In Burton’s situation at Lake Taganyika, the heroics of discovery were particularly problematic. Burton had been so ill he had to be carried much of the way by African assistants. . . . While the ordeal required to make the discovery is unforgettably concrete, in this mid-Victorian paradigm the “discovery” itself, even within the ideology of discovery, has no existence of its own. It only gets “made” for real after the traveler (or other survivor) returns home, and brings it into being through texts: a name on a map, a report to the Royal Geographic Society, the Foreign Office, the London Mission Society, a diary, a lecture, a travel book.

Mary Louise Pratt

There is a new profession of trail blazers, those who find delight in the task of establishing useful trails through the enormous mass of the common record.

Vannevar Bush (commonly cited as the founder of hypertext)

Composition teachers introduced the computer into writing classes, at least in part, as an additional way to support process-based pedagogy—a tool that allowed teachers to deny momentarily the static product of a printed text. The fluid characteristics of electronic text separate the complex, recursive activities of “writing” and “reading” from the static artifact of “print.” Unfortunately, the move from typewritten page to the more malleable computer memory and display often make the dichotomy between process and product more pronounced than before; the dynamic nature of computer text stands in sharp contrast to the fixed print text. The virtual, fluid computer text is only an intermediate step for many computer-based writers, because the text often must be frozen into print: the computer is a sculptor’s tool; the print text is the finished sculpture.¹

Nowhere does the opposition between page and screen seem more drastic than in the use of hypertext in composition instruction. While an individual print text exists as an implicit line, hypertext resembles a network.² In print text—or print’s offspring, the paged-up/paged-down word-processor file—writers attempt to construct a privileged reading order. Printed texts, to students, are commonly seen “as a program for reading,” the ordering of pages alone seeming to indicate the form of the mental text (Kaplan and
Moulthrop 8). But in hypertext, writers construct multiple, networked organizations across the body of the text. Hypertext readers "navigate" this network text by choosing among several offered paths leading to and through numerous text "nodes"—an indeterminate chunk of text, normally the size of a paragraph. At each node the reader is offered text to read (the node) and also choices about which node to read next (the link-marker). The process of reading a hypertext is something akin to reading a text and, at the end of each paragraph, instead of moving to the paragraph directly following, choosing among a number of paragraphs that might be read next. Instead of the text conceptually connoting a line (as in the simple reading of a novel) or inverted tree (as in the outline organization offered by tables of contents and section heads), a hypertext both conceptually and literally exists as an interconnected, multi-linear network of nodes and links.

In such a text there are many possible concrete instantiations; in an important sense, each specific reading of a hypertext is "written" by its reader. Although some hypertexts and hypertext programs allow readers the capability to write their own nodes and links into another's text, even relatively restrictive hypertexts are experienced differently (in both the mental and the concrete sense) by different readers, depending on which nodes they have chosen to read (and in what order) and which nodes to skip.

Hypertext is not a completely revolutionary and radically unfamiliar way of reading but "an almost embarrassingly literal embodiment" of contemporary theories of textuality—theories arising from postmodernism, social construction, and reader-response criticism (Landow and Delany 6). But unlike linear text, hypertext makes literal and visible many of the concepts proposed by these theories: not only can the text be deconstructed in the reader's mind or in a secondary, parasitical text, but also visibly on the computer screen (Bolter; Kaplan). More than any previous text technology, hypertext encourages both writers and readers—roles we might now provisionally combine under the label of hypertext "writer/readers"—to confront and work consciously and concretely with deconstruction, intertextuality, the decentering of the author, and the reader's complicity with the construction of the text.

In hypertext, control explicitly shifts away from the author, who begins to lose both the need and the opportunity for the great degree of control an author has in print because the hypertext writer's task is not to provide a narrow, fixed product but something closer to a space for conversation with other texts, readers, and writers (Bolter; McDaid; Slatin, "Hypertext"; Nelson, Computer; Johnson-Eilola, "Overview"). In renegotiating the location of control in hypertext, readers might begin to see the computer as an active participant in the processes of writing/reading (Slatin, "Reading" 870). Although giving the computer some control over textual activities may seem technocentric (Papert; Hawisher), such a characterization may actually serve to bring "text" more in line with process-based writing pedagogy (Johnson-
Eilola, "Structure"). As the focus of control is dispersed, composition pedagogy can take advantage of hypertext to encourage conceptions of writing and reading that are simultaneously product- and process-oriented instead of primarily one or the other.

