

Race in Cyberspace

Edited by

Beth E. Kolko

Lisa Nakamura

Gilbert B. Rodman

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Contents

Acknowledgments	vii
1. Race in Cyberspace: An Introduction	1
Beth E. Kolko, Lisa Nakamura, and Gilbert B. Rodman	
2. "Where Do You Want to Go Today?" Cybernetic Tourism, the Internet, and Transnationality	15
Lisa Nakamura	
3. The Appended Subject: Race and Identity as Digital Assemblage	27
Jennifer González	
4. The Revenge of the Yellowfaced Cyborg: The Rape of Digital Geishas and the Colonization of Cyber-Coolies in 3D Realms' Shadow Warrior	51
Jeffrey A. Owa	

5. Sexy SIMS, Racy SIMMS	69
Rajani Sudan	
6. <i>In Medias</i> Race: Filmic Representation, Networked Communication, and Racial Intermediation	87
David Crane	
7. I'll Take My Stand in Dixie-Net: White Guys, the South, and Cyberspace	117
Tara McPherson	
8. Margins in the Wires: Looking for Race, Gender, and Sexuality in the Blacksburg Electronic Village	133
David Silver	
9. Language, Identity, and the Internet	151
Mark Warschauer	
10. Babel Machines and Electronic Universalism	171
Joe Lockard	
11. The Computer Race Goes to Class: How Computers in Schools Helped Shape the Racial Topography of the Internet	191
Jonathan Sterne	
12. Erasing @race: Going White in the (Inter)Face	213
Beth E. Kolko	
Contributors	233
Index	237

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11. The Computer Race Goes to Class

How Computers in Schools Helped Shape the Racial Topography of the Internet

Jonathan Sterne

Origins of the Present Crisis

This chapter rests on a basic assumption: that considerations of race and the Internet must account for the relationship between the politics of race online and the politics of race as such. Many utopic visions of the Internet conceive of it as a raceless space, a space somehow beyond the politics of race, a frontier where people can remake themselves in their minds' chosen images. Yet the vast majority of Internet users are still white (Hoffman); the very idea of cyberspace's "racelessness," the belief in its separation from the racial politics of other spaces of everyday life is, as Joseph Lockard puts it, "unmistakably signed with Euro-American whiteness" (227). How did race get written out of computing? How did whiteness become a default setting for online culture?

A consideration of the history of computers and schooling in the 1980s can help clarify these issues. My reasoning is simple: if white people in the United States had a distinct advantage over people of color in learning computing and gaining access to computers, then that would go a long way toward explaining why the Internet remains predominately and presumptively white (though it is far from entirely white). A history of computers in schools offers

a fresh perspective on the Internet because it places modem use and Internet activity within the broader context of the history of computing. Though it should be blandly obvious to readers that access to a computer and the skills to make use of it are prior conditions for a person or a group of people to go online, surprisingly little Internet research follows through on this basic premise.

This essay traces the history of computers in schools as a way of tracing the problem of differential access. As I will show below, both educators and computer industry executives believed that children should first encounter computers in elementary and secondary schools. For educators, computers became a literacy issue, and "computer literacy" emerged as an education buzzword in the 1980s alongside "math literacy," "science literacy," and of course the fundamental kind of literacy that allows you to understand the words printed on this page. The basic concerns of computer literacy of the 1980s have fed into larger concerns about connecting schools with the National Information Infrastructure; students, it is said, will need new "high-tech" skills for the changing economy of the future, even though the purported "high-skill" economy is more myth than inevitability (Neill 183). For the computer industry, on the other hand, exposing children to computers was considered good long-range marketing. Like fast food, the idea was that if children were exposed to a product at an early age, there was a greater potential that they would become loyal consumers for life. Instead of carrying a neutral valence or even a positive one, the very idea of computer literacy is conflicted at its core: while educators clearly intended computer literacy as the ability to control machines, the language of literacy can easily degenerate into the project of creating consumer populations for communication technologies. As I will show below, major computer companies actively pursued this agenda in their policies on schooling.

Moreover, even a superficial comparison of computer literacy with language-based notions of literacy demonstrates the weakness of the analogy. Literacy with a pen traditionally means being able to write as well as read. Yet this strange species of curriculum known as media literacy has more often than not stopped short of being able to "write" in any other medium but print. Computer literacy usually means being able to make use of programs, but means little in the way of programming skills. While more people are able to use computers as tools for performing writing tasks—such as the writing I am doing now for *this essay*, or building a webpage—the vast majority of end users have relatively little control or understanding of computing beyond the

use of programs for specific tasks. In other words, computer literacy is a completely functionalist approach to what it means to be literate or competent in a particular idiom. The analogy between writing literacy and computer literacy as it is currently conceived breaks down: if writers were literate like they were computer literate, they would be able to put words and sentences together in "wizardized" order, but they would not understand the basic rules of grammar or syntax. The print analogue of computer literacy standards would be filling out a contract, and in fact, contracts were some of the first printed documents to make it into many people's everyday lives in the late 1700s: many people were literate enough to fill out a contract, yet unable to write something on their own (Warner 31–32).¹ One can hope that computer literacy would take, over the next two centuries, the same path as mass literacy did, but at present, that remains just a hope.

