Other books authored or edited by Steve Jones:

CyberSociety 2.0: Revisiting CMC and Community
Virtual Culture: Identity and Communication in Cybersociety
CyberSociety: Computer-Mediated Communication and Community
Rock Formation: Popular Music, Technology and Mass Communication
For Ted, Don, Linda, and Beth

Someone’s always missing
From the picture
Of the perfect scene we’re all headed for
Someday

—Lynn Cantfield/Area, “Puzzle Boy,” 1990
6. It is a certainty that many members of the List are unaware that their postings can be accessed without subscribing to the List, by going to a separate archive on the Web.

7. Interestingly, the majority of these interviews took place in off-line, face-to-face circumstances during a gathering of List members.

References


CHAPTER 13

Thinking the Internet

Cultural Studies Versus the Millennium

JONATHAN STERNE

Consider the role of the Internet in the life of one of my students. She is an undergraduate at a large midwestern research university. She lives in the dormitories and walks a few blocks each morning to class. Between morning classes, she ducks into one of the many campus computing facilities and quickly checks her e-mail. She finds a note from a high school friend, several forwarded lists of jokes, and a few announcements about a club she once visited. She fires off a quick e-mail to one of her professors to see if they can meet the following day about a paper that will be due after the weekend. She quickly logs off and heads to her next class. Later in the day, while at the library, she uses the campus library network to locate some books she needs for the research paper. As she works on an assignment later that

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night in the dormitory’s computer lab, she procrastinates by visiting some of the Web sites for her favorite television shows and replying to her friend’s e-mail. When she checks her e-mail again, the professor has left her a message to call during her office hours the next day. Other messages have arrived. Later in the semester, she will show up at the same computer lab to do her course work only to discover that it is full and there is a line out the door. Although many students depend on the school for their access to a computer, campus facilities cannot meet student demand during midterms and finals.

A few things should be immediately obvious about this banal scenario. First, the Internet is part of the fabric of my student’s daily life. It is no more a break from her daily experience than getting on a crowded elevator to move up three stories in a building. Second, the relationships she maintains on-line are not strictly or necessarily separate from the relationships she maintains off-line. Her on-line activities may mark her only participation in the club or her only activity as a fan of certain television shows apart from watching them, but even in these cases, her experiences on-line are connected with her off-line experiences. Third, her computer use is very much determined by her social location. She doesn’t have a computer of her own, but the university provides extensive facilities and requires her to use them. As a result, like many of her colleagues and mine, she has enough practical knowledge of computing to use her e-mail, browse the web, and do her course work, but beyond that, the workings of computer hardware and software are a mystery for her. Her experience of computing is likely analogous to the relationship most American motorists have with their cars: She knows enough to get around and no more. Finally, she is on her way to becoming a certified member of the educated classes (through her undergraduate degree) and is likely preparing for a career in which computer use will be part of her job.

Despite the Internet’s relative banality for the majority of its users, its connection to other media (in my student’s case, telephony and television), its institutional connections, and the relative privilege of its users, critical scholars have largely followed other academics’ leads in depicting the Internet as a millennial cultural force. In these millennial scenarios, the cultural critic wonders at the possibilities and “impact” of the “new” medium: Will it revolutionize our lives or be a tool of alienation? The perceived newness of the Internet may suggest to some people that the available conceptual tools and frameworks for thinking about communications need to be rethought to truly grasp this transformative technology. But where do these discourses of technological transformation come from? Passing famil-
If this chapter appears particularly polemical concerning the ideologies surrounding “on-lineness,” it is because this work itself fits within the metadiscursive approach to Internet studies that I discuss later. In this case, I have endeavored to consider cultural studies of the Internet as a road into the critique of Internet discourse itself. The success of my readings will ultimately be measured by the degree to which this chapter helps others to move beyond the commonplaces and clichés of Internet scholarship and reconceptualize it in intellectually challenging and politically vital terms.

Politics, Context, Articulation, Theory: Issues in Cultural Studies

Perhaps because of the ambiguity in its name, cultural studies has become a notoriously difficult field to define. Some people take the term at its most general, as a kind of cultural analogue of “social studies” that encompasses all of the humanities and qualitative social sciences. In this model, the reference to culture in the name is a reference to the object of the “studies” the scholar conducts: Any study of culture then becomes part of “cultural studies.” Although such a definition may be useful for administrators seeking to downsize liberal arts programs, it is far too general and ill defined to be of much serious intellectual use. Imagine a single chapter in a book on Internet research covering “social studies approaches”; such a chapter would have to cover the work of economists and archaeologists, specialists in women’s studies and area studies, political science and sociology. In other words, it would be too broad to be useful to its readers.