This notion of redistributed control, I argue below, holds both empowerment and danger for hypertext writer/readers. If composition theorists and teachers wish to encourage a conception of text as always a hybrid of both product and process, artifact and activity, then hypertext appears to offer fertile ground for exploration. At the same time, we must, with our students, reflect carefully on this new terrain we are exploring, controlling, and constructing. As literacy and cultural theorist Mary Louise Pratt highlights in her discussion of travel writing and linguistic contact zones, writing is often an act of naturalized conquest or appropriation labeled as “discovery” (Imperial 202). To complicate our own concerns about hypertext, the “terrain” here is not the “uncivilized” land of Central Africa in the late nineteenth century, or even the “alien” landscapes in which contemporary European/North American travelers move; the terrain now is the sea of information generated in our modern technological society—what is popularly referred to as “cyberspace.” If we can, through the vision of theorists such as Pratt, begin to see the colonialist tendencies in our own approaches to other cultures, we can also begin to gain awareness of the ways in which we may be colonizing ourselves and others as we begin to write, read, and live with (and within) electronic information spaces such as hypertext.

This self-critical mode becomes especially necessary when we begin to consider another, more tangled vision of hypertext, one that “text as a process” may lead to. As the locus of control slides away from the writer, the writer/reader becomes a cyborg, both materially and intellectually. Although even the (often unconsidered) technological aspects of print-based writing and reading might be cast as the necessary, temporary creation of a mechanical/organic self, hypertext forefronts the cyborg in ways that usefully problematize our relationships to technology and society. My use of the image of the cyborg, drawn primarily from the work of feminist biologist and cultural theorist Donna Haraway, attempts to provide a critical vantage point (or points) for composition theorists and teachers who wish a way to explain and transform the cultural and technological activity of writing. Although I want to work with the concept of hypertext as an ideological “terrain,” the landscape of hypertext differs in crucial ways from the conquered lands discussed by Mary Louise Pratt: the terrain of cyberspace exists simultaneously as out there (on the screen as well as in the objects and people named in the text) and in here (within the mind of the hypertext writer/reader). Haraway’s story of the cyborg parallels Pratt’s notion of “autoethnographic” texts written in the zone of contact between two distinct cultures—the texts in which “people undertake to describe themselves in ways that engage with representations others have made of them” as “a
selective collaboration with and appropriation of idioms of the metropolis of the conqueror” (“Arts” 35).

For both Pratt and Haraway, there is no return to innocence. For Pratt, teachers and others should study “the operation of language across zones of social differentiation” (“Linguistic” 60). For Haraway, the subject/object of study and the roots of social and individual action are more explicitly internal: “By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are cyborgs” (66). Haraway’s cyborg works not by rejecting technology but by taking it up and internalizing it in ways subversive to cultural domination.

The cyborg provides an important complication for compositionists: the machine-organism entity is necessarily partial and contradictory, not looking for the Edenic perfect communication medium, but for ways to appropriate, subvert, and resist totalization and domination within our own culture (Haraway 93-94). In addition, using the term “cyborg” in a positive way—an act that intentionally invites the judgments “blasphemous” and “ironic”—forces open to question some normally submerged aspects of the fundamentally technological nature of much of our lives (Haraway 65). This essay is not a call for technological “progress” or, conversely, Luddism. This essay tries to remind us that we are neither moving forward to utopia nor backward to Eden; we are doing something else entirely—but, to a great degree, we are failing to think critically about what that something is and failing to consider our technological activities in a deeply social way. Considering hypertext use as a cyborg activity may help to productively complicate what is a common vision of computer-text-as-hero in an emancipation/domination epic.5

This vision is explicitly stated in Vannevar Bush’s writing on the “memex,”6 in which Bush characterizes hypertext writing/reading as the activities of “trailblazers” in the land of information; the trailblazers do not primarily write new nodes of text, but construct successively linked pathways through preexisting material: they map (and colonize) the terrain of cyberspace. (Even the act of spatializing abstract information—calling a linguistic text a space—constitutes the first step in this conquest.) The genre is that of the nineteenth-century “monarch-of-all-I-survey” (exemplified by the work of explorers such as Sir Richard Burton) who “discover” new lands despite their previous settlement by the “uncivilized” natives, who are often presented as sub-human (Pratt, Imperial 32-33). Such conquest, for Pratt, “models the extractive, transformative character of industrial capitalism” (Imperial 36). In Bush’s “memex” (the precursor to hypertext) the travel story and advanced capitalism meet explicitly in the role of the “trailblazer” (or Apple Computer’s “knowledge navigator”) hacking a path through the modern information frontier.