The focus on schools as the agents of this new literacy meant that unequal conditions of schooling would have a significant impact on children's access to computers and computer experience. Already significant race-based inequalities in schooling were exacerbated in the 1980s, exactly when computers were first entering American public schools. Over the course of the 1980s, and especially in terms of differences such as white and black or poor and rich, federal social policy on public schooling had been "turned back almost one hundred years" (Kozol 4). Federal defunding of public schools led to greater inequalities in resources and funding between white and nonwhite schools within districts, and greater inequalities among different school districts, depending on their location and local tax base. With less federal funding to balance resources between richer and poorer schools, school districts relied more heavily on funding from sources like property tax revenue, a form of revenue completely dependent on property values and thus susceptible to existing inequalities in housing (and this had a cyclical effect as well, since the quality of an area's schools affects property values within the district). School *location* remains a primary issue because the quality of children's educations is strongly tied to where they live.

This suggests that the social space of schooling and the imagined space of cyberspace are not nearly so far apart as technophilic pundits would have it. The politics of region return as the repressed: the topology of cyberspace mimics the racial and economic topology of housing and schooling. Fiber optic cable, phone jacks in classrooms, and other "on-ramps" to the NII are more frequently found in wealthier and whiter areas. Maybe cyberspace isn't so removed from the materiality of social life after all. Maybe cyberspace is a

misleading concept for framing the problem of race and the Internet. Discussions of cyberspace that abstract it from computer culture more generally risk mistaking the experiential for the ontological. Concepts of cyber-"space"—and I think the term deserves scare quotes—mystify the phenomenology of consumption. From inside netsurfers' minds or Microsoft commercials, we can imagine "traveling" to other places. From outside the netsurfers' bodies, we see people sitting still at computer terminals in their homes, schools, libraries, and places of work, clicking mice and occasionally typing in responses or commands. People need access to and basic skills with a computer to get online. They need a reason or a motivation to go online. The desire to use a modem is not present in human beings at birth. The idea that cyberspace is purely about people's experiences online is a mystification of the medium itself—it reduces a whole set of social relationships and cultural problems to the experience of using a computer hooked into the Internet.

Academics have too easily accepted this kind of commercial discourse on computing as somehow external to computer culture, as an accurate description of it. Technological determinism has its roots in commodity fetishism: the belief that computers can change our lives is based on the widespread belief in the transformative power of commodities. This is probably the most coherent and insistent message present in twentieth century advertising (see, e.g., Ohmann). This kind of thinking pushes together many different registers of discourse and activity. The technology, the techniques of using computer technology, the culture that has arisen around computing, and the everyday language used to describe computing are all collapsed into a metadiscourse that simply mimics the commercial language. The very idea of "cyberspace" is a cultural artifact, an element of computer culture, and not a description from outside it. If our goal is a critique of the Internet's status quo, then we have to begin by checking our language: we should choose our metaphors deliberately, questioning our own predispositions toward certain ways of describing online life. The alternative is to unthinkingly universalize a very particular set of meanings and experiences of computing.

This kind of solipsism—applied to the question of race—is an important and pernicious element of Internet discourse. My own experience supports Lockard's assertion that the Internet's "nullness" slips quite easily into whiteness. In my research for this article, I scanned the archive for CYHIST—a listserv devoted to the "history of cyberspace"—for terms like "race," "minority," and "ethnic," finding very few hits at all. One participant commented,

Personally, I think the detachment that an indirect, online venue provides, is EXACTLY the "buffer zone" the human psyche has always needed. When you're online, you're the only person who's "real" to you; everyone else is just a bunch of words expressing thoughts. Personalities come through sufficiently to "like" or "dislike" someone, but if THEY DON'T BRING IT UP, you're NOT going to even have to DEAL WITH issues such as age, race, nationality, gender, religion, etc.—in short, most of the differences that are sadly, and so unnecessarily, responsible for so much of the pain and suffering in the world. We've all had the experience of meeting someone online, liking him/her, deciding to "meet in person," and being sorely disappointed to find that that person is so much LESS, in person, than he/she is online! (Chiesa)

While the poster clearly understands himself as antiracist, the notion lying behind the post is clearly that difference—and knowledge of difference—is an obstacle to equality. As a listserv participant, I have repeatedly seen this kind of gesture made online: the introduction of discussions of race into a discussion is cast by a white list participant as the act which produces racial inequality by referencing it. Yet, as Lisa Nakamura has pointed out, people also will take on racialized identities (their own or others') in multiuser chat domains; and there are alt.sex.usenet groups dedicated to the discussion of sex with people of particular races. She calls these and other practices of selective racial naming "identity tourism." The net effect of these practices, when coupled with the white ideology of racelessness, is to produce an online atmosphere of racial voluntarism—where race is seen as something that can simply be chosen or forgotten at will.

The functions of primordial racelessness and racial voluntarism, while firmly based in a humanist ethos (i.e., "we're all the same under the skin"), risk dismissing the very real effects of race on people's lives. In fact, I would argue that such vacillation between the fluidity and marked absence of racial identity in the limited context of "online culture"² is a significant part of the larger structures of racial inequality on which that online culture is based. One does not choose the color of one's skin, and though racial identity is *constructed*, it is never simply chosen (Dimitriadis).