I have come to think of cultural studies more as a proper name for a genre of scholarship: Cultural studies is an orientation toward scholarship (which is different from a method—we will see how below), and this is how I use the terms cultural studies and cultural study in the remainder of this chapter. In this sense, cultural is an adverb modifying the studies; the object of cultural studies (e.g., the particular object that one subjects to “cultural study”) remains unspecified in the name. Although the field takes its name from work done at the Centre for Contemporary Cultural Studies at the University of Birmingham, England, during the 1960s and 1970s, the Centre is now only one among many places where such work is conducted. Similarly, although one can trace a “tradition” of cultural studies back through work done at the center from the 1960s through the early 1980s (Hall, 1992), not all cultural studies work considers itself to be in dialogue with that particular body of work. Indeed, scholars in recent years have made claims for other “schools” of cultural studies originating in other places, such as the subaltern studies school in India or Latin American or Australian cultural studies (Barbero, 1993; Cancillini, 1988; Frow & Morris, 1993; Guha & Spivak, 1988; O’Connor, 1991). As the term cultural studies gained currency among academics worldwide over the course of the 1980s and 1990s, definitions of the field proliferated—the confusing name giving birth to many attempts to define the field (Grossberg, 1997; Hall, 1992; Nelson, 1989; Nelson, Treichler, & Grossberg, 1992). My definitions of the field below draw on Lawrence Grossberg’s work (see Grossberg, 1997, for a range of his writings in this area), with a few modifications.

In general, cultural studies is a body of work concerned with, as Tony Bennett (1993) puts it, culture and power. This concern with culture and power is characterized by a set of shared intellectual strategies: These include attention to the political character of knowledge production, an orientation toward the analysis of context, a commitment to theory, and a theory of articulation. Although not every cultural study may exhibit all of these characteristics, they are useful starting points for getting a bearing in the field.

THE POLITICAL CHARACTER OF KNOWLEDGE PRODUCTION

Although many fields have recently seen debates about the “ politicization” of their subject matter (e.g., on politics and literature, see Berube, 1994; Graff, 1992), cultural studies sees all knowledge production as inherently political. In other words, cultural studies scholars simply acknowledge the political character of their own work, the work of other scholars, and their objects of study. Cultural studies scholarship is thus characterized by more frequent use of autobiographical and other self-reflexive strategies for putting the scholar in the analysis, frequent detours through theoretical concerns, and generally a preoccupation with the construction of its object of study and the construction of the scholar’s writing style and speaking voice. But cultural studies is even more political in its object choices: Ideally, it chooses objects for the purposes of political intervention. This may take the form of analyzing a present crisis (Grossberg, 1992; Hall, Critcher, Jefferson, Clarke, & Roberts, 1979), or it may take the form of an intervention in the conceptualization of politics (Hall & Jefferson, 1976; Morris, 1990). Of course, the term political is itself highly contested within the field; and one
can easily slip into speaking of "politics" without being more specific. Styles of self-presentation on-line, gender relations on-line, the economics of computer use, and U.N. policy decisions are all political, but they are each political in a different way. Specificity is important lest one's claims about a particular kind of politics be interpreted as a claim about all politics. Finally, cultural studies is not so much a politics in itself as a response to politics both in and outside the academy. It is not a substitute for the work of activists or even for other kinds of politically motivated work in the academy. Ideally, it is antiseptic, anticapitalist, antiracist, antiheteronormative, and anticolonial in its politics, but it is also ideally strategic, meaning that any given cultural study is not bound to the requirements of critiquing all forms of domination at once (after all, even the most avant-garde scholarly writing is still a more or less linear form of expression).

For the Internet scholar, this commitment to politics takes at least two forms: the critique of object choice and the critique of the research practice. Why study the Internet? Is it interesting just because it's a trendy topic or because it points to something more significant than itself? Moreover, what is at stake in how the Internet is studied? What are the political dimensions of the intellectual choices the researcher makes and, more important, the connections between the research and larger political problems inside and outside academia?

THE PRODUCTION OF CONTEXT

If cultural studies’ goal is to think politically, then its object choice shifts somewhat. Although cultural studies is often lumped with the humanities, it differs from many humanistic disciplines in that it is not primarily concerned with the interpretation of texts. On the contrary, cultural studies is primarily concerned with the production of context for a text, event, or practice under consideration. Thus, for instance, it is not the ultimate goal of a cultural study to determine what a given event on-line means for its participants (although this may be part of it) but, rather, how the possibilities for meaning are themselves organized. Interpretation of texts and artifacts is a necessary element of cultural studies research, but it is not the ultimate goal of cultural studies. Cultural studies seeks a richer understanding of the political character of cultural and social life, and this means examining the relationships among people, places, practices, and things. This move is, again, crucial for Internet researchers: Where does the Internet fit into the social universe?

What are the conditions of possibility for the particular practice or event being studied, both on-line and off-line?

ARTICULATION

One assumption underlying cultural studies' attention to context is that it is not possible, in advance, to know the effects of whatever is being studied. In other words, by looking at a text or event, the scholar cannot simply deduce its meaning or effect in the world. Similarly, cultural studies does not take its objects as given but as made. Thus, cultural studies requires a theory of how things in the world are connected with one another; this is called the theory of articulation. Articulation is the form of a connection between two or more previously unrelated elements (such as ideologies, practices, social groups, technologies, techniques, etc.) to make a temporary unity. Articulation also refers to the organization of said elements in their articulated relationship and the process through which that connection and organization is produced (Hall, 1984, 1986). Stuart Hall (1986) uses the metaphor of the articulated lorry: A truck that has been hitched to a trailer; any single cab can be hitched to many trailers.