Distinguishing characteristics of the modern version of this informa-
tion-travel genre are Jacques Ellul’s “technique,” an obsession with technical efficiency over all other values; and Jean-François Lyotard’s performativity principle, where the worth of an utterance “increases proportionally to the amount of information about its referent one has at one’s disposal” (47). Although Lyotard claims that “grand narratives” are dead—expiring in the realization that the Enlightenment project of freedom through total scientific knowledge relies on a utopian story existing outside of scientific inquiry and, therefore, a grand narrative that cannot in the end allow science to totalize all knowledge—Stuart Moulthrop relocates Lyotard’s work to the information-as-capital worlds of cyberspace (“Paragnosis”; see also, Ulmer). In these new realms, the reader/writer of the hypertext voyages out over new information, the quest to recover, neatly categorize, and control new territory in the form of a finished, graded essay. The warrior returns, the King or Queen welcomes, the prince or princess marries the conquering warrior, and the sun sets under the credits. This is not even necessarily a story that the technology tells, but often one we tell. We both write and are written; the stories we tell and the stories that tell us are both inside and outside these technological information spaces and the technologies themselves.

Hypertext and Process Pedagogy
Much of our work is less obviously futuristic and mythic. Many composition instructors still view the computer as a transcription tool, a conception that may prevent them from using the computer as effectively as they might (Kiefer 121; Klem and Moran; Moulthrop, “Politics”). In casting the computer as a tool oriented toward print, writing teachers may be extending their process-based pedagogies while missing the possibility of also reconceiving the process/product dichotomy, the possibility of creating a process-based product.

The subordination or disappearance of the fluid text in the final step of writing represents a fundamental difficulty with the process paradigm in composition theory and practice: the process shift has not gone far enough yet; composition theory still requires a corresponding product shift. If the computer is viewed as a medium separate from print—affording/forcing/encouraging different types of writing, reading, and thinking activities—rather than as a tool for producing old media, the noun and verb forms of “writing” might begin to collapse into each other more than they have so far.

Cast this way, the process vision of hypertext writing—both the mental text-in-revision or the fluid hypertext—attempts to force a rethinking of one of a writer’s greatest concerns: controlling the passage of the reader through the text. As John Slatin points out, the static, well-ordered, unitary text still constitutes one of the bases for our ideas of how to write and read (“Reading” 871). Likewise, composition theorists such as Linda Flower maintain that expert and novice writers are separated by, among other things, their control over the writing processes: writers set out with specific goals that will allow
them to "make something happen" (*Problem-solving* 5). Flower, for example, asserts that good writers are able to "pull" an outline out of an associative network of ideas (95). Good writers, then, control their readers by controlling the sequence of topics in the text. In this view, both writing technology (index cards, pen and paper, typewriter) and a writers' activities (brainstorming, outlining, and other heuristics) are "tools": they are taken out at key points and applied to ideas in order to create a textual artifact.

But as Robert Brooke points out in his reading of Flower's work, "control" is a deconstructive hinge that can be forced open for a reexamination of our commonly held conceptions of writing and reading. According to Brooke, Flower privileges "in control" over "out of control" even though "'out of control' is always a part—even a primary part—of writing processes in her work" (410). Flower apparently posits a second, meta-self that controls the subconscious processes of writing in order to maintain control. In this view, writing is not a "way of thinking," but somehow a translation of thought into graph.

The point is not that "control" is (or should be) absent from the processes of writing and reading, but that these issues are often overly dichotomized; the technology-as-tool (or even heuristic-as-tool) view may be limiting, a point that even Flower recognizes in her later work ("Context").

**Hypertext and Cyborgs**

Hypertext extends Brooke's postmodern critique across another dimension: not only must the writer always be partially out of control of his or her own processes, but the writer can (in theory) no longer so fully control the reader's path through the text, or even the contents of the text itself (Joyce, "Siren"; Bolter; Moulthrop, "Politics"; Landow and Delany). But the writer's partial loss of control does not translate directly into an equal amount of new reader control. In hypertext, the computer becomes an active participant in structuring and navigating the text. Although some of the computer's control is a result of the original author's manipulations, many controlling characteristics of a hypertext are the result of software and hardware activity. The computer manages shifts in structure across writing/reading time, responding to readers' movements through the text. In a hypertext such as Carolyn Guyer and Martha Petry's *Izme Pass* or Michael Joyce's *Afternoon, a story*, as the reader makes navigational choices in each node, if/then/else structures hidden in each link partially determine which node the reader will see next. These control structures vary the consequences of clicking on the same word in repeated readings of the same node depending on what the reader has previously read; identical navigational choices within a single node visited multiple times may result in radically different outcomes for readers.

In granting some amount of control to the machine, I am not arguing that the computer is intelligent; I am, rather, suggesting that the interaction
between human and machine-text requires that we view reading and writing hypertext as cyborg activities—products that are also processes. The cyborg also serves to open up writing and reading more fully and visibly to postmodern-influenced strategies because of the ways in which postmodern theories conceive of language and literacy.