If today the Internet remains a largely (though not entirely) white space, this may well have something to do with the history of access to computers and existing racial differences offline, and schooling is a key site. People of my generation often first encountered computers as children through their schools, and

that differential access to computing in the 1980s is a structuring element of today's online culture. Though I knew of computers' existence through my parents' work, my first experiences were on an Apple II in fifth grade, playing rudimentary games and doing rote exercises. As I went through school I was required to take several basic computer literacy courses; I did well in them, but I was by no means a whiz kid. By the time my family bought a computer in 1984, I understood all of its basic functions including the use of the modem, I could program it in BASIC and DOS, and I easily learned the software that we purchased with the machine. Within days of my family's purchase of a computer, I logged into local bulletin boards and began an online life under several aliases. My experiences using the computing resources of a white, moderately affluent suburban school district thus helped shape my attitude toward computers, and gave me an opportunity to learn and use them in a supportive context.

Over the course of the 1980s, students' encounters, attitudes toward and access to computers were shaped by the racial and class differences in quality of schooling—differences that were amplified by the cuts in federal spending on education discussed above. What are the root causes of these inequalities? Why the interest now? The very existence of this collection speaks to race as a central and salient issue in Internet studies and also points to Internet scholars' relative inattention to the problem of race thus far. Is cyberspace special in some way, or are the inequalities online simply extensions of a more general state of social inequality and political domination?

The category of race itself also requires some reflection in the context of computing: race is not simply a placeholder for class when it comes to computers and the Internet. While economic class certainly impacts people's access to computers, it does not entirely explain it. *American Demographics* has reported that low income families (white and nonwhite) are willing to spend money on computers for their children if the children have access to computers in schools (Larson). Although computer marketing tended to aim for what Eileen Meehan has called the "consumer caste"—those people with the most apparent money to spend—we cannot assume that economic status (beyond a certain baseline) and the cost of the computer proportional to family income are determinant factors in a family's decision to purchase a computer. It is entirely possible that the race gap online would be narrower today if nonwhite children—especially African American, Latino/Latina, and Native American children—had the same access to computers in schools that their white counterparts did. The racial and class dimensions of computer access through schools are clearly linked, but not simply as a matter of reflection of cause and

effect. Instead, they operate in a "nonsynchronous" fashion (McCarthy 66–67), where categories may overlap and emphasize one another, as is often the case in school funding, or they may operate in contradiction, as is apparently the case in families' dispositions toward buying computers.

Even considered nonsynchronously, race as an academic problem suffers from many of the same problems that academics have had with respect to discussions of cyberspace (or perhaps it would be more accurate to say that academic discussions of cyberspace have fallen to the same habits of thought that can obscure academic discussions of race): they use terminology that is an artifact of a relationship, that has a function in that very relationship, as a metadiscourse that purports to "objectively" describe the relationship from outside. For the purposes of many of my sources here, it is the white/black dichotomy that structures racial discourse. Yet it is just as fallacious to make "black" a placeholder for "raced" as it is to make "white" a placeholder for "raceless." Much of my source material operates on this dichotomy, and therefore it informs this essay more than I would like it to. Still, discussions of differential race relations cannot go forward until there is a clear recognition that racial difference is as nonsynchronous internally as it is externally. In other words, if the experience of class does not have a predetermined relationship to the experience of race, then neither does the experience of African Americans necessarily reflect the experience of, for instance, Asian Americans. Readers should bear this in mind when generalizing from the history and the materials herein.³

Bringing the Computer Race to Class

The notion of the transformative power of computing needs to be read against actual social relationships external to computing. While the rhetoric of social and cultural transformation-by-computer was well established by the 1980s, it retained an uneasy relationship with both the facts and the representation of race. As a result, early computer discourse—when it did actually address race—elaborated the belief in social transformation through better management and training of students—technophilia and paternalism went hand in hand. This was, perhaps, part of the larger attitude toward differential access: it was somebody else's problem, and best solved through simple administrative adjustments of one sort or another.

At the time of my own school-based computer education, scholarship and popular writing on computers was almost unanimous: get computers into schools, get kids involved in computing, and the earlier the better. The main-

stream news media and businesses were flooded with stories about the arrival of computing and the importance of getting computers into schools. A *Time* magazine feature from 1982 entitled "Here Come the Microkids" focused primarily on kids' encounters with computers in schools. When it did talk about race, it was largely in paternalistic tones:

Lewis Stewart, 14, a black ninth-grader at Manhattan's P.S. 118, reads at a fifth-grade level, yet mastering his school's computer was literally child's play for him. Recognized by students and teachers alike as his school's best computer programmer, Lewis works afternoons as an instructor for a computer consulting firm, introducing younger children to the machines. Last year his employers sent him to Chicago, where he displayed his special teaching gifts before a meeting of educators. As Lewis told *Time* Correspondent Peter Stoler, "I love these machines. I've got all this power at my fingertips. Without computers, I don't know what I'd be. With them, I'm somebody" (Golden).

The message here is clear: even dumb black kids can master a computer. No other student's reading aptitude is mentioned anywhere in the article; nowhere is a student's self-esteem deemed an important issue to report on. Later, the piece makes itself a little clearer: though computers are largely to be found among affluent schools, the machines are also found "in the unlikeliest of places. On a Chippewa Indian reservation in Wisconsin, computers are being used by young members of the tribe to learn their ancient and nearly forgotten language" (Golden). The unspoken assumption here is that computers are for white people: the reporter's expressions of surprise and concerns for students' self-esteem appears limited to students of color. The disparity between rich and poor, white and nonwhite is here written off as a minor glitch that can easily be overcome, while expressions of surprise serve as a placeholder for a larger tacit understanding about who is expected to be using computers.

Business reporting featured stories about schools as the next big market for computer companies. The earliest reports featured schools using computers as on the cutting edge. *Fortune* ran a piece on an elite school requiring computers for its students as early as 1980 (Tracy, Brown, and Pillsbury). A 1982 *New York Times* article on the growing popularity and dropping prices of home computers credited school use with children's interest in the machines (Pollack). Later that same year, the *Times* ran a story on schools being a key market for both current and future computer sales. A slew of other pieces followed (Morrow; Rowe; Waters). A *Forbes* piece in 1984 reported,

According to Talmis, a Chicago-based market research firm, there will be 720,000 personal computers in schools by year-end. That number pales before the almost 6 million business computers or over 6 million home machines. But consider the potential. The 50 largest school districts in the U.S., with over 9,000 schools, average only one computer for every 170 students. Ideally, educators agree, that ratio should be more like one for every three or four students. At even \$500 a computer, that's \$15 billion of potential demand (Wiegner).

Unsurprisingly, differential access was hardly a concern for the business press in this period. While writers frequently noted that wealthier children tended to get an advantage in terms of computer access, little more was said than to note the disparity (AP; Wiegner). Race and class were collapsed together as a single kind of difference, and then relegated to an afterthought, an additive; "how do we include these other people?"

During this same period, education scholars were flooded with book after book on how to integrate computers into schools and curricula, and how to decide which computers to buy. Similarly, the theory behind getting kids to computers was being elaborated: educators were calling computers "an integral part of the comprehensive K-12 school of the 1980s" (LaFrenz). Even the purportedly critical work at this point doesn't get beyond mentioning inequality. For instance, an anthology on computer literacy lists "the presence of computers for instruction in all schools and all students" as a prerequisite for nationwide computer literacy, and then claiming that "it is believed that we are now at a point where such a recommendation is both economically and technologically feasible" (Deringer and Molnar 6). Similarly, an edited volume entitled *The Computer in Education: A Critical Perspective* contained all manner of critiques of computers from the perspective of pedagogical theory and practice, but not a single discussion of limited resources or access. Douglas Sloane writes in his introduction that perhaps people feel the computer "revolution" is inexorable, and therefore there is nothing for them to do but adapt to it. The critique begins from that point:

Chances are, this is all quite true. Hidden in this assumption, however, is often another, altogether different premise: namely, that human beings have no responsible choices whatsoever in shaping, restraining, and directing this revolution, that coming to terms with it means going along with it on its own terms [...] (Sloane 2).

While Sloane is concerned about the connections between the computer, defense, and pharmaceutical industries having a negative impact on academic

freedom and on students, his main critique of computing is that it stifles children's emotional and image-based learning (7–9). While he acknowledges that “the warning signs of increasing social, economic and cultural inequalities and disruptions arising from the growth of high technology call for the best critical thought from those concerned with the career and vocational dimensions of education” (3), the book offers no such social, cultural, or economic critique.

In the same volume, Harriet K. Cuffaro offers a very insightful critique into the notion that “earlier is better” when it comes to getting computers to children. She argues that based on current knowledge of the psychology of education, that

It is when children are more firmly into functioning at the concrete operational level, at about age eight, that they are better able to take true advantage of the challenges that computers and programming may offer. Much adult eagerness to have young children use computers is based on the belief that it will be impossible to function or to be employed in the future without such expertise or knowledge (27).

Once again, the critique already accepts the parameters of the debate. Here, the best age is interrogated, but the assumption once again is that computers are essentially an administrative problem: how, when, and where to best use them is considerably more at the forefront of educators' minds than how and whether to get computers in the first place. As Cuffaro herself points out, many children who grew up without computers were able to use them intelligently and creatively when the time came for them to compute (27). Though writing at a time when computer access is severely limited for large sectors of American society, these academic writers bracket this fundamental problem, as if universal access is simply an inevitability; simply a matter of waiting for the rest of the world to catch up with them.

Yet from the very outset, writers had an acute sense of social difference, whether across the borders of nation or just neighborhood and school district. As in the *Time* article, an unspoken set of assumptions about race pervaded the discussions of computer literacy and the future of computing. Occasionally, in particularly outlandish examples, such assumptions might become visible:

In human history it is always those who were able to develop and use new technology adroitly who in the long run not only survived better, but also came to dominate others. Homo sapiens cerebus will survive

and prosper, and in due course dominate all those who do not partake of the new intellectual technology. Among higher organisms, new behavior patterns, rather than new anatomical features, set the stage for a revolution as profound as the hominid revolution of half a dozen, or so, million years ago. Will we be able to cope with it? (Stonier and Conlin 196)

As Robins and Webster point out, while this integration of social Darwinism with high-tech ideology is a particularly strident instance of technological ideology, it nevertheless emerges from a very large body of literature where technological innovation and social progress are one and the same thing (106). The reasoning underlying this kind of “compeugenic” rhetoric is purely tautological: as if those who have superior intelligence will develop it, while those races lacking it won't. It biologizes intelligence in the most cliched fashion possible, while laying bare the implications of a mythos of technological progress more generally: “you get what you deserve.” It is easy to be critical when the eugenic language is trotted out to support this kind of thinking, but technophilic discourse in general bears the trace of this kind of categorical thinking: as if the people with the better gear are the better people, more advanced, more developed.

Enfranchising Minorities through Enriching Elites: The Technology Act of 1982

Computer manufacturers were of course quite interested in rectifying the lack of computers in schools. To this end, corporations donated computers (as a tax write-off) to programs they thought would be particularly useful or successful. But in 1982 the stakes were raised when Steve Jobs, CEO of Apple Computer, convinced California representative Pete Stark to introduce a bill greatly increasing the tax break for corporate donations of computers to schools. The case of H.R. 5573 provides an interesting example of where and under what conditions “race” was deployed in early computer discourse; race was clearly blurred with class in discussions of the bill. The bill, which advocates called “The Technology Act of 1982” and was popularly known as “the Apple Bill,” would have temporarily loosened corporate tax regulations to allow an unusually high level of corporate donations of computers to schools. Apple had announced that if the bill was passed, it would give a computer to every single school in the country. Lawmakers seemed divided. While the

House passed the bill by a vote of 323–62 with 47 abstentions, the Senate passed a slightly different version of the bill less favorable to equipment donations. The bill died in conference committee when the ninety-seventh Congress adjourned.⁴

While H.R. 5573 is not a key turning point in the history of computing in schools, the hearings on the bill mark an important moment in the racial history of computing. The hearings show quite clearly how and on what terms questions of race and differential access were framed in discussions of computing in the early 1980s. This also shows the degree to which the vision of corporations was allowed to set the terms of the debates around computing.

The bill itself contained some precautions against corporate abuses. For instance, corporations could not donate product over six months old, thereby guaranteeing that they wouldn't try to flood the educational market with equipment that wouldn't sell otherwise. Similarly, the tax write-off was good for only a year, meaning that this would be a one-time effort to get computers into schools. Nevertheless, there were some serious objections. Apple was already a leader in the educational market, and it, along with several of the other big computer companies—most notably Hewlett-Packard—stood to gain a lot from this legislation. The bill clearly favored larger corporations that could afford to build and move the extra stock in a short time period. While Apple was offering to donate a single computer to every school in the country, other corporations like Hewlett-Packard and Tandy focused on the possibility of training programs for teachers and the development of educational support software. Additionally, the bill left many questions unanswered: What would happen after this one year period? Were Apple's computers purely for student use or could they be put to administrative use as well? What kinds of ongoing support could schools expect after the initial donation?

The Department of the Treasury adamantly opposed the bill on the grounds that it did not foster "disinterested charity" and that it could double or even triple corporate tax deductions (see House 4–5, 15–16). Had the bill become law, its effect would have been notable, but not revolutionary by any means. At the time, it was well known among educators that a single computer in a school was of almost no pedagogical use. A survey from 1982—the same year the Technology Act was considered by Congress—showed that junior high and high school students often didn't even know they had access to a computer in their schools (Anderson 13–14). Reporters were also clear that entire computer labs were necessary to provide effective computer education to students (Wiegner).

Yet the debate characterized the bill as providing needed computers to students who otherwise would not have access; and race was a key issue just beneath the surface of these debates. Race was an explicit theme in talking about corporate philanthropy—as a way of talking around class issues. Emery Rogers, Chairman of the National Grants Review Board of Hewlett-Packard, proudly announced,

We have observed a situation in our own neighborhood where H-P made a grant of ten personal computers to a high school in an area with largely minority enrollments. It is exciting to hear those kids after they have stepped into that program and have developed a sense of self-confidence. They will get the summer jobs; they are going to be able to work at Apple or Hewlett-Packard or some other computer oriented company; and equipped with useful knowledge they can step out of the frustration loop. These young people have confidence in themselves, and, furthermore, they find that nobody at the school teases them. There is a widespread desire to get into these programs (House 31).

Rogers's rhetoric here is interesting in its sleight of hand—computers bring "minority" kids self-esteem that they wouldn't otherwise have. Once again, computer access was about self-esteem for "minorities": the implication being that they were expected to have less self-esteem, and maybe needed a little help from the white people in the corporations. Thanks to corporate beneficence, "minorities" can step out of the so-called frustration loop. Here, Rogers uses race as a euphemism for the double injuries of race and class. The unspoken assumptions here should be clear but are worth mentioning: that schools with minority enrollments are poor schools; that largely white schools are better off; that minority kids need help to get out of poverty (what Rogers metonymizes as the affect of frustration). While I have no doubt that Hewlett-Packard did in fact donate computers to a relatively poor school, it is clear that part of Hewlett-Packard's claim is that they bridged a racial—or at least racialized—difference between ostensibly white computer culture and "minority" students.

Though many white organizations had benefited from Hewlett-Packard's charity over the years, Rogers focused on race:

We think literacy in science is crucial to this country. We lend smart people at H-P to minority colleges and to a high school or two to help those organizations generate and implement science and engineering courses. [...] (31).

The quote counterpoises smartness and "minority"—the smart people move from Hewlett-Packard to minority schools, and not the other way around.

Race also figured in the hearings on H.R. 5573 as an external threat, and here the coding moved from African American or Native American to Asian. Other speakers, while more clear on class issues, used invocations of racial difference as a foil; Tennessee Representative Albert Gore, testifying in favor of the bill as the head of the Congressional Clearing House on the Future, invoked class as an issue in the legislation, making racial difference a kind of external threat to the nation:

We must remember that our high school students are able to pursue an elective education only so far—often only as far as the school's resources.

In the case of computer hardware and instruction, those resources are nil.

We occasionally read about an exciting new effort by a progressive—and usually affluent—high school to develop a computer oriented curriculum. I wish I could tell you today that such programs abound in my State of Tennessee.

Unfortunately, among the 295 public secondary schools with more than 260,000 students, there are no more than a small handful of courses in computer literacy, much less actual hands-on computer hardware opportunities (20).

Gore invoked the specter of the "Japanese"—"we are constantly made aware of our need to catch up with the Japanese," but that education is not allowing the United States to maintain its entitled dominance:

Our secondary schools and educational planners recognize this problem, and they are capable of planning for it but their hands are often tied by budgetary constraints.

The purchase of a \$2000 computer and maintaining the instructor to use it is simply out of reach for most public schools, certainly those in my district and through the State of Tennessee.

The modest tax deduction allowed in H.R. 5573 may be one answer—and I believe it is—a very limited impact on revenues with a clear long-range benefit for schools throughout the Nation and for our society (21).

There is a slippage between nation and race in the nationalist rhetoric the advocates for the bill used: while the sentiment was nationalist, there were

clearly racial undertones in the way that nationalism was articulated. Similarly, Rogers pointed out that "I have just read an editorial in *Science* magazine which says that because of the deplorable state of equipment in many of the teaching situations in America, the students are going to be trained as if they had graduated from a school in a developing country" (31).

Yet for all the allusions to economic inequality, there was no questioning of corporate sponsorship of computer literacy, the dependency on corporations' beneficence to get computers into schools. Apple CEO Steve Jobs described Apple's promise to donate a computer to every school in the nation as "enlightened self-interest," in that a generation of kids who grow up using computers are more likely to buy one, and that Apple hopes to help other states "duplicate the success of the State of Minnesota" in developing training programs and software applications for donated computers (25–26). Jobs also anticipated the critique of corporatizing education:

This brings me to what is truly important about H.R. 5573. While the Bill may someday benefit any company which donates computers under its provisions, the important point is that the Bill is clearly good for the United States. Hopefully we have not come to the point in this country where any law that may be even remotely good for business automatically is perceived as bad for the country. In the area of technology particularly, that perception is fatal to the long term well being of America (27).

Similarly, Representative James M. Shannon of Massachusetts claimed that corporations giving schools computers directly was "simply the most efficient way" to help fill the need for technology education (18–19). In this rhetoric, corporate interests *became* universal interests. Jobs' hyperbolic warning that an "antibusiness" sentiment was behind criticism of the bill reads as simply ludicrous when considered in the broader context of federal legislation at the time: the loosening of regulations on industry after industry and the increasing tax breaks for wealthy individuals and corporations that characterized American lawmaking in 1982 could hardly be read as antibusiness. Jobs was essentially red-baiting his opposition.

Alongside these appeals to the immutability of the interests of technology business, appeals to racial difference and inequality were clearly used as a kind of rhetorical lever to help propel the bill through committee, but H.R. 5573 would have hardly begun to address real inequalities in access to computer education. Instead, it would have simply accelerated the proliferation of com-

puters in schools but upheld existing inequities. The racial topology of computers is thus at least as much structured by race relations external to it as it is an agent in transforming those relationships. While the hearings claimed that computers could change students, the hearings show that the stratification of students had already shaped computer culture.

Race Reclassified: Into the 1990s

Though H.R. 5573 never made it into law, computer companies increasingly began to target nonwhite and poor populations for their educational computer grants (Apple, for instance, touted this through their public relations department; see Business Wire).⁵ Still, the criteria for educational donations are telling. According to the 1986 *Taft Corporate Giving Directory*, Apple made equipment donations that would “stimulate software development and produce important models of educational software.” In the terse, fragmented language of the directory, Apple:

Currently supports model educational computing projects that use microcomputers to enhance teaching and learning. Favors programs in every major discipline that are jointly planned and implemented by school districts, colleges, and universities in different communities throughout the country. Among recent priorities are courseware development in the areas of teacher training; vocational education, micro-computer maintenance/training; simulations (emphasizing the process of learning, problem solving, and practical living skills); and authoring aids (Taft 46).

Clearly, Apple’s philanthropic goals were complementary to its commercial goals. It favored educators who were already plugged into larger professional networks (i.e., “jointly planned”), and who already had some access to computing resources and some basic computer knowledge. As a result, these philanthropic goals helped perpetuate already existing stratification of access to computers. Apple’s decision-making criteria are even more instructive. Applications for educational-affairs grants were decided on the bases of uniqueness of application; potential for widespread use or interest in resulting product; adequacy of procedures specified to complete the project; degree of potential benefit to education or training; capability of achieving expected results; reality of time estimates; evidence of cooperation/coordination; and potential for future support and maintenance of the **project** (47). As Kenneth Jackson has shown with

respect to the criteria for Federal Housing Administration (FHA) loans, apparently “objective” standards can hide racial biases.⁶ Any FHA loan guarantee had to have an “unbiased professional estimate” beforehand that would rate the property itself, the mortgagor or borrower, and the neighborhood. FHA criteria like “relative economic stability” of the area and “protection from adverse influences” were the deciding factors, and as Jackson points out, both carried implicitly white, middle-class assumptions (Jackson 206–207). The same can be said for Apple’s criteria: uniqueness of application, potential for widespread use or interest, and potential for future support could all be read against the existing differences in school funding and district profiles. In short, the criteria could have done at least as much to reward the beneficiaries of existing inequalities as they could have to ameliorate those inequalities.

By 1991, however, Apple’s philanthropic priorities had changed. Taft reported that

the most recent awards were made under grant cycles called “next Steps” and “equal Time.” These grants support 80 projects serving **student** populations that historically have had limited access to computer technology in traditional classroom settings. These groups include linguistic and ethnic minorities, the economically disadvantaged, the disabled, and female students studying math and science (42).

Apple had clearly developed an interest in traditionally underserved populations. But this was not simply an attempt to rectify previous imbalances in their corporate giving. On the contrary, it was part of a larger shift in industry attitudes concerning racial and other differences for the purposes of marketing.

In recent years, nonwhite users have been targeted by manufacturers as the next hot market for computers and Internet services. Race has moved from a question of access to a question of niche marketing. In 1993, Matrix Communications of Pittsburgh made a name for itself selling black-positive clip-art for word processing and desktop publishing programs (Creedy). By the mid 1990s, the mainstream press was reporting on nonwhite groups actively using computers and the Internet while publications specifically geared at particular racial and ethnic audiences urged their readers to go online. While black leaders held congresses and workshops to get African Americans more involved online, articles began to appear encouraging nonwhite audiences to go online and providing guides to nonwhite sites on the World Wide Web (Akst; Fitten; Jenkins; Moore; Poole). At the same time, more and more computer and Internet businesses specifically targeted nonwhite

consumers and especially African Americans. While Microsoft and Black Entertainment Television (BET) formed a joint venture online (MSBET), survey researchers were outlining new marketing directions. One article quoted Edward Sarpolus, vice president of a midwest market research firm, claiming that "among minorities, such as urban African-Americans, computer expertise is seen as a path to self-improvement. [...] The African-American population is younger as a whole. As it reaches prime earning and family years around age 35, a pent-up demand is not being met" (Maurer). Another article touted the Internet for its ability to reach "niche audiences, including minorities that mainstream media often miss" (Messina). Other services like American Visions Society Online sought to lure more African American users on to the Internet by providing a service geared toward that audience (Tran).

It would seem, then, that race is becoming an increasingly important marketing issue for Internet service providers and hardware and software manufacturers. Yet this booming interest in nonwhite audiences is strikingly unsatisfying. To begin with, there remains a significant racial gap in frequency and extent of computer use: white Americans are still considerably more likely than Americans of Hispanic or African descent to have and use a computer at home or at work (Tran). The *Education Technology News* reported in August 1996 that a wide, race-correlated disparity in the quality of computer education at schools still exists; Thomas Novak and Donna Hoffman's controversial study also reported a serious black-white gap in Internet use (Novak and Hoffman). Similarly, Kelly Gates has found in a study of indigenous people's websites that many are entirely run by relatively elite, white webmasters acting as surrogates for the groups online (Gates).

Although a growing nonwhite presence online is something to applaud, we should also be wary of unquestioned adoption of marketing mindsets and frames of reference. Clearly, the issues of access that began to emerge in the 1980s as whiter schools gained more access to computers are still with us today. The legacy of the deep federal cuts in public education over the course of the 1980s and corporations' preference for elite, innovative schools still leaves its mark on computer access and attitudes. Marketing to niche audiences will help, but teaching their children would be a better approach.

Conclusion: E-Raced

Important questions remain about differential access to the Internet across racial lines. Even if there weren't significant racial gaps in Internet access in the

United States, they would continue to exist worldwide. Of an estimated 107 million Internet users, about 62 million are in the United States and another 20 million are in Europe. As more people get telephones and Internet access, there are an increasing number of people without even basic sanitation (Crossette). Moreover, the treatment of Africa by global media conglomerates is worth some consideration:

Aside from the business and affluent classes in South Africa, [sub-Saharan Africa] seemingly has been written off by global media firms as too poor to develop. It does not even appear in most discussions of global media in the business press. Global media firms tend to break the world down to North America, Latin America, Europe, and Asia. When the *Financial Times* published a world map to highlight MTV's global expansion, it simply removed Africa and replaced it with the names of the thirty eight European nations that carry MTV. [...] Left to the global media market, sub-Saharan Africa's media and communication systems will remain undeveloped, and even wither (Herman and McChesney 65).

If "the market"—that mythic, supposedly godlike driving force of capitalism—even appears to be offering alleviation to racial injustice in the United States, a global perspective should clarify our vision: free market capitalism extends racial injustice; it doesn't alleviate it. Partly, these trends can be read as a result of capitalist self-interest, since Africa does have a relatively weak infrastructure and a somewhat proportionally smaller consumer class than other continents, but it is also circular reasoning: "Africa doesn't have infrastructure, therefore we won't build it there." Inequality is perpetuated and intensified through the rationales of capitalist technological development.

For some, as Lewis Mumford has argued, technology is a "way of reaching heaven" (283). The Internet represents so many of the hopes and dreams of a professional-managerial class: instantaneity, interactivity, community, agency. In fact, the power, significance, and impact of the Internet is perhaps exaggerated because of its centrality to the social groups most likely to write assessments of its importance—academics, journalists, executives (Herman and McChesney 128). No doubt that the existence of the Internet shapes the politics of race in new and interesting ways; but we should be equally attentive to the ways in which the politics of race and class have shaped the very character of the Internet and computer culture at large. The politics of access are not simply a matter of getting more people online. It is also a matter of how, when, and on what terms people are coming online, and what they discover upon arrival.

Notes

1. In fact, actual control over computer function even at the programming level is decreasing for the average user and the average programmer. As more and more functions become automated, as more "wizards" become available, more decisions about the nature and function of any given program are made before the programmer or user ever sits down to the terminal (Ullman).
2. It is, I think, ill-advised to think of "online" culture as an autonomous or coherent cultural domain apart from "offline" culture. To begin with, it separates the Internet from a whole media environment—telephones, televisions, fax machines, clocks, print, and so forth, that work *together* in the production of subjectivity and experience. Further, the notion of an autonomous "online" is to uphold a very rigid Cartesianism: the mind is firmly split from the body. For instance, is the office worker or academic who sits in an office and moves from a word processing document to e-mail and back again participating in "online" culture or "office" culture? The answer, of course, is both—and that consciousness of simultaneity is sorely lacking in most accounts of online experience.
3. Gender is also largely absent from my analysis here, though clearly there is a gender politics of computing that would similarly interact with race in important ways. It remains an open question as to whether, for instance, specifically African American, Hispanic, or Asian American notions of masculinity and femininity affect the gender dynamics of computing in a manner substantially different from white notions of masculinity and femininity.
4. California did pass a bill similar to H.R. 5573, and Apple did donate computers all over California.
5. Corporate giving, however, is by no means a panacea. Companies still resist full disclosure of their charitable giving. Many companies cited "special interest groups" as a threat to corporate giving, though the problem groups for corporations appear more often on the right than on the left. Merck & Company's \$20 million donation (over ten years) to the United Negro College Fund met with some resistance from shareholders. Similarly, AT&T ended a 25-year relationship with Planned Parenthood because of a letter-writing campaign and threatened boycott by antiabortion groups.
6. The National Housing Act of 1934 established the Federal Housing Administration in an effort to stimulate the moderate-cost housing market. The FHA was designed to encourage improvement of housing standards, to stabilize the mortgage market, and to provide low-interest long-term loans for the purchase of new housing. In fact, FHA loans for improving existing structures were small and for short durations, thus encouraging the purchase of new homes over modernizing old ones. FHA loans were widespread after the Second World War, enabling a whole generation of people to move out into the suburbs.

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12. Erasing @race

Going White in the (Inter)Face

Beth E. Kolko

Technology engages. It transfixes eyes to a screen, draws fingers to a keyboard, focuses attention on the output of processes. But plugging in, configuring, turning on, and programming bring us in small steps closer to the technological artifact without, somehow, ever allowing us direct contact. Our interactions are with the representation of the machine rather than with the wires and circuits themselves; we meet technology at the interface. And while the technology that is the Internet brings us a cyberspace of multiple machines, multiple users, and multiple locations brought together in apparently seamless conversation, the interfaces that govern our interaction with such a cyberspace are responsible for multiple translations and accommodations. Within interactional realms such as virtual worlds and chat rooms, where people construct identities and personae for themselves in active and interactive ways, cyberspace requires one of the more intense kinds of engagement; in the cyberspace of virtual worlds, experience is defined by taking action, including deciding explicitly who you are, or who you want to say you are. Consequently, the design of such spaces—the interface that users access—has significant power to affect the interaction expressible at such sites.