A theory of articulation is based on the assertion that there are no necessary correspondences among different elements (people, ideologies, places, events) but, rather, these correspondences have to be made. All cultural phenomena are articulated: They are, internally, a set of connected elements, and these systems then in turn are connected with one another. Thus, any case of cultural change or reproduction must be understood as a process of disarticulation and rearticulation rather than as the combination of free-floating ideologies, practices, and constituencies waiting for their chance to get hitched. Pointing out that something is articulated (and therefore, e.g., “socially constructed”) does not in and of itself weaken the force holding together the articulation; it is the beginning of the researcher’s work, not the end. For our purposes, articulation will be important in at least two different ways: in considering (a) what counts in a cultural study of the Internet and (b) how to think about and represent the Internet. Articulation is also a critical issue because it suggests that the language used to describe the Internet is itself the result of an articulation: There is no inherent connection between the Internet and the language used to describe it. For instance, the connection between millennial discourse and the Internet is itself an articulation that requires some analysis.
THE COMMITMENT TO THEORY

If cultural studies requires Internet researchers to critique the political dimensions of their research, attend seriously to context, and understand the Internet as articulated (i.e., made rather than given), it also requires the researcher to find new and more effective ways to describe the Internet—hence, the commitment to theory. Although cultural studies makes use of theoretical reflection in many different forms, cultural studies is not simply reducible to theory. In practice, this means that the cultural studies scholar is expected to, at some point in the research, take a “detour through theory” (although this need not appear in writing) to find an explanatory framework suitable to the object under study and return from that detour through theory to a new analysis or description of a concrete problem. The point is not to develop a pure theory but, rather, to use theory to help explain different dimensions of cultural phenomena. What theories the scholars use and how the theories get implemented can vary greatly, but all good cultural studies use theory in this fashion—as a means toward better understandings of the object at hand rather than as an end in itself.

Cultural Studies Does the Internet

Cultural studies, as opposed to an established discipline such as sociology or anthropology, has always been rather ad hoc in its approach to method: a little historiography here, a little ethnography there, a dose of hermeneutics, and a twist of some flavor of theory. Many scholars have leveled criticisms of the field from both inside and outside cultural studies for its lack of methodological rigor (Grossberg, 1992; Morris, 1990; Schudson, 1997; Sokal, 1996), and others have called for a new level of attention to and formalization of method in cultural studies scholarship (Bennett, 1993; Cunningham, 1991). Despite my flip description and this new attention to method (e.g., see the method-based critiques and reformulations of cultural studies in Ferguson & Golding, 1997), I believe its experimental approach to epistemology and method is actually one of cultural studies’ strengths as a field. Rigid adherence to a particular theory or practice of method is good when seeking certain kinds of academic legitimacy but does nothing to guarantee the intellectual value or the political usefulness of research (Bourdieu & Wacquant, 1993, p. 30; Mills, 1959, pp. 50-76). This is another reason this chapter has less to say about method and more about the construction of the object: Rigidified and formalized method works against cultural studies’ distinctively strong suits; methodologism limits the possible configurations of context and the range of possible theoretical and political moves a writer can make.

That said, the most important methodological principle for a cultural study of the Internet is simply to have one. To truly learn anything about the Internet, one has to ask carefully considered questions that can be answered only through some kind of organized research. Too much work on the Internet has hitherto thrived on other academics’ ignorance of the medium. Despite the increasing availability of on-line services in colleges and universities, many academics are still relatively inexperienced with on-line communication. Explanations of e-mail, Netnews, flaming, Java, and so forth belong in introductions to the medium, although analyses of these phenomena are certainly appropriate objects of research. Similarly, some academic writing seems to have nothing to do with the actual character of the Internet. Very little is Internet specific to Sadie Plant’s (1996) claim that “complex systems and virtual worlds are not only important because they open spaces for existing women within an already existing culture, but also because of the extent to which they undermine both the world-view and the material reality of two thousand years of patriarchal control” (p. 170). Plant can claim that the mere form or existence of cyberspace “overheats” the “patriarchal economy” (p. 182) only because her claims and language are so vague. Moreover, she uncritically repeats the millennial language of technological transformation that accompanies so much discourse about the Internet. Under what conditions would the mere presence or form of a technology ever “overheat” patriarchy? Has this ever happened before?

This is not to argue against theoretical and, more generally, speculative approaches to the Internet as such but, rather, to assert that theorizations of the Net require the same level of specificity as other objects one might theorize, such as literature, music, politics, globalization, or the relationship between time and space. Playing to other academics’ ignorance and building a theory based on vague impressions are two major errors any scholar can avoid with minimal effort. The problem thus becomes the construction of the object: What should count as, and in, a cultural study of the Internet and why?