**The Construction of the Subject in Language**
From a postmodern perspective, language operates as a system of pure difference, words taking on meaning only by virtue of each word’s relationships to other words in language. To use an example drawn from Saussure (whose early work foreshadows many contemporary theories of language such as deconstruction and psychoanalysis), the word *sheep*, as commonly used, does not in itself bear meaning like a pipe bears water or a package bears a gift; there is no concrete or completely fixed link between word and thing or concept. The English word *sheep* and the French *mouton* seem to have the same value, but their difference is seen when *mouton* is compared to the English pair for the animal *sheep* and the food *mutton*. As Saussure wrote, “The difference in value between *sheep* and *mouton* is due to the fact that *sheep* has beside it a second term while the French does not” (116). The basis of language in a system of difference is present in this way (but not immediately noticeable) at the level of day-to-day speaking and listening.

One important corollary to the present-day conception of language as a relatively closed system of signifiers is the important ways in which subjectivity is seen as being constructed in (or like) language. “What seems to us as a stable world is actually nothing more than the effect of... constant renewal, of the ceaselessness of the discursive positions that provide us with our subjectivity...” (Silverman 214-15). For a speaking/hearing subject to take its place in this system, a language user must identify with and fill up with meaning relative differential terms such as *I*, *you*, *here*, and *there*. These terms are filled not with an actual object, but by an image: *I*, for example, signifies a self-image and *you* signifies an internally constructed image of the other. The *I*, as such, is not a concrete object but a place-holder, a way for the subject to take its place in a closed system of difference. This place-holder allows people to construct or assume a subject position in discourse (and different positions in different discourses) and, at the same time, constantly reminds the subject of its lack of a real connection between itself and the *I*. The subject trades its being for linguistic meaning (Heath 82). The subject’s position continually “fades” under this reminder of lack, so the construction of subjectivity is a continual process of renewal. This process of identifying with the place-holders is called “suture” in psychoanalytic and cinematic theory.

*Suture*, according the Stephen Heath, “names the relation of the subject in the symbolic which is its join in the chain” (106). This process is both negative (the recognition that the “*I*” is relative and the consequent desire to take up a place in the signifying chain) and positive (the construction of an imaginary
place in the chain to suture over the lack of a real, concrete position in the signifying chain). This is not to say (as some might think) that there is no reality, no people, no meaning, only that we must actively construct ourselves continually in multiple (and sometimes contradictory) discourses—or that we must passively accept (and suture ourselves into) positions that are offered to us by other discourses.

One form of power in this confusing (and seemingly paralyzing) view of language lies in the way it can help people realize how they are constructed as subjects in language—not that they might avoid this construction, but in the Althusserian sense that they might gain awareness of the operations of ideology as a discursive process (Silverman; Eagleton). The suturing of the subject into discourse is implicit in the very learning of language, but narrative film and text illustrate the operations of suture most effectively (Silverman 198). In conversation, the speaker is the I and the listener is you (positions the listener must reverse to construct an understanding of another's speech or writing). Even in narratives that are not given in the first-person mode, viewers or readers are encouraged to identify with the subject-positions offered by the text. The suturing of the subject into cinematic discourse, according to Silverman, rehearsed "the history of the subject" (203). In narrative film, theorists such as Silverman and Heath assert that the reader often is forced to passively (rather than interactively) assume the position of an I that is "manufactured elsewhere" (Silverman 197). The I of the film or text that the viewer must "fill up" is the I in the position of the machine (Benjamin 228).

Viewers assume a subject position in a narrative film via the viewpoint of the camera, among other things. One of the most striking devices for encouraging viewers to suture themselves into a cinematic narrative is based on the shot/reverse-shot sequence. Shot 1 commonly shows a visual scene. The person viewing the scene in the theater, in order to follow the story, identifies with the (unseen) person whose vision the viewer borrows, suturing him or herself into the discourse. The unseen person is the speaking subject, and the viewer assumes the position of the spoken subject. But that suturing also involves the realization (whether reflected on or not by the viewer) that there are things beyond the frame of the film; viewers do not, for example, see the person whose identity they are assuming. Shot 1 signifies another, as yet unseen, shot—one of the speaking subject. The spoken subject's lack of control over the film brings about the desire to discover the "self" (the one viewers have sutured themselves into). The speaking subject "has all the attributes of the mythically potent symbolic father: potency, knowledge, transcendent vision, self-sufficiency, and discursive power"—things for which film-goers experience lack, because the film allows them no control (Silverman 204). To resolve this tension, a film often substitutes a stand-in for the all-powerful subject, the formerly invisible person shown in subsequent, reversed field of shot 2. Viewers then discover
an imaginary subject with whom the spoken subject can identify in order to satisfy desire.

