

CYBERSPACE, CYBORGS, AND ADVERTISING: APPROACHES TO TEACHING CRITICAL ANALYSIS

Sibylle Gruber

Illusory Reality: Machines in the Making

Theorists of gender and the body view individuals' experiences of their own bodies as socially constructed, in juxtaposition to approaches which hold that the body is ontologically present to itself and the experiences of the (always unitary) 'self' that inhabits it (Stone, 92).

Recent scholarly discussions on computer technologies have looked at the possible symbiosis of machine and human, the destabilization of current power structures, and the disruption of reality and virtuality¹. Many of these discussions are influenced by postmodern ideas of fragmentation and shifting identities which are also often seen as promoting shifts in current concepts of power and authority. In this paper, I look closely at how instructors and students—undergraduate or graduate—can learn from questioning early postmodern approaches to new information technologies which promote an almost unadulterated enthusiasm for the subjectivity of virtual experiences. I argue that we need to encourage students to look closely at specific representations of technology to strengthen the argument that postmodern ideas of fragmentation and shifting identities do not preclude the continuation and endorsement of existing power structures in virtual or real space.

Despite valid theoretical arguments calling for a symbiosis between human and machine (Haraway, Stone), constantly changing power relations in online discussions (Canagarajah,

Gruber, Romano) and possible new online venues for women and other groups traditionally excluded from many positions of political and economic influence (Gerrard; Hawisher and Sullivan; Braun), I show that we need to move from the theoretical to the practical by carefully evaluating the impact of the many presentations and representations of online technologies on how students see themselves as part of or separate from the “technology revolution.” Although postmodern and ambiguous in some sense, online representations can endorse political, social, economic, and gendered power structures that continue oppressive and exploitative practices. Four advertisements from publications geared toward educators model possible interpretations of online presentation and representation for use in the classroom. The first two ads (Compaq and Dell) promote hardware sales while the second two (Computer Curriculum Corporation and Datatel) try to sell software packages. Certainly, the interpretations provided here are not the only ones. Depending on previous readings, discussions, and assignments, topics addressed here might not be addressed as thoroughly in a different setting. Instead, these analyses are meant as a stepping stone for encouraging students to engage in their own interpretations of the postmodern and the modern.

Representations of new technologies, like representations of old technologies, have to be evaluated and analyzed in terms of their postmodern appeal as well as the social, political, and economic contexts that construed them. A weaving together of postmodernism and cultural consciousness can create a cyborg theory that encourages teachers’ and students’ agency as well as resistance to oppressive online practices. In effect, I advocate a theoretical framework that moves beyond the often tempting appeal of early postmodernism’s “nihilistic” and “anarchic” thought in discussions of online technologies and instead looks at the possibilities of social, economic, gender, and race inequities in online or hypertextual environments.

Donna Haraway’s work has helped shape the concept of the cyborg as a “cybernetic organism” and a creature of “social reality

and fiction.”² However, it has also contributed to a body of literature that ignores the dangers of promoting a postmodern cyborgian world in which “hybridity” and “schizophrenia” become the main ingredients of postmodern fragmentation without accounting for the continuing realities of online as well as offline power struggles. Instead, Allucquere Rosanne Stone acknowledges that cyberspace is not an illusory space disconnected from reality. It is a space that allows for a “complex and shifting play of body, self, and community” (3), but also can recreate and reinvent existing social and political injustices. Such a balanced position—endorsing the postmodern possibilities of cyberspace while at the same time cautioning over-enthusiastic users to consider the possible dangers of an uncritical endorsement of technologies—is particularly important when analyzing technologies and cyberspaces as potential locations of change or potential proponents of existing power relations. The following close analysis of advertisements especially geared toward those in educational fields shows the importance of keeping the varied and often oppressive representations of “cyber-reality” in mind to avoid an “illusory reality” that promises but does not deliver open boundaries, a challenge to current domination, or transformation of political, social, gender, and economic inequalities.