This central issue could be stated as a matter of borderlines: What is “the Internet”? Is it coterminous with concepts such as cyberspace, on-line culture, computer-mediated communication, or virtual reality? Thus far, cultural studies “of the Internet” have ranged widely. Rob Shields’s (1996a) edited collection Cultures of Internet contains articles considering France’s Minitel,
the global information infrastructure, virtual reality, virtual politics, MUDs (multi-user domains), listservs, and the coming of the Internet to Jamaica. By calling the collection "Cultures of Internet" rather than "Cultures of the Internet," Shields appears to be taking a more processual approach—Internet referring to a wide range of processes. Steven Jones's CyberSociety (Jones, 1995a) is more oriented toward "computer-mediated communication" and ranges from analyses of computer and video games and virtual reality to Usenet and e-mail. The common link appears to be a person sitting at a screen controlled by a microprocessor. Yet both of these anthologies are quite scattered; they are far from systematic, comprehensive, or even coherent when read from cover to cover (they are, after all, anthologies). What would a full-length, fully developed cultural study of the Internet (say, called The Internet) look like? Would such a work even be possible or desirable?

At its best, cultural studies has produced seminal book-length works with a critical/political take on cultural phenomena. In their time, these works rethought their objects and the ways in which they were written about: They reworked the dominant metadiscourses of their objects and offered a viable alternative. Yet there has not yet been a similar cultural study of the Internet.

Seminal work in cultural studies has come in two varieties: collectively authored works and single-author works. Collectively authored works can either be a series of essays (Hall & Jefferson, 1976) or a book-length argument (Hall et al., 1979) but come out of collective and actively collaborative research endeavors. Although there have been a number of anthologies on the Internet and computer-mediated communication more generally, they are all collections of individual works rather than the results of collective research projects. Single-author works, such as Dick Hebdige's (1979) Subculture or Raymond Williams's (1973) Television: Technology and Cultural Form, offer a more conventional and synthetic scholarly argument but lack the richness of collaborative texts. Because it deals with a medium, I want to focus briefly on Williams's Television as an example.

Williams's (1973) Television is an exemplar of cultural studies work in its critique of existing discussions of its object of study, in its own construction of its object, in its theorization of the contexts and contours of its object, and in its approach to the stakes and politics of its object in broader cultural terms. Williams wrote that his book was an attempt to consider the relationships between television as a technology and television as a cultural form: "In the contemporary debates about the general relation between technology, social institutions and culture, television is obviously an outstanding case" (p. 71).

From the very beginning, his work is located in a broader intellectual and political context.

Williams engages contemporary debates about his object of study without submitting to their terminology or conceptualizations. So for instance, Williams's critique of technological determinism, especially the media effects approach (pp. 116-120) and the media theory of Marshall McLuhan (pp. 120-122), represented a significant challenge to the two dominant paradigms of academic television study at the time of the book's publication.

Television also examines the qualities of the object of study and retheorizes its approach based on distinctive conceptual problems Williams encountered. He coined the term "mobile privatization" (pp. 17-25) to describe the conjunction that conditioned television's institutional and social development—the increased privatization and atomization of social life on the one hand and the increased dependence on transportation and communication technologies on the other. Similarly, he coined the term "flow" (pp. 72-112) to describe the texture and experience of television's textuality. Drawing from Williams's fertile suggestions, television researchers have made use of these two concepts for over two decades.

Finally, and most important, Williams understood his book as an intervention into the discourse about television—not only the critical, analytical, and descriptive concerns of academics but the political concerns of policymakers and users. His last chapter, rarely read today, deals with the future of television as a technology and an institution. Consider his prescient warning about future developments in cable television and videotape:

We have always to remember that full development of the new video technology will take some twenty years: say between now [1973] and 1990. For this reason, some people, especially in the established authorities, manage to feel fairly relaxed about it: the problems will be sorted out as we go; it is no use trying to cross bridges before we come to them. But this is wrong on two main counts. First, some of the most serious problems will arise within the next few years: notably in relation to policies for cable television. Secondly, the history of broadcasting institutions shows very clearly that the institutions and social policies which get established in a formative, innovative stage—often ad hoc and piecemeal in a confused and seemingly marginal area—have extraordinary persistence into later periods. . . . (p. 141)

As Williams wrote, U.S. courts were clearing the way for Home Box Office (HBO) to begin broadcasting current movies, effectively breaking the net-
work monopoly on entertainment television and thereby making viable a much larger consumer market for cable television in the United States. Williams’s expressed concern with alternatives to the dominant media system and vision of an alternative future is sorely lacking in cultural studies today.

Through this example, we can see some of the key characteristics of a really good cultural study of a medium: It engages the dominant discourses about a medium without taking them at face value; it provides innovative descriptive material that allows other scholars to further reconceptualize the medium; it considers the past and present historical and institutional conjunctures shaping the medium; and finally, it considers the politics and the future of the medium without, again, taking available discourses on their own terms. Certainly, there are many issues missing from Williams’s account: the point is not that Williams covered every aspect of television (of course he couldn’t). Rather, the book’s significance is as a platform for critique. In this sense, *Television* was very much a success.