Although early film theorists maintained that narrative cinema must always work to hide its control over the viewer (by quickly resolving desires with techniques such as the shot/reverse-shot formation), films such as *Psycho* are even more effective at controlling viewers because they violate this rule, instilling in viewers the desire to know the identity of the speaking subject (whom the spoken subject identifies with) while often denying the easy resolution of the desire. Even as viewers become partially conscious of the way in which they are controlled, the tension of desire is heightened.

On one level, hypertext seems potentially empowering in this theoretical perspective because the hypertextual movement of following links from one node to another forces subjects to recognize something of the operations of literacy technologies, the material aspects of the apparatus into which they must situate their own subjective position. In every individual hypertext “reading,” each linked-to node unconstitutes one subject position (the previous node) and reconstitutes another (the new node). This reconstitution requires that the subject reconcile the gap between old and new positions. In order for suture to operate successfully, the subject must say “Yes, this is what I see” when she or he assumes or constructs a position within the system. Awareness of this suturing, in addition, can then lead the subject to be able to say, “But this is not the ‘I’ that was in the previous discourse.” It is in the recognition of the process of suture that resistance becomes possible (Silverman 199; see also Seitz 818).

Gaining awareness of the suturing process—instead of merely desiring it—is not necessarily automatic. Particularly in hypertext, each time the subject is able to say “Yes, that’s me” there exists the potential to consider the current subject-position as that of god-author spoken by the discourse, existing not within the discourse but above it, on the symbolic (and material) promontory of which Mary Louise Pratt writes: “What Burton sees is all there is . . . the landscape was intended to be viewed from where he has emerged upon it” (Imperial 205). Such invisible re-constructions represent the implicit co-optability of hypertext writer/readers. The subject is spoken by the first-person narrative of the author(s) of the cyberspace in the person of captain of exploratory voyages, with the link-anchor as site of departure (Ulmer; Harpold, “Contingencies”; Landow, “Relationally”). This is a place, like the travel writer’s newly discovered land, de-populated and ahistoricized, that exists only to be discovered and recovered by the conquering explorer (Imperial 205).

For these reasons, even when a hypertext appears explicitly fragmented, the navigation from node to node may operate in a manner similar to that of the cuts between shots suggested by some theorists of classical narrative cinema: rather than empowering readers by making them aware of the (necessary) activity of suture, these cuts may act to heighten the tensions by
which narrative exerts power over readers as they desire closure. Suture never operates to bind a subject completely to a single position; although hypertext may remove one type of control inherent in literacy technologies, cyborgs are also, simultaneously, partially sutured into the discourses of the classroom. Even in hypertexts that do not explicitly afford a narration (such as large texts containing more or less impersonal "information"), writer/readers may impose a narrative structure on the text. Where the totally controlling environment of film or print text may implicitly call out for deconstruction, hypertexts allow a form of control on the part of the writer/reader—a distinction that may discourage people from thinking more deeply about precisely how free they are to apply that control. Although the small, flat screen of the computer appears to be inherently less prone to sensory involvement than the darkened atmosphere of the wide-screen theater, the interactive nature of media such as hypertext and cyberspace may compensate for or even intensify the psychic involvement of the computer user (Stone 106-07).

As Stephen Heath observes, the jarring effects of partially revealing the ways in which the text attempts to construct a passive viewer/reader may actually act to psychically bind the subject even more fully (87). Similarly, Terrence Harpold asserts that in hypertext,

> Navigation follows a looping path returning to the gap, supported by anticipation, and a corresponding retrograde movement that encircles the subject's pursuit of meaning. The center of the gap—and the focus of the pursuit—is the subject's fading. ("Threnody" 175)

As hypertext writer/readers, we desire closure not only in the story, but also in the way the story is writing us.

The general narrative of the information frontier—the feeling that the text will or should afford closure—is something we must become more aware of, in hypertext discourses as well as the discourses of our classrooms, student-conferences, and writing/reading assignments. We—both teachers and students—are trained by print to look for closure, and our training encourages us to look hard for closure in the new media. Even a hypertext veteran like Michael Joyce admits attempting, with some difficulty, to read a student’s hypertext journal as if it were written linearly across the flat planes of a wirebound notebook ("New" 13).

As Joyce rightly recognizes, there’s something contradictory about trying to evaluate—let alone fix a numerical grade to—a hypertext. But it is the teacher’s task to evaluate, to mark, to pass some sort of judgment, at the very least to accept some authority and responsibility for the activities of the classroom and society at large: rejecting this role completely is out of the question in our current institutional and social climate. More importantly, from an ethical perspective, many of us feel we can help our students learn something. So we cannot completely abandon the unequal authorities
constituting the teacher-student relationship. But we need to continue, as we have before hypertext, to question the idea that the teacher can gain full knowledge of a particular text or student. In some ways, hypertext may encourage that feeling—that information contained in the hyperspace provides a full vision of reality, that by linking in more and more material, we can arrive at a timeless truth (Harkin and Sosnoski; Rosenberg). On the other hand, what hypertext can contribute to the project of rethinking our relationship to texts and students (and the world) is the medium's explicit parallel to deconstructive readings: indeterminacy, multiplicity, and partiality are, at times, perhaps more encouraged for hypertext writer/readers than is possible in print. But we must realize that removing print is not, in itself, liberation from closure or control: the cyborg itself is both a socially and technologically contested site.

Being Written as Cyborg: War Machines and Nomads

The need to tell stories, coupled with the genres we've learned from print, urge us to make the virtual information space into the backdrop for tales of voyage, discovery, and necessary endings (usually happy). The insertion of the writer via cyborg into this type of computer environment (hypertextual or virtual reality) resembles Paul Virilio's war machine, the "animal body that disappears in the superpower of the metallic body to annihilate time and space through its dynamic performances" (62). This is one of the key junctures in the story of the cyborg: "speed" can become the method for conquest as it supports the narrative drive for suture (this translation is not necessary, only common). Suture does not operate merely by being invisible; it operates more effectively as the terms of the narrative are heightened, as each "node" in the hypertext points outward to other nodes; readers must compulsively follow links in order to arrive at the "promised plenitude" (Silverman 204) at the other end of the link, a cyberspace version of colonialism.

From the State's perspective, this tale of conquest is a useful one: communication becomes of the utmost importance in the war against space and time, the battle to claim and control new territory (Virilio 107; Deleuze and Guattari; Haraway); the winner is the fastest, the one able to cross, divide, and control the most terrain in the smallest time. As the frame disappears, as the writing/reading subject becomes more sutured into the computer's discourse (moving, as O.B. Hardison, Jr. prophesied, from cyborg to sentient but non-biological robot [333-43]), people come to resemble objects whose only goal is to gain complete speed, to cover territory in order for the State to subdivide and hold it through force, legislation, or consent (Virilio).

This is one of the deepest dangers of writing-as-cyborg-activity: when the discourse in the computer encourages totalization, discourages reflection on the limits of the frame except to increase the drive toward revealing more
information (the link marker operating to signify "more"). The technology both shows the divisions in the text and offers the writer/reader the possibility to suture those wounds on his or her own—but the technology and/or particular uses of the technology often do not encourage reflection on what is signified by the gap itself or even the act of covering the gap, often only encouraging the writer/reader to seek the satisfaction of closure. One of the paradoxical effects of hypertext is the notion that any text in this medium is always being deconstructed by the reader and, simultaneously, binding the reader more fully to a preexisting context than is possible in the isolated text produced by print cultures, which can refer to each other but always exist as separate entities (see, for example, Landow's discussion of a hypertext web including both text and critical commentary on James Joyce's *Ulysses* [*Hypertext* 4-5]). The hypertext, in Bolter's terms, "takes us beyond the paradox of deconstruction" by asserting on its own the "play of signs, intertextuality, the lack of closure" (166)—but by shortcutting deconstruction, hypertext might in fact discourage readers from going beyond the limited "deconstructions" offered by the text. A hypertext such as Michael Joyce's *Afternoon, a story* obviously connotes deconstructive theories: Joyce's text is a dense web of 539 nodes of text connected by 950 links which cannot be "read" and "known" in the same sense as a linear text. But Joyce's text is also, in the end, physically closed to subsequent readers, who cannot add text or links, who may not see that *Afternoon* is only an allegory of deconstruction. The sum-total of all nodes and links of such a hypertext should not be seen as fulfilling (and exhausting) but hinting at deconstructive readings.

It is necessary that we—teachers and students—reflect on the significance of gaps, that we resist the semi-passive acceptance of the subject positions of a hypertext and our classroom discourses, even if those subject positions are multiple ones.

The war machine itself—the speed and range of virtual movement attained when the writer/reader becomes the cyborg—can become a new site for contradiction and resistance. In their writing on nomads and war machines, Gilles Deleuze and Félix Guattari work to separate nomadic uses of the "war machine" from its use by hierarchical systems of control: "the State." In this view, "war" is not necessarily domination but also possibly liberation, with violence an extraneous (although sometimes necessary) term: the most common "violent" act of a non-State-held war machine is the destabilization of boundaries, both physical and psychic. The war machine's object is war, in the common sense of the term, only after the war machine is appropriated by the State (513). Like cyborgs, war machines and nomads operate by continual de-territorialization, by the breaking of boundaries and sites, by resistance to totalization, by schizophrenia. Nomads, the "inventors" of the war machine, exist in opposition to the State's drive for control of movement across boundaries, holding space without counting it, treating locations as "relays along a trajectory" rather than as finite goals (371, 380).
Like the deconstructive activity of writing/reading hypertext, the nomad operates "in an infinite succession of local operations" (Deleuze and Guattari 383). The war machine is by general nature disruptive of the State's goal of structured control. However, the war machine constantly offers itself to being coopted: the State adopts the nomads' war machine—the subversive and decentralized program of guerrilla warfare—in order to open up a space for occupation, a space to be subdivided, limited, controlled. But, potentially, "Turning the war machine back against the nomads may constitute for the State a danger as great as that presented by nomads directing the war machine against the State" (419). State space is "grided," composed of "preset paths between fixed and identifiable points" (Massumi xiii).

As if this view were not already complicated enough, capitalism operates through the schizophrenic breakdown/reassertion of control: advertisements work by rupturing traditional boundaries only to, in the end of the narrative, bind the viewer/reader's desire to products—the closure in this case is not print, but purchase and consumption (Deleuze and Guattari; Eagleton; Poster; Baudrillard). The "meanings" of object-products are broken down and reconnected to various images by a variety of groups (not only the producer, but also the consumer and society as a whole) so that a whole lifestyle can be purchased in the compact signifier of the object (Hebdige). The war machine embodies a necessary (and perhaps empowering) contradiction, a perpetual motion of de-territorialization and re-territorialization, "the line of flight that creates, or turns into a plan(e) of organization and domination" (Deleuze and Guattari 423). Writer/readers in hypertext can exist at these dangerous edges, fleeting, in process, attempting to write across the boundaries between in-control and out-of-control; they are potentially—but never necessarily—what Cynthia Selfe terms "nomadic feminist cyborg guerrillas" attempting to inhabit, politicize, and subvert hierarchical control of information spaces. Both we and our students can work to recognize the potential of this new medium as well as the dangers of the tendencies to which we might succumb. We need to see the interconnectedness and incompleteness of stories, while also acknowledging the importance of localized, provisional stories in constructing projects oppositional to unequally empowered relationships (Laclau and Mouffe; Giroux). We need to hold open the function of the text as process. These are all, of course, warnings we've heard before from reader response, social construction, and deconstruction. But the terrain here is different: what looks like terrain is constantly shifting, what looks like process often moves toward product, what seem to be openings become constructed as closures and conquests.

Observations on Control in Cyborgs: A Return to the Writer/Reader
No one—teachers, students, people—is ever completely subjugated by a single discourse, emancipating or dominating. And stories are indispensable.
to all of us, perhaps more so than print itself; the cyborg itself is unabashedly a story. Totalizing, “grand” narratives may be dead, but smaller, provisional narratives are important in uniting individuals in their opposition to oppression. But we must take care in the stories we tell, how we read the stories we see on the screen. We must avoid totalization through compulsive linking. To use Moulthrop’s terminology, we are only now learning to write and read “multiply” (qtd. in Bolter 142); we still need to learn to live in what Michael Joyce calls “the city of text” (“New” 14). We must remember there’s always one more story, and one more after that, and that they all intersect in infinite ways both in and between cyberspace and “the real world.” In Joyce’s words, we must work at “resisting what flattens us, re-embodying reading as movement, as an action rather than a thing, network out of book” (“Notes” 11).

There are two important ways to consider hypertext in relation to the cyborg: teachers and theorists can encourage students/users/writers/readers to see hypertext as the machine-tool that allows them to conquer new frontiers; or teachers and theorists can encourage students to see hypertext as the machine that breaks down, resists totalization. The first view, cyborg as perfect system, to some extent encourages hypertext writer/readers to be spoken in the narrative of domination of reality, and it attempts to define the cyberspace as a closed system, a single discourse (in the sense of the earlier word, cybernetics). The second view, cyborg as nomad, might help us to acknowledge and add to the text, speaking other, tangent and tangled discourses, simultaneously speaking and being spoken. We should endeavor to see the cyborg in Haraway’s terms: as something that operates in the midst of breakdown and noise, a paradoxical subject/object resistant to perfect communication and control and neat endings.

In writing instruction, if we consider hypertext as a medium for process-based communication, we must also consider print-text holdovers; our print-based rhetorics are often unsuitable. We still need, as Moulthrop asserts, “a rhetoric of activity” (“Politics” 260). Our frequent product orientation—in the use of hypertext environments (even in cyborg-process) as necessarily or normally a step toward print—encourages students to see hyperspace in potentially disempowering ways. Even when the discourse(s) of hypertext appear fragmented, writer/readers may continue to desire closure, the end of the narrative/voyage—even if they must map narrative closure onto a medium inherently resistant to closure. The cyborg is a process, not a product or tool, an activity not relegated to the mechanistic production of finite artifacts.

Obviously, we cannot abolish print—modern society does not permit such an move; even if we were “allowed” somehow, there are many reasons why we would not want to abandon print. Cyborgs, as Haraway writes, “are the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism. But illegitimate offspring are often exceedingly unfaithful to their origins” (68). We can work to create environments that,
in the words of Ernesto Laclau and Chantal Mouffe, affirm

a "ground" which lives only by negating its fundamental character; of an "order" which exists only as a partial limiting of disorder; of a "meaning" which is constructed only as excess and paradox in the face of meaninglessness—in other words, the field of the political as the space for a game which is never "zero-sum," because the rules and the players are never fully explicit. (193)

In such a field we and our students may learn more of the complex but necessary ways in which we both write and are written.

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Notes

1 An earlier version of this essay was read at the Eighth Annual Conference on Computers and Writing, held in Indianapolis from May 20-23, 1992. As both negation and admission of the irony of publishing a print essay asserting the value of resisting closure, I thank the following friends and colleagues for their insightful commentary on, criticism of, and encouragement toward various drafts of this essay, in the hopes that this text also resists closure: Cindy Selfe, Jennifer Slack, Marilyn Cooper, Robert Wood, Diane Shoos, and two anonymous reviewers for the Journal of Advanced Composition. This essay was written while I was being supported by a generous fellowship sponsored by the Department of Humanities at Michigan Technological University and the Ford Motor Company.

2 Even print texts, of course, can be both written and read in somewhat non-linear ways. Indices and extratextual citations, strong readings and deconstructions are all instances of structures and activities developed to overcome inherent limitations in print. Hypertext attempts (with a mixed degree of success) to remove these limitations at the level of technology. For broader introductions to the theory and practice of hypertext, see Smith; Nielsen; Conklin; Bolter.

3 “[S]ocial spaces where disparate cultures meet, clash, and grapple with each other, often in highly asymmetrical relations of domination and subordination” (Pratt, Imperial 4).

4 The apparent spatial nature of hypertext is almost universal in not only the work of technical/functional hypertext theorists (Begoray; Hara, Keller, and Wiederhold; Wright and Lickorish), but also composition and literary theorists (Bolter; Johnson-Eilola, “Trying”; Harpold, “Threnody”).

5 Although the use of cyborgs seems heavily reliant on the recent popularization of science fiction writers such as William Gibson and films such as Terminator 2, these incarnations are fruitful in the manners in which they expose problematic social issues such as technological use (Stone; Mouithrop “Paragnosis”) and gender/family relations (Cooper and Shoos; Pfeil). My own use of the term here attempts to help both writing teachers and students foreground the ways in which technologies are both constitutive of our lifestyles—in both negative and positive manners—and in which the negative aspects can be resisted from within.

6 Bush’s memex—which he wrote of in the July 1945 issue of the Atlantic Monthly—is commonly acknowledged as the precursor to modern hypertext; it is a “mechanized private file and library” in the rough shape of a desk sporting “slanted translucent screens ... a keyboard and sets of buttons and levers” augmented by microfilm and cameras (qtd. in Nelson, Literary, 1/50). Computer-based, working hypertext systems were first developed in the 1960s by both Ted Nelson (Computer; Literary) and Douglas Englebart (Englebart & Hooper).

7 Although Ellul locates a portion of the rationalization and valorization of technical efficiency with the conceptual integration of person and machine and the mechanization of living
activity (for example, Taylorism), this must be distinguished from the particular use of "cyborgs" here: the cyborg as it is seen in the current essay resists rationalization, integration, and perfect efficiency (6).

The terminology here is drawn from Martin Nystrand's "On Teaching Writing as a Verb Rather than as a Noun: Research on Writing for High School English Teachers" and from similar observations about the object/activity distinction in the terms "writing" or "communication" in Calvin Schrag (21) and Louise Phelps, especially the chapter "The Dance of Discourse."

See also work by cognitive psychologists and linguists such as van Dijk and Kintsch; Hobbs 28; and Grimes 56, 180.

Works Cited


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