We need to teach our students, as users of new information technologies in educational settings, to be critical readers of online materials by learning to analyze and talk about how presentations and representations of technology influence their perceptions of how the real influences the virtual, and how the virtual influences the real. We also need to discuss with our students and with our colleagues how reality and virtuality can be transformed and re-envisioned to include alternative voices and alternative possibilities for changing existing approaches to technology innovations.

The following scaffolding for possible analyses of widely read ads is a starting point for helping students and teachers acquire a voice that looks critically at the implications of how technology is presented in images to consumers and users in educational

settings. Although most of my students are very familiar with visual materials, many of them do not stop to look carefully at how these images portray business practices, political ideologies, social norms, or specific perspectives on what is considered normal and acceptable. Despite their ability to critically analyze a written text based on the rhetorical principles we address in class, in many cases they are not ready to translate these skills into a critical analysis of images. Because I could not assume a transfer of critical skills from print text to images, I needed to be explicit about how images can influence how we see others and how we see ourselves. To start the process, I provided students with the following handout, about goals, skills, and tasks to be accomplished by the end of the session:

Goals

- Broaden the definition of the word *rhetorical*, or in other words, think about ways in which visual factors may influence or persuade us.
- Identify visually persuasive components of images.
- Think about ways in which different ideologies are represented through images and works.
- Recognize that writing takes place within, is shaped by, and serves to shape both social and political contexts.

Skills

- Critical thinking and evaluation of visual and written information
- Broadening the definition of rhetorical appeals and messages to include images

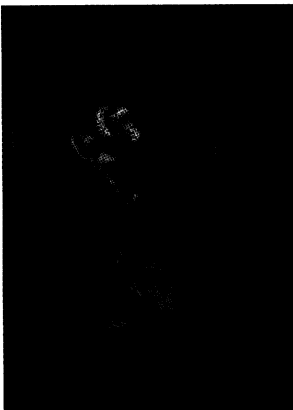
Tasks

- Examine each image and text for ideological messages.
- Describe any assumptions made about technology.
- Describe how technology is depicted through images and words.
- Describe the target audience and the message of the images and of the text.
- Describe how humans are depicted.
- Describe how technology is depicted.
- Describe the relationship between technology and humans.

Students used this handout to guide them through the exercise, but they also explored other aspects of the ads not addressed in the Tasks section. The following section shows how students responded to the ads in my class and contains additional questions and ideas for engaging students in critical discussions about the materials.

Real Illusions: Control and Hardware

Brain = Compaq



Should the greatest academic minds be forced to debate between price and performance? Not when there are loftier subjects to ponder. Whether you're buying a server for your Math department, desktop computers for your English faculty or notebooks for every instructor, you'll never have to compare power and price. To learn more, call 1-800-88-teach or visit

www.compaq.com/education. (Compaq ad in the *Chronicle of Higher Education*, October 1999)

When we start discussion of Compaq's advertisement in the *Chronicle of Higher Education*, students already have analyzed cyborg readings such as "Johnny Mnemonic" and "Girl Interrupted." The Compaq ad, I point out to them, could be read as an example of the fluid relationship between humans and computers. A formally-dressed masculine figure is depicted as pondering some serious thoughts, its posture reminding the reader of Auguste Rodin's famous statue "The Thinker."³ However, instead of the person's head, we are presented with a computer screen that acts as an x-ray machine. The skeletal head and fingertips of the right hand are framed by the screen, and the person's brain is exposed as a knotted mass. The description under the picture points students to Compaq's unlimited abilities in satisfying the computational needs of educators. It also establishes the administrator as the decision maker of an academic department's computer purchases.