But cultural studies itself is quite different from what it was in the 1970s, and this has presented another obstacle, perhaps the primary obstacle, to a Williams-like synthesis of the Internet. *Television* operates in a largely realist mode of social criticism; it derives its analytical categories from fairly commonsense conceptual categories and operates on the premise that analytical and descriptive language has some correspondence with the object it describes. Although seminal in many ways, the book operationalizes the premise that one can take a single medium as the object of a full-length study, a premise that has increasingly come under serious attack from cultural studies writers. Regardless of what medium is being considered, its users (or subjects or audiences etc.) never exist solely in relation to that medium, whether it is film, television, music, or the Internet. Thus, a number of cultural studies writers have turned toward analyses of “everyday life” or complexes of mediated experiences or media phenomena to better understand the relationship of communication and subjectivities (e.g., Morley, 1992; Morris, 1990; Silverstone, 1990; Silverstone, Hirsch, & Morley, 1992). Those who remain in a realist mode of analysis tend toward more localized studies, along, interestingly enough, Hebdige’s “subculture” model even 20 years later. Other writers, such as David Morley and Roger Silverstone, also continue to have an impact in this area (even though they themselves have switched ethnographic orientations). In the context of Internet research, these localized cultural studies offer both on-line and off-line analyses, and often, their aim is to recover, describe, and analyze the distinctive features of subjective experience pertaining to the Internet or some cultural sphere related to the Internet.

**SUBJECTIVITY, TEXTUALITY, AND EXPERIENCE**

On-line analyses of Internet culture use a hybrid approach—often combining, in various degrees, ethnography, autobiography, and textual analysis. Often, their goal is to explain the workings of on-line culture in an ethnographic or discourse-analysis style. Many of these studies conclude by criticizing the on-line/off-line dichotomy that posits a split between the Internet and everything else. Although they offer this criticism, they do not develop it: Most subjectivity-oriented analyses of the Internet are founded on a dichotomy between on-line and off-line culture, in which on-line culture is mediated and off-line culture is not.

Michelle Tepper’s (1997) analysis of the use of humor as a policing mechanism on the Usenet newsgroup alt.folks.c岬urban argues both by textual criticism and by analogy. By using humorous errors of fact or spelling, regular participants on the Usenet group create an insider/outsider status that is then reinforced through the use of invitation-only mailing lists and in-group jokes. In this way, on-line participants create “community” through verbal and physical exclusion. Gareth Branwyn’s (1994) study of cybersex uses formal and informal interviews as well as his own experience with the practice. Branwyn’s study is largely descriptive, but the combination of methods is certainly a useful approach to understanding a particular on-line phenomenon.

Two more autobiographical accounts deal with rape and death on-line. Julian Dibbell’s (1994) widely reprinted “A Rape in Cyberspace: Or, How an Evil Clown, a Haitian Trickster Spirit, Two Wizards, and a Cast of Dozens Turned a Database Into a Society” deals with a rape scenario played out on LambdaMoo, a program designed to give its users a particularly vivid (text-based) impression of being somewhere. Although Dibbell was not present for the actual event, the article explores the stakes involved when people’s on-line personas could be made (without their consent) to play out another user’s sexual fantasies on-line. Similarly, Katie Argyle’s (1996) “Life After Death” explores her own reactions to the death of a regular participant on a listserv to which she belonged, whom she’d never met, although she’d gotten to know him through his posts. Both articles problematize the distinctions between “virtual” and “real” life but in the context of specific problems related to the experience of Internet users. The autobiographical aspect of
these descriptions helps to concretize the "virtual/real" split as more than just a conceptual problem but as a cultural and political issue as well. Even the on-line accounts specifically written to problematize the virtual/real split still seem to hold it up in terms of their own presentation of the topic. All of the aforementioned ethnographic studies spend most of their time analyzing events that happen on-line. Similarly, Aycoc and Buchignani's (1995) "The E-Mail Murders: Reflections on 'Dead' Letters" is a fascinating tale of some of Valery Fabrikant's on-line activities prior to his murdering four people and winding up a first at Concordia University in 1992. Yet there is very little discussion of Fabrikant's activities off-line except as they are represented on-line. The logical next step for on-line analyses is to further their critiques of the virtual/real split by themselves moving beyond a primary focus on on-line experience in isolation from other experiences, both inside and outside other media. Theoretically, on-line analyses could also deal with the structure of the Internet, its content, and/or the organization of on-line practices, but as of this writing, no such more developed cultural studies exist.

Off-line analyses do successfully consider relationships between Internet activity and other parts of participants' everyday lives but retain this focus on recovering and describing experience. The large number of essays dealing with cyberpunk fiction would be an example of formal, off-line analyses related to on-line environments (the Dery, 1994b, collection is especially heavy on cyberpunk essays). In general, however, I've found that analyses of cyberpunk have more to tell us about cyberpunk than about the Internet. Similarly, writings about "hacker culture" (e.g., Hafner, 1991) are another possible angle for off-line analyses but tend to be more journalistic in orientation, focusing on telling a story and making the character of the hacker familiar. In other words, they are more concerned with narrativizing and representing experience than offering a cultural and political analysis of experience.

EPISODIC STUDIES

Based on the influence of French writers such as Michel Foucault, Gilles Deleuze, and Felix Guattari, the success of poststructuralist feminism, and strains of American pragmatism, writers ranging from Meaghan Morris (1988) to Andrew Ross (1991a) have taken to a more episodic, anecdotal, and momentary approach to constructing their objects of study. Here, the Internet becomes one site among many in everyday life or a particular inflection of virtuality, cyberspace, or computer-mediated communication.

Writers taking this approach fall roughly into three camps. The first camp considers Internet communication as part of a larger problematic or cultural phenomenon. The second camp considers the metanarratives surrounding the Internet in other media—"discourses of the Internet." The third camp merges these two approaches in studying the Internet as part of a larger social and technical network.

Studies that consider the Internet as part of a larger problematic understand the Internet as one particular site among many to be studied as part of a cultural or political problem. Two examples of this approach will give a clearer sense of it. First, there are those scholars who approach the Internet as a subset of "technology" and who are particularly concerned with the role of "information technology" in the changing shape of work and leisure. For example, Aronowitz and DiFazio (Aronowitz, 1994, pp. 104-138; see also Aronowitz & DiFazio, 1994) argue that computer-aided design and manufacturing has aided in the integration of task at the General Electric engine plant in Cincinnati, shortening design time, eliminating jobs, and allowing closer interaction among management and employees. Aronowitz and DiFazio link the computerization of engineering and architecture to the de-skilling and loss of autonomy of the professional classes and shrinking of the job market: computer networking makes fewer workers necessary to serve the needs of the firm. Similarly, the contributors to the volume Resisting the Virtual Life (Brook & Boal, 1995; see also Bender & Druckery, 1994) critique information technology rather than the Internet per se, but the volume spans policy, agency, ideology, and alternatives to "virtual interactivity" through forays into policy, labor statistics, and even the aesthetics of screen savers. Here, the Internet is just part of a much larger complex of information technologies, industries, and ways of life.

Another approach to the Internet as part of a problematic is the rapidly growing area of body and technology studies among cultural studies scholars. Central to this area is Donna Haraway's landmark essay "A Manifesto for Cyborgs" (reprinted in Haraway, 1991; see also Haraway, 1997), an essay that offers an alternative to antitechnology positions in feminist and socialist theory through the figure of the cyborg, part organism and part machine. The interplay among bodies and machines has since become a central concern among feminist scholars. Anne Balsamo's exploration of technologies of the gendered body, for instance, covers feminist bodybuilding, public pregnancies, cosmetic surgery, and virtual reality (Balsamo, 1996). Liz Grosz's
(1992) "Bodies–Cities" argues that telecommunications and information networks are part of the transformation of the bodily experience of cities, resulting in a kind of technical interchangeability of bodily and computerized functions.

The second "episodic" approach to the Internet is mediascursive: It analyzes discourses of and about the Internet. Although this is a populous field, I will limit my discussion to four examples. Andrew Ross's (1991a) "Hacking Away at the Counterculture" was one of the earlier cultural studies analyses of computer culture. Ross's essay exemplifies the mediascursive approach because it demystifies apparently given social relations, connects ideological positions to social relationships, and offers an alternative way to think about the problem being examined. His goal was to "describe a wider set of activity and social location than is normally associated with the practice of hacking" (p. 132). Ross begins his essay with an analysis of the media panic surrounding hackers, viruses, and computer security, moving quickly from antihacker hysteria to the cultural management of hacking through worker sabotage, a critique of techno-utopian discourses that includes an analysis of workplace safety in semiconductor production plants, a critique of the "technoculture" approach that sees a seamless interlocking of public and private media technologies to produce a society of surveillance, and a discussion of the possibilities for critiques of technoculture. Ross's concluding argument still reads with urgency: He attacks technophilic and technophobic positions alike: Cultural studies requires technological literacy to have a solid critique of existing technological formations and present an effective alternative vision.

Similarly, Laura Miller (1995) and Joe Lockard (1997) both offer critiques of the electronic frontier mythos through the very effective use of a fairly conventional ideology critique approach. Miller is concerned about how women's experiences on-line were represented in popular news media such as Newsweek and the Village Voice. For instance, a May 1994 Newsweek article argued that cyberspace was an environment largely hostile to women. Miller (1995) connects this ideology of female fragility with the frontier mythos and the movement for further regulation of the Internet (pp. 52-53). Miller is explicitly critical of Julian Dibbell's (1994) article cited earlier, worrying that the sense of female fragility based on men being bigger than women shouldn't operate in the same way in on-line environments. Although this remains an open (and difficult) question, Miller critiques the frontier mythos as gendered while also criticizing the usual gender-based critiques of cyberspace. Instead of working with the given alternatives, she offers the possibility of a different social vision for women's roles on-line. No doubt, the Internet was originally a men's club and is still male-dominated in many places. The question then is how to best approach the problem from a feminist position. As Miller suggests, feminists should be wary of "frontier" language precisely because of how it casts the possibility of women's participation in Internet culture.

Joseph Lockard (1996) also considers frontier myths in his critique of technophilic discourse that ranges from the conservative roots of the desire for a new frontier to the "invisible pricetags" behind computing. The final section of his essay connects the desire for universal communications expansion and the rhetoric of identity-less virtual community with first world-third world relations, American cultural imperialism, and the white ideology of racelessness. In the absence of discussions of race in cyberspace re-instantiates a white ideology.

The [...] field of putatively null, anti-signified cyberspace is unmistakably signed with Euro-American whiteness. Race and ethnicity are simply not up for discussion in cyberspace social theory, and their very absence identifies unsubstantiated presumptions of community. The featurelessness of a presumptive non-raciality/ethnicity in cyberspace fails to correspond with the real and diverse communities around us. (p. 227)

The supposed racelessness of on-line culture thus is itself implicated in racial politics. Lockard, like Ross and Miller, takes a common issue in discourses surrounding the Internet and shows how different ideologies, practices, and technologies are articulated together to form what appears at first glance as a self-evident unity. All three critiques are expressly political, moving beyond a demonstration of the articulated ideologies and narratives to a political critique of social relationships.

Bolter and Grusin's (1996) "Remediation" uses the past to develop a mediascursive critique. Rather than casting web pages and hypertext as wholly new forms of mediation, they contextualize these supposedly "new" visual conventions within the long flow of media history. Using examples from painting, photography, sculpture, and design, they argue that there is a vivid tradition among some new forms of expression simultaneously claiming their ability to supersede previous representational forms in terms of an aesthetic of immediacy (i.e., the new medium is supposed to be somehow "less" mediated than the old medium) and, at the same time, a hybridization of content that reworks and refigures the old media within the new, resulting
in a multilayered textuality. The strength of Bolter and Grusin’s argument is that they subject their own formal analysis of dimensions of new media to a genealogical approach (following Foucault, 1977), looking for the roots of current media forms in past activities. As a result, they are able to construct a social and cultural account of new forms of expression that attends to their specificity without relying on millenial rhetoric, technological determinism, or claims of absolute newness. The “new” dimensions of hypertext and the hybridized Web site are thus shown to have deep cultural roots of their own.

Perhaps the most developed cultural studies work to date on the Internet is J. Macgregor Wise’s (1991) *Exploring Technology and Social Space*, despite its claims to be only partially about the Internet. It is also a good example of what is entailed in cultural studies’ decentering of realist objects in favor of considering the Internet as part of a larger social and technical network, the third approach I mentioned above. Wise really advances two arguments that become simultaneous by the end of the book (and hence the qualification about the book “not entirely” being about the Internet and new communications technologies). The first has to do with how we think about technology. He contrasts three paradigms: the modern, actor-network theory (what he calls an “amodern” approach to technology), and Deleuzean theory, ultimately arguing for the third as the best theoretical framework for considering technology at present. Modern thought tends toward two poles in the consideration of technology: (a) technological determinism, in which technologies shape human activity independent of human actors, and (b) instrumentalism, which ignores the constructedness of technology and simply casts it as a means to an end. This vacillation in modern thought itself is based on a subject/object split, with agency frequently situated on only one side of the divide. Wise sees the amodern approach, after Latour, as overcoming the modern episteme’s assumption of a subject/object dichotomy by theorizing both subjects and objects as possible agents in both “natural” and “social” elements of human life. But whereas actor-network theory is content to note the existence of agency, Deleuzean theory, he argues, reintroduces differential power relations into the analysis (pp. 58–59).

Wise shifts objects to mimic a progression he sees in the technology itself from the military-industrial complex, through large pedagogical institutions (he considers the communication technology exhibit in Chicago’s Museum of Science and Industry), and into policy discourse and popular culture. Along the way, he considers the public relations apparatus of AT&T, the images of technoculture presented in *Wired*, the political forces behind the National Information Infrastructure (NII), and the movement to expand the NII into a global information infrastructure.

Wise’s book uses mostly documentary forms of analysis, developing critiques through interposing description and analysis. He seeks to move beyond an ideology critique (in which discourse either “reprents” reality or fails in terms of that representation and functions as ideology) and make claims on social reality beyond the politics of representation. As a result, Wise focuses more on discourses about and around the Internet than on attempting a description of the Internet itself, although its ultimate goal is not simply a critique of the accuracy or inaccuracy of various representations. Wise’s book represents a move in the right direction for cultural studies of the Internet but also highlights some of the difficulty in describing something in unfamiliar terms: That is, if one reads the book for its Internet content, one must first read 80 pages of theoretical argument before reaching a discussion of the object of study in any depth.

### Doing Cultural Studies, Redoing the Internet

Given the existing work, the challenge facing cultural studies Internet scholarship is to retain its critique of realism while at the same time speaking to the real—refusing to concern itself exclusively with a politics of representation—and instead moving toward a more explicit and direct construction of its object. Insofar as cultural studies writing on the Internet retains its critique of realism, it also faces the problem of representing itself. Writing is a linear form, and although some writers such as Meaghan Morris (e.g., Morris, 1988) have developed rather avant-garde solutions to the problem of writing outside realist constraints, an effective style such as hers takes years of work to develop. Such writing can contribute to the intellectual depth of the project, but it also reduces the possible audience. Conversely, more plain prose-style approaches such as Wise’s take a great deal of time before the argument comes together for the reader.

Cultural studies’ critique of realism, and my support of it herein, would suggest that it is neither epistemologically sound nor politically desirable to just study “the Internet” in isolation from other cultural phenomena. Our fictional study, *The Internet*, might at this point no longer be a study of a medium itself but its place in everyday life. To argue that the Internet is an autonomous sphere of social action is simply untrue based on the evidence offered by other areas of media studies; “subjects of cyberspace” are also
subjects of television, telephony, radio, film, and music, as well as elevators, clothing, speech patterns, and food, not to mention the classic identity categories. That said, studies of subjectivity and cyberspace could possibly move toward a more Goffmanesque analysis that considers the “framing” of social activity and the performance of social roles independent of any subjective essence, but then this would no longer be a radical claim about how subjectivity is transformed through the Internet. Instead, it would simply be an acknowledgment of the role-playing that Goffman analyzed throughout his career (for two classic studies, see Goffman, 1963, 1974). Similar to Goffman’s, Judith Butler’s work on performativity in sexuality and gender practice may be of some use in conceptualizing the Internet and subjective processes (Butler, 1993, 1997) by highlighting that even constructed identities remain constructed only as far as they are repeatedly performed. Such analyses, however, require an acute awareness of context: To do otherwise is to abstract the Internet from the complex media environment of which it is a part.

Internet research in general needs to be further integrated with research on other, related phenomena. Cultural studies should apply its collective wisdom to the construction of the Internet as an object of research rather than continuing to abstract the Internet from the media environment of which it is a part.

1. Cultural studies has the pedagogical task of disentangling the Internet from its given millennial metanarratives of universality, revolutionary character, radical otherness from social life, and the frontier mythos. This task can be fulfilled both through documentary research and fairly traditional ideology critique (the newest, most fashionable methods are not always the best). Most important for this type of research is its pedagogical function: It especially needs to reach beyond traditional scholarly audiences, although cultural studies scholars should be challenging other academics who are furthering an ideological formation that essentially amounts to advertising for the Internet. Also, an important qualification for this research is that it cannot resort to the simple antitechnology/alienation narratives so prevalent in philosophical and cultural critiques of technology. In my opinion, this is where cultural studies work (especially of the metanarrative type discussed above) has been most successful and perhaps where it can have the widest impact. Cultural studies scholars in this area have the challenge of finding a third voice outside the technophilic/technophobic dichotomy and of finding effective sites both in the academy and outside to intervene.

2. Cultural studies scholars need to denaturalize and radically contextualize the Internet itself. This can be accomplished through a variety of means. My own work in this area thus far has been of a comparative and media historical perspective. A simple exercise: Identify a claim about the Internet. Then choose another medium, see if the claim was made in the past and if so, how and where it surfaced. How does the claim figure in the discursive history of that medium? For example, the figurative language of AT&T’s advertising campaign for universal telephone service (conducted from about 1910 through the 1920s) is very similar to more recent telecommunications advertising—mixing transportation and communication language to produce images such as “the information superhighway” that has been part of AT&T’s public relations campaigns for the entire century. Similarly, one can find homologous millennial claims for all modern telecommunications media: radio (Khillibikov, 1993), television (Denman, 1952; RCA, 1944), telegraphy (Czitrom, 1982), and some technologies we don’t usually think of as modern telecommunications media—the electric light (Marvin, 1988) and the postal system (John, 1995). Bolter and Grusin’s work (1996), discussed above, is also a fine example of this approach. In contrast to the mythology of electronic transformation, examples from media history suggest that as the Internet increases in importance and pervasiveness, it will simply become part of the mundane fabric of social and cultural life. Contrary to today’s millennial predictions, the Internet’s future and significance most likely lies in the domain of the banal.

Although there has been much analysis of representations of the Internet through other media, little has been written about other kinds of connections between the Internet and other media. Political economists and policy analysts have made much greater inroads in this area than cultural studies scholars (Herman & McChesney, 1997; Streeter, 1996). In addition to the important corporate connections between cable television, telephony, and the Internet, little has been written on the subject from a cultural point of view. For instance, as the World Wide Web expands, it becomes somatically more like cable television; although the visual and possibly cognitive content of the medium is different (and this would be an open question for psychological researchers), participation largely involves a user pointing and clicking a mouse to change screens. Services such as WebTV are in fact based on this presumed similarity; surfing the web and channel surfing share the same metaphor for a reason. Of course, this is just one example. The problems of presence/absence and real/virtual tend to get represented in a binary fashion: The Internet is virtual; the rest of the world is real. But notions ofphantasm,
absence, and unreality have plagued all "Western" forms of representation, both in technologically mediated and other expressive forms. Future cultural studies work should connect any discussion of virtuality to the larger problem of presence and absence that has surfaced in a wide range of contexts for hundreds of years; it is a central problem of media theory more generally (e.g., see classic writings by Anderson, 1983; Benjamