to the "next" site in the ring or to a random one. The increase in database-driven Web sites has only fueled the potential for random linking and for context-dependent links, even though the Web ring has gone out of fashion. A reader's position in the hypertextual environment, her context, can now determine what choices she has for continuing her reading path.

Loss Pequeño Glazier writes, "Links bring to the text the riddle of discovery experienced by the anthropologist stepping onto the soil of a previously undiscovered culture … Once a link has been taken, it is no longer a link but a constituted part of the already traveled narrative; the link loses its potentiality but, in doing so, opens up the possibility of other links. And what if some of those links fail? What we have is not a failure of the internal system but a triumph of internal workings over any possibility of external order" (3). Links, he writes, are "faults in the monolinear imagination," and it is this failure that truly distances hypertext from print (Glazier 3). Links can be as limited as

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[31] See Introduction, p. 1

the page designer's imagination or as infinite as a computer's uncanny ability to generate a random number.

Criticism: Flattening Culture

The applications of hypertext that computer users see every day, the Internet and World Wide Web, have the potential to let them create the global village Marshall McLuhan writes about in *The Medium is the Massage.* McLuhan says that in that kid of community, social structures like the state and university become pointless. Borders are gradually erased by providing everyone with equal access and equal opportunity. The outcome, some predict, is technological utopia powered by user-generated culture. It is an idea that is not without its critics.

"The Web 2.0 dream is Socrates's nightmare," writes Andrew Keen, "technology that arms every citizen with the means to be an opinionated artist or writer." A strong critic of user-created content, Keen says that the move towards a wreaderly Web "worships the creative amateur: the self-taught filmmaker, the dorm-room musician, the unpublished writer." He relies on comparisons to Plato's infamous banning of poets from his Republic and on comparisons to Marxist communism to make a simple point: when people are allowed to do whatever they like, when a society permits them the leeway to do anything, the result is a community lacking in cultural depth and sophistication (Keen).

Keen's chief argument, upon which he will elaborate in his forthcoming book *The Cult of the Amateur: How Today's Internet is Killing Our Culture,* is that the traditional

trappings of culture—film, literature, art, and music—will cease to reflect the world around us and begin to be highly personalized. Keen sees it happening already. Social networking sites like MySpace encourage social interaction, but the user chiefly interacts with his own page. Bloggers spend the most time organizing their own page instead of reading others' blogs. Shoppers on Amazon.com have personalized selections presented to them, tailored to fit their habits. Search engines are even beginning to get in on the act, learning from a user's past searches to provide "more relevant" results (and advertsing).[32]

Examples abound, and Keen determines from them that Web users will see less and less of the world as others see it. He believes this will lead to a flatter cultural landscape and, ultimately, even more space between people and a more fractured world. His argument echoes in part what Walter Benjamin writes in his classic essay "The Work of Art in the Age of Mechanical Reproduction." Benjamin says that works of art have always been reproducible, but that mechanization added something new to the mix. The work of art is removed from the presence of the viewer in both "time and space" (1107).[33] Moreover, mechanical reproduction removes art from ritual: "To an even greater degree the work of art reproduced becomes the work of art designed for reproduction" (1110). Benjamin and Keen both argue that this is a reversal of art's function. For Benjamin, art becomes political. For Keen, art becomes common, vulgar. In both cases, technology removes the mystery and magic from art.

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[32] Contrast this against Mediation and Bias Across the Divide, p. 56
[33] See Time-Spans, p. 37

Trespassing and Other Violations

While Keen's conclusions about the state of culture are dependent on age-old, subjective definitions of "art" and "culture," hypertext's fallout has in some ways driven a wedge between different groups of people. Whereas on a theoretical level, readers and writers have been brought closer together by hypertext, on a practical level economics have still produced a hierarchy that divides technological haves from the have-notes: those with computers are divided from those without them; those with broadband conflict with dial-up users; successful Web developers dominate those who can't afford premium advertising and design. It is the kind of digital divide Keen predicts as the result of a "democratic" Web.

In this relationship, the roles are changed. We are no longer talking about authors and readers; we refer to consumers and producers. And while traditional thinking may hold that demand drives producers, thanks to context-driven advertising consumers are now at the whim of the Web's major advertisers—a situation that Eric J. Sinrod says parallels legal issues in the physical world.

Sinrod writes that digital intrusions are closely analogous to trespassing to chattels, the violation or taking of a person's property. The most glaring example is, of course, unsolicited e-mail (spam). These uninvited messages arrive in the inboxes of Internet users around the world at an astonishing rate. A study conducted in late 2005 by the Messaging Anti-Abuse Working Group determined that 80 percent of e-mail sent in the world is unsolicited. Along with spam, the trespassing analogy has also been applied

in court cases to unwanted cell phone text messages and even to the distribution of spyware, software that maliciously opens the user's computer to security risks.

The idea behind the trespassing argument, Sinrod says, is that the Web is a network of private stores or sites, a view supported by some courts. The common belief is that the actual server machines on which those sites are stored are private property. The owners allow "visitors" to partially access to their property, the public Web site—a gateway often abused by human and robotic burglars. Other courts, though, have adopted an even more physical view. If a "visitor" does not cause real damage to the victim's computer equipment, there was no trespass or burglary.

The important thing here is not to focus so much on the legal issues and the economic issues but to see how ingrained spatial thinking has become in the digital world. Not only is it present in the names we have given to hypertext's most basic features[34] but it is also present in the way we think about cyberspace.

Copyright Issues

In a video uploaded to the video sharing site YouTube, Kansas State anthropology professor Michael Wesch suggests that one of the traditions digital text forces us to rethink is copyright.[35] Three writers took up the issue of authorial property in the February 2007 issue of *Harper's,* demonstrating that notions of who owns ideas have changed in response to the spread of hypertext technologies. The first article was written

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[34] See Kinetics and Spatial Language, p. 30

[35] Michael Wesch, The Machine Is Us/Ing Us, 10 February 2007, Streaming video, Available: http://www.youtube.com/watch?v=NLIGopyXT_g, 10 April 2007.

by photography Sue Meiselas and painter Joy Garnet and tells the story of the dissemination of the Molotov Man image thanks to the Web. The second article, by Jeremy Lethem, plays with Harold Bloom's "anxiety of influence."

The story of the Molotov Man image began in Nicaragua in 1979 when Sue Meiselas photographed a Sandinista fighter throwing a burning Pepsi bottle. Less than a year later, reproductions of that photograph began appearing on things like matchbox covers and posters. For 20 years, the Molotov Man image spread around Nicaragua as the symbol for the revolution until Garnet "found" the image in 2003 and turned it into a painting (57). Not long after she began showing the painting, Garnet received a letter from Meiselas' lawyer asking that Garnet seek permission every time she wanted to reproduce the painting.

Fearing a possible lawsuit, Garnet removed a digital copy of the Molotov Man painting from her Web site, but it was already too late. Web users had already appropriated the image. Reproductions and derivative works circulated freely around the Web.

Neither of the women foresaw that outcome. It was a surprise to Garnet, but it was something of an insult to Meiselas' ideals. She writes that, for her, the issue was not so much one of copyright but one of context. She sees her role as a photographer to be the opposite of Garnet's role as painter. Where Garnet seeks to decontextualize an image, Meiselas contextualizes it (56). Meiselas understands all too well the ease with which an image or a text can be decontextualized in the Internet age, but she takes a stand. She says "if history is working against the context, then we must, as artists, work all the

harder to reclaim the context. We owe this debt of specificity not just to one another but to our subjects, with whom we have an implicit contract" (58).

But Meiselas does not address who owns the rights to that image. Does she, the original photographer, own it? If she does have a valid claim to that image, what exactly does she lay claim to? All derivative works? Since Garnet created a new image from her photograph, is that new image necessarily related to the original? The question goes double for those derivative works created in the digital realm and posted via hypertext to the Web, where those secondary and tertiary artists may have no idea where their starting image came from. When the medium crosses from the tangible to the intangible, does an artist's claim become any less valid? The same questions can be asked about other forms of art, like literature and music. When does imitation cross the line into intellectual trespassing?

Plagiarism

Jonathan Lethem deals with intellectual trespassing, what those in the literary fields might call plagiarism, in his article "The Ecstasy of Influence." The article, whose title is a clear play on Bloom's seminal book, carried the subtitle "A Plagiarism." For good reason. At the end of the article, Lethem provides a key where his readers can learn precisely where he "stole" his key lines and terms from. He says the history of literature is rife with examples of this phenomenon, known as "cryptomnesia" (59). When performed knowingly and lovingly, we call the phenomenon imitation or flattery. When it is done unknowingly we call it an accident or a shared cultural memory. When that sort

of borrowing happens knowingly but surreptitiously, we call it plagiarism, a violation against authors' "tiny preserves of regard and remuneration" (63).

Lethem looks at the same issues prevalent in the Molotov Man as they apply to writing. He criticizes the state of American copyrights, calling them bloated in "both scope and duration," restrictions that he says technology shows to be "bizarre and arbitrary" (63). Copies, he writes, were once easy to locate and count; but as in the case of Garnet and Meiselas, technology has made "copies" so common we don't even think about them unless we feel wronged in some way by them. Usually those wronged are the authors, who do see art and culture as a commons, which Lethem argues they are. Creations, like Molotov Man, easily cross into common usage and become a part of the transmission medium itself. Those creations left alone, counted as the "price of a rare success" (68). If an author or artist believes that she will receive perfect recompense for her work, she is deluded. Lethem goes on:

> The dream of a perfect systematic remuneration is nonsense. I pay rent with the price my words bring when published in glossy magazines and at the same moment offer them for almost nothing to impoverished literary quartiles, or speak them for free into the air in a radio interview. So what are they worth? (68)

For Lethem, thoughtful reading is a violation of the sanctity of the text, an "impertinent raid on the literary preserve." Like the ill-fated scientists in Michael Crichton's *Jurassic Park,* authors cannot hope to control the interaction between readers' imaginations and the words set free in that literary preserve (64):

> Any text is woven entirely with citations, references, echoes, cultural languages, which cut across it through and through in a vast stereophony. The citations that go to make up a text are anonymous, untraceable, and yet already read; they are quotations without inverted commas. The kernel, the soul—let us go further and say the substance, the bulk, the actual and valuable material of all human

> utterances—is plagiarism. For substantially all ideas are secondhand, consciously and unconsciously drawn from a million outside sources, and daily used by the garnerer with a pride and satisfaction born of the superstition that he originated them. (68)

The End

Johnson-Eilola and Hea warn that we should never try "writing the history of hypertext as if it has a beginning or an ending" (423). The medium's built-in characteristics push it toward a never-ending chain of signification, an infinite text with uncounted possibilities. Yet, as Glazier argues, that system cannot work perfectly if it will be a hypertext. If all points of it are equally accessible and readable, it is at heart no different than print. Ironically, the idea of an infinite hypertext actually limits that hypertext. The ambivalent nature of hypertext makes it, as Jerome McGann writes, similar to "that fabulous circle whose center is everywhere and whose circumference is nowhere" (McGann). So rather than define what hypertext is, which Noah Wardrip-Fruin showed is a nearly impossible task, it is easier to define what hypertext (and in a wider sense, hypermedia) does.

There is little question that computers and networking technologies have changed the way the world works. Without delving back into the economics of access and the digital divide, I will say that the Web has altered how many people around the world live their lives—despite the theories of critics like Theodore Roszak[36] who attempt to deconstruct our "need" for computers and the Internet. Not only has it profoundly

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[36] Theodore Roszak, The Cult of Information : The Folklore of Computers and the True Art of Thinking, 1st ed. (New York: Pantheon, 1986).

impacted everyday life, but hypertext has also given literary theorists new ways to look at the media and institutions we once took for granted.

All of the arts, Northrop Frye argues in *The Educated Imagination,* are based on simple divisions. In his book, he imagines a person stranded on a deserted island. That person makes simple distinctions, Frye says, between himself and the world around him. As time goes on, the castaway makes further distinctions between himself, the natural world, and things that might be useful to his budding society. The castaway forges his closest relationship with those things he can use, but he never forgets the natural world that once threatened his existence. Art, Frye writes, is an attempt to bridge that gap, to once again become part of the world that he came from. All the myths and stories common to a society are derived from this initial separation.

Writing too is based on separation, the separation from the person and the creative power of the author. The nature of that relationship is defined in this case by the medium through which the relationship is conducted: writing. Writing perpetuates the separation by transmitting language over distance and time. The author does not have to be present for her words to be read and understood. The silent page of printed or written text has replaced the intimacy of listening to a pre-literate bard or storyteller.

The benefit of writing—after its mechanization—was, of course, reproducibility. A printed text can be disseminated for more efficiently than an oration. Writing also leaves a record, upon which scholars of later eras can build their own ideas. In that way, writing provided the scaffolding for modern scholarship, even for the modern definition of humanity if you believe Harold Bloom's ideas about Shakespeare. Yet that authorial

distance, a boon for so many years, slowly became a detriment to underprivileged voices that could not afford to put their words into print. The space that served scholarship and science, and through them the rest of humanity, for centuries began to divide the author and reader even further as economics and politics began to play a larger role in worldwide practices of reading and writing.

An overabundance of similar voices in print combined with advances in political thinking in the 1800s and 1900s to create resistance. In literature, which we are primarily concerned with here, that resistance surfaced in literary theory—a self-aware rereading of the texts that brought them into question. This came to a head around the middle twentieth century with the rise of poststructuralism and then deconstruction. Roland Barthes, Michel Foucault, and others started to question the author/reader hierarchy. The space between the author and reader was reconceived as a social construction, a product of the Romantic Period. Those critics saw that the space between them was false; writers were just readers in disguise, and readers could be writers with the right access.

That access is at stake here. Hypertext and hypermedia technologies, pioneered in the 1960s and popularized in the 1990s, provided the tools for readers to take an active role in the creation of the textual world. The software and hardware advances that have come either to create hypertext or to serve hypertext have given average people the chance to publish their writing to an immense audience; and unlike print, which sets its words as if in stone, hypertext and hypermedia allow for free play (the heart of Derrida's view of deconstruction). Unlike the line-for-line and word-for-word reproduction print

offers, hypermedia allows its users to more easily create derivative works, sometimes to such a degree that the original work is lost, decontextualized out of existence.

The practical result is that more voices are heard/read by more people, which ideally creates a more democratic world—though economics still plays a factor in access. The theoretical implications are that hypertext and hypermedia, employed with networking technologies, especially via modern Web 2.0, applications, have closed the author/reader gap.

What comes next? That's the biggest question of all. One example might be the novel writing project that Penguin Publishing and De Montfort University embarked on in early 2007. The project is called "A Million Penguins." The designers are hoping to find out whether the venerable novel can survive the "crowdsourcing" phenomenon that has made Wikipedia such a success. Any visitor to the novel's site can edit or rewrite a part of the novel, having agreed to follow Penguin's rules of etiquette of course. The question is whether "small pieces loosely joined" can result in a complete, coherent novel with a believable narrative voice and, most importantly, a lack of ego from its authors. The site's information page says, "We are used to the romantic notion of the artist or the novelist working alone in an attic room, or in the shed at the bottom of the garden. As James Joyce memorably put it, the artist forges in the 'smithy of [his] soul'" ("About"). Will "A Million Penguins" reveal a new form of the novel?

Will you help reveal it?

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