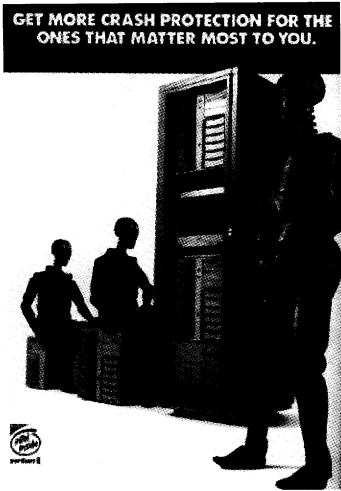
Students look closely at the hybridity of machine and organism as postmodernism's call for questioning individuals' beliefs in agency and order by foregrounding the impact of technology on human thought processes. During a recent discussion, students pointed out that the machine, more so than the human mind, performs as the decision maker in this picture, undermining the idealistic notion that hybridity does not achieve unity between machine and organism. Not only did they point out the knot in the human brain, but they also pointed out that a connection feeds right into the screen and seems to either circumvent the brain or provide information to the brain. From this perspective, the machine controls the mind and does not, as Compaq would like to put it, free the mind from making difficult decisions about computer technology. Students started criticizing the ad's proclamation that "the freeing of the mind" should enable the pondering administrator to engage in "loftier subjects to ponder." However, although students agreed that a certain amount of hybridity—man is connected to the machine—is suggested in the ad, they did not see the "confusion of boundaries" addressed in cyborgian theories. Instead, students argued that the boundaries are firmly redrawn so that the machine removes control from the

organism, and the organism lets itself be controlled by the machine. In terms of human-human interaction, students interpreted the ad as presenting a power structure that leaves instructors and faculty of various departments voiceless in the process of getting computerized. It is the department chair who will “never have to compare power and price” for machines purchased for the English faculty. More problematically, however, the person in the chair’s position will not even be *able* to make such decisions since the knot in his brain will obviously hamper any important decision-making abilities. This foregrounds the perception that educators should only use the machines, but do not need to be involved in making decisions about hardware, software, or interfaces. The advertisers, from this perspective, intend to remove input from those who will use the technology.

There are certainly other possibilities for encouraging a critical analysis of the message sent through the ad. If the course discusses gender issues, teachers can show students that the advertisement prompts the reader to establish a connection between a male and masculine administrator as the figure head and between the creators of machines. Students can connect such advertising practices with Jan Zimmerman’s view that the development of new technologies, their design and their marketing, are determined by those who make them (3). She says that because of a white, male-oriented computer industry, “sexism, racism, classism, and a host of other values [run] as rapidly as electrons through the microcircuitry of tomorrow” (3). Students can also look at more recent criticism that discusses technology as an artifact that recreates dominant belief systems (see, for example, Selfe and Selfe; Gruber and Csomay; Comstock). Such readings can strengthen Zimmerman’s argument that computer use is built on expectations that reflect values ingrained in a class, gender, race, and age biased society. Furthermore, in discussions of class issues, students can look at the reality depicted in this ad, that of a corporate world that readers perceive as the major player in the race for more and faster digital information. Decisions are not made by those directly influenced by specific purchases—such as

teachers and students or even administrators: readers are left with the impression that decisions are made by an economically and often politically driven company existing in a world based on traditional power structures.

In addition to the hierarchical presentation of machine-human, administration-faculty, and corporate world-end-users, students can analyze the clearly gendered representation of human-machine interaction that elevates mainstream Anglo men's participation in the computer revolution over the participation of women. Students can address the corporate look of the male figure which leaves little doubt that his position is one of power and authority. Certainly, male-centered representations of technology are not new. Lisa Gerrard, for example, sees computers as masculinist icons and computer culture as a "male preserve" which had its origins in "the largely male enterprise of warfare" (378). Students can find in Compaq's ad a continuation of current perceptions of technology as mainstream, male-dominated, and male-oriented. The interesting twist, however, is that even those perceived to be in a power position are limited in their ability to make decisions. Instead, a more superior power than the human brain—personified by the connection between screen and power outlet—takes over where the knotted brain can no longer function on its own. The machine thus supercedes and possibly circumvents the human brain, creating a cyborg that is no longer a symbiotic form of human-machine interactions but that is instead controlled by the machine.



Get more crash protection for the ones that matter most to you.

...your data, your e-mail, your applications.

Crash protection isn't just something you need in your car. It's something your business needs in a server. So the fact that we've become the number three server vendor in the U.S. says something loud

and clear to the industry. It says that people are sick and tired of reliability being a high-priced option. It also proves that Dell PowerEdge servers are doing what we designed them to do: delivering outstanding reliability and performance. At prices well beneath the industry's standards. ...And for true high-end reliability, the Dell PowerEdge 6100 is loaded with redundant coiling fans, and hot-pluggable drives. Remember, no matter which PowerEdge server you choose, one feature remains consistent: value. And that's something no business can afford to overlook (advertisement in *Technology and Learning*, May 1998).

In Dell's ad the depiction of robotic machines moves even further away from human control and instead hints at the superiority of computers and robotic devices. Dell's headline prompts the reader to establish an immediate concern with "the ones that matter most to you." For many of us, these would include children, grandchildren, parents, grandparents, friends, or partners. Dell, however, asks the reader to see those who matter

most as “your data, your e-mail, your applications.” Students in one of my courses constructed the personification of technological data and tools, or the technologizing of “what/who” matters most, as Dell’s efforts to apply values related to human emotions to machines. Furthermore, students argued that the emotional appeal created by the advertisement shifts the focus from human relations to relations with machines. Students had no difficulty pointing out that what matters most to the owner of the machine is no longer another human being but the machine which/who will perform reliably.

After our discussions of Compaq’s representation of the human brain as a knot, students approached Dell’s ad as a blurring of human-machine boundaries addressed by cyborg theorists such as Haraway, Stone, Turkle, and others. The initial language choices show that technology is something/somebody that matters, somebody/something that is part of a person’s life. Looking carefully at the ad’s visual presentation, students discussed concepts of human-computer interactions by analyzing the CPUs in connection with robotic devices that are created “in the image of man.” The size of the robots, they pointed out, depends on the size of the CPU, thus establishing a structure that students interpreted in the prevailing terms of a consumer-oriented society addressed to a large extent in Michel Foucault’s work: those with the strongest economic means are the biggest players in the game for domination.⁴ What was interesting to students, however, was that robots, not humans, appear as the keepers of the machines and the players in the game for control through technological advances. For example, the robots take control by protectively putting a hand on the machine, establishing a connection between them and the technology. The leading robot, distinguished by its positioning and size, stands with its legs apart, taking on an authoritative demeanor. The relationship is now between machines and machines, with one machine controlling or being controlled by another machine.

Dell’s ad can also exemplify a different and more provocative interpretation of the move into the technological age. The

anthropomorphic features of the robotic devices encourage readers to establish connections between humans and machines, thus reminding us of Haraway's cyborg where easy binaries of machine and human are destroyed. This perspective is shared by Gregory Rowlinson who argues that "in time, the boundaries between the born and the made, the grown and the built, the living and the dead, the evolved and the programmed, the biological and the artificial, will evaporate" (125). The question changes from whether we are machines or humans to whether the android is controlled by humans, or whether the android controls the human mind. And, if humans are part of the machine, we also have to ask another question: who thinks, human or machine, or both? According to Rowlinson, however the question of whether machines can think is irrelevant in the first place. Instead, it is important "whether we think they think" (125). If we attribute "thought" to the machine, we also potentially attribute other features explored in cyberfiction and cyberfilm: a new dominant force that replaces human forces. The previously analyzed Compaq ad only alluded to such a scenario as a distant possibility; Dell, however, encourages readers to see themselves as—and to behave as—robots. The readers see "human replacement" more fully by being introduced to androids—machines—as the controllers and preservers of machines.

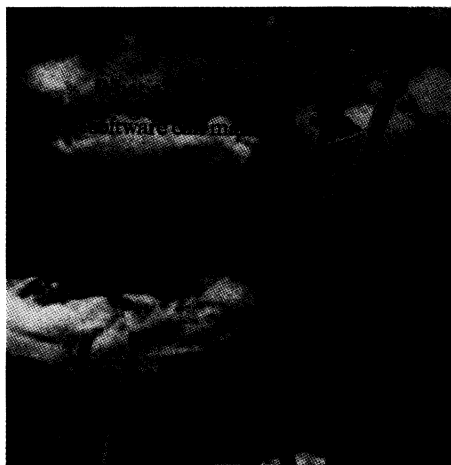
Furthermore, although Haraway claims that the cyborg is a creature of a postgender world, and although the seemingly androgynous robotic devices do not show *obvious* gendered traits, students can provide close analyses of whether and how gendered practices play into the ad: bigger machines provide more power, a power which is part of owning and operating the most advanced technology. Androids, in their superficial androgynous state, can become representatives of established power structures which promote existing economic, social, and political structures.

The cyborg, or the androids depicted in the ad, can be representatives of what Arthur Kroker has termed "cyberauthoritarianism" (167). From this perspective, the human-machine inhabitants of the amorphous realm called cyberspace are

not part of an egalitarian society but are a continuation of current perceptions of authority and power. This interpretation fits nicely with Claudia Springer's analysis of the depiction of cyborgs in film where human-machine creations are presented "as aggressive bulging bodies" whose "physical prowess is heightened, not abandoned" (88). Similarly, Dell presents androids that show our limitations in imagining the cyborg as anything but a recreation of a human form with mechanical features. In other words, we are presented with a representation of reality that is firmly anchored in the limiting conceptions of what is "real" and what can be imagined through this reality. Without critical analysis, such representations can hinder users of electronic spaces from reconceptualizing a reality based on current power structures to a reality that tries to work toward positive change in the redistribution of power.

Continuing Illusions: Achievement and Software

CCC Software = Success in Education



Ready to help your students reach their true potential? A key step is having the right educational resources. Software that can enhance student achievement and help educators better manage the learning process....

Our wide selection enables you to choose the software that's right for you. With all CCC software, learning is individualized. Customizing instruction is easy. And student progress can

be monitored automatically. CCC's balanced approach (combining fundamentals with open-ended learning) has helped over 10 million students worldwide. So, there should be little doubt it can help you meet local, state, and national objectives. Take the next step. Help your students achieve new heights today (advertisement in *Technology and Learning*, September 1999).

In reading the *CCC Software* ad, students were at first unsure why we were discussing an image that shows a number of ladders but doesn't depict "technology." I explain to them that this image and the accompanying text could be seen as part of a "reality" of individualism and personal achievement that is only too well known to many students, educators, parents, and politicians. In this ad from *Technology and Learning*, a journal that focuses on educational uses of computer technology for the K-12 curriculum, teachers are encouraged to help students "reach their true potential." To do this, they need to use software provided by the Computer Curriculum Corporation (CCC). According to the ad, CCC is convinced that they have helped 10 million students "achieve new heights."

After dissecting the ad more carefully, students saw that the buzzwords connected with student achievement—new heights, true potential, student progress—are juxtaposed with concepts of teacher control—management tools, monitoring student progress, meeting local, state and national objectives. Students then started to discuss whether CCC provides students with possible tools for independent learning, or whether it advocates its software to ensure that teachers can monitor students' work and can gear it toward set standards. Teachers, to use the language supported by the Computer Curriculum Corporation, "manage the learning process" and students are the ones being managed—not only by the teacher but also by the software. The technology, with the help and support of teachers, is used to control student progress and to achieve the goals set by standardized tests. Students addressed the conflicting messages from a human-

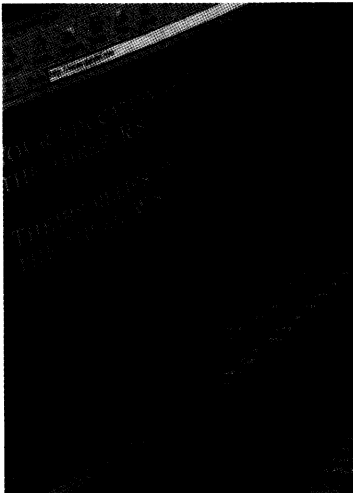
machine perspective and discussed whether the collaboration between educators and technology imposes more restrictions on students since now human and machine can control student progress, increasing the power positions already held by many teachers in traditional classrooms.

In addition to looking at the language used in the ad, students can focus on the visual presentation. They can focus on CCC's promise that students can achieve new heights by using the company's software. The readers are encouraged to connect the one ladder that reaches beyond the limits of the page to the new possibilities created by CCC's software tools. Since only the legs of the climber can be seen, it is assumed that there is no limit in the skyward movement suggested in the ad. Furthermore, the headline, "What a difference the right educational software can make," again removes human agency and relies on the software to make a difference.

The picture, similar to the text, makes several problematic assumptions. For one, software is seen as potentially making "the" difference in students' education. With this, teachers and students alike are no longer initiators of meaning making; instead, the machine takes on the role of knowledge distribution. Educators are mostly the managers and monitors of student progress, and students are mostly the receivers of information that will equip them with the skills necessary to achieve according to set standards. Achieving higher goals—a concept that often encourages student initiative, critical approaches to learning, and sometimes even collaborative efforts—becomes an enterprise that is based on leaving others behind (as shown by the short ladders) and moving on unimpeded into a world that is managed and monitored with the help of machines. Human-machine interaction, instead of weakening existing binary opposites, continues power positions that confirm the controlling function of teachers which is now aided and strengthened by new computer technologies. The educator or the student does not shape education and control the machine, but instead the machine shapes the users.

Furthermore, the depiction of a young adult climbing a ladder that is higher than any others, and reaching for the “pie in the sky,” emphasizes the traditional traits of individualism and competitive spirit implied in the ad. Students can ask whether others have to be left behind to ensure the individual’s move up the ladder of success and whether CCC identifies technology users and decision makers as largely competitive individualists, catering to and reinforcing models of interaction or non-interaction that have become a staple of many so-called success stories (see, e.g., Sofia; Aschauer; Huber and Schofield). Additionally, the professed uses of the software as a management and monitoring tool that can help users achieve new heights can prompt questions about issues of the underlying patriarchal implications of control and command. Similar to the gendered implications inherent in the portrayal of “male machines” addressed by Lisa Gerard, students can discover that presentations of software can continue perceptions of an exclusionary, competitive, hierarchical, and largely masculine computer culture.

Datatel: Technology Working for People



In the new millennium, your students’ education will revolve around the WorldWideWeb. And, as the world’s largest company dedicated solely to producing advanced information technology solutions for higher education, Datatel has the Internet strategies and products that are viable and deliverable

today. WebAdvisor—working in tandem with our integrated administrative software, Colleague—is our

exclusive “NATIVE” web solution, providing both the tools and applications to seamlessly integrate new features and functions right into your existing web site without re-engineering. With WebAdvisor, your constituents can gather realtime answers to realtime questions 24 hours a day, seven days a week. It’s technology that works for you. So you can put the Internet to work for your students. For more information on Datatel’s full line of web-based solutions, call 1-800-DATATEL or visit us at www.datatel.com (advertisement in the *Chronicle of Higher Education*, October 1999).

Datatel’s ad presents a seemingly straight-forward approach to new web-technologies. It continues current understandings of the usefulness of the web without complicating patriarchal notions of authority and control when advocating the inherent value of new information technologies. The ad from the *Chronicle of Higher Education* announces a new application program that will “seamlessly integrate new features and functions” into existing web pages. A computer screen that shows Netscape’s web browser presents the words “Your education relied on the three R’s. Theirs relies on the three W’s,” which, according to the students, reminded them that education is becoming closely aligned with new technologies. Students were surprised—especially education majors—that teachers, according to Datatel’s ad, should no longer focus on reading, writing, and arithmetic, but instead should move students toward the WorldWideWeb. Not only that, students’ whole education will “revolve” around it. Other students argued that Datatel’s willingness to see the three R’s as a historical artifact and to push to “advanced information technology solutions” was a move from restrictive concepts of educational goals to a more amorphous and dynamic future in which education is geared toward students’ needs.

However, the majority of students noted that the ad's concern is not primarily with the student. Instead, Datatel addresses faculty who are seen as responsible for their students. To meet their responsibilities, teachers are urged to incorporate Datatel's product into their teaching because, as Datatel points out, it has "technology working for people." Interestingly, some students noted that technology is working *for* people, which suggests that users can manipulate the technology to provide the best possible outcome. Furthermore, it is the Internet that works *for* students, again implying that students have agency over machines. However, after students read more carefully what Datatel offers—web solutions—they argued that Datatel wants to negate users' agency to provide their own solutions. This move partly removes the power to make decisions from the users and instead offers solutions without user input or control.

In addition, a possibly promising approach to education becomes a new way of restricting teacher and student input. Whether students are taught the three R's or the three W's, knowledge distribution is portrayed as the responsibility of the teacher who uses the pre-packaged software and of the producers of new and innovative technologies. Thus, instead of building on the web's possibilities of what bell hooks terms "visionary thinking," (36) the creators of Datatel's ad, similar to Compaq's, promote traditional patterns of education in which students are not encouraged to become active participants but are again passive recipients of knowledge distributed by teachers with the help of new technologies. The ad could also imply that Datatel's technology not only restricts student input but also positions teachers as technology users who do not make major decisions about learning. Once again, current notions of control and power are confirmed by the ad's message to its readers: Instead of providing choices for students and teachers, and instead of looking at learning as a contextualized endeavor in which all parties participate, Datatel promotes its technology to strengthen curricular goals that conform to imposed structures.

Complicating Notions of Postmodern Bliss

Many scholars, teachers, and students who are exposed to and embrace postmodern theories find analyzing new technologies difficult without addressing the supposedly inherent aspects of subjectivity, fluidity, indeterminable identities, infinity, and ambiguity. New technologies can be seen as a postmodernist's heteroglossic dreamland with their promises of hypertextual metamorphoses, decentered structures, and advertised chaos. However, they can also be considered a nightmare when looking more closely at specific representations of supposedly transformative technologies. Although often intended to be postmodern in their absence of a centered structure, order, and unity, many representations of new machines advocate authorial authority, predetermined meanings, and a static representation of reality. Representations of the machine, thus, take on well-known features that are disenfranchising, exclusionary, and marginalizing. What we need to look at instead are representations of machines that, as Zoe Sofia says, are no longer part of a command/control mentality but instead are "stripped of their mythic grandiosity, and redefined simply as tools for use in tasks that make sense to women users" (38) and all users traditionally excluded from participating fully and productively in shaping new information technologies. This redefinition depends in large part on the voices of users no longer satisfied with current depictions of their roles in the new information technology society.

The complexities of human as well as human-computer interactions, the shifting identities in virtual environments as well as in "real" settings, and the concepts of fluidity addressed by postmodern theorists have to be explored in connection with critical inquiries into the real and pressing issues of discrimination and oppression used by members of a political or social center against members who are outside the mainstream. Thus, although I agree with Haraway and see the fragmentation of reality as a positive force in achieving change by acknowledging the

complexity of our identities, I am cautious when it comes to the influence of online spaces on our perceptions of reality. Cyberspaces are usually not the long-hoped-for heaven of our existence. Certainly, we need to entertain notions of heterogeneity, ambiguity, and shifting identities to establish a driving force that disrupts concepts of unchanging truth, historical reality, and political inevitability. However, we also need to foreground the ambiguous and constructed nature of language and interactive reality and their potential to continue the subjugation and devaluation of women's voices and the voices of under-represented groups. Language—oral or written—is not value-free or objective, but instead depends on, and is formed and shaped by, human interaction, social relationships, political, ideological, and economic systems.

The dangers of succumbing to postmodern bliss are certainly present. But, if we temper postmodernist tendencies to dissolve in *differance* with feminist tendencies grounded in experience and oppositional possibilities, we can become critical of the many ways in which technology is presented. Instead of seeing technologies as a postmodern haven, a threat to an existing and perfect system, or a continuation of a patriarchal and malignant world, we can see them as an opportunity to learn more about human and human-computer interaction if we situate our inquiries within specific contexts. Furthermore, by providing critical tools to students, teachers, administrators, and other users of technologies who then evaluate different representations of technology, we are less likely to remain an indiscriminate audience unaware of potential dangers to efforts of increasing tolerance and cooperation.

Teaching each other and teaching students to closely analyze and write about how new information technologies are presented in magazines and newspapers, on TV and billboards, and in various journals provide a starting point for changing our attitudes to what is seen as real, unproblematic, and commonly accepted. Once we become more critical of our daily diet of technological representations, we will become less complicit and less voiceless when we are confronted with what is considered typical, normal,

and acceptable. Making our voices heard, we can become critical readers of technology by encouraging cyber-realities that move beyond current notions of traditional power structures and exclusionary practices, and by promoting cyber-theories that include instead of exclude.

My focus on those aspects of technological representations that continue the disenfranchisement of political, social, cultural, and ethnic minorities should not be taken as an indication that new information technologies are a dangerous tool that should not be used in educational settings.⁵ What I do want to indicate, however, is that representations of new technologies, similar to representations of old technologies, need to undergo critical examination by readers. I promote a cyborgian ideology firmly based in recognizing the realities of political and social oppressive forces operating in society. Analyses of advertisements in the classroom can and should be varied and contextualized. This article takes a first step in showing that critical appraisals of new media are a necessity in promoting active participation of formerly disenfranchised people in educational, political, economic, and social settings.

I thank the members of the women's academic reading group for their helpful feedback.

Notes

¹ See, for example, Donna Haraway's explorations of the symbiosis between human and machine; Sherry Turkle's commentary on the multiple, distributed self; Ann Brady Aschauer's, Gail Hawisher's, Patricia Sullivan's, and Zoe Sofia's work on gendered uses of technology; Cynthia Selfe's, Richard Selfe's, and Arthur Kroker's analyses of power relations in a technological age; and Allucquere Rosanne Stone's criticism of virtual equality.

² Many scholars interested in cyberspace and the idea of the cyborg refer to Haraway as the leading authority on the definitions of "cyborg," "cyborg world," and "cyborg feminism." Quoted especially frequently is her chapter "A

Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century” from her 1991 book *Simians, Cyborgs, and Women: The Reinvention of Nature*.

³ *The Thinker* was created by Rodin in 1880. Among his many other well-known sculptures are “John the Baptist,” “The Kiss,” and “The Age of Bronze.”

⁴ See especially Foucault’s comments in *Discipline and Punish*. Furthermore, his distinction between “domination” and “power” can be found in *The History of Sexuality* and in “The Ethic of Care for the Self as a Practice of Freedom: An Interview with Michel Foucault on January 20, 1984.”

⁵ For example, grrrl sites, sites that allow for open trans-national communication, and women’s activist sites contribute voices to the web that were silenced in the past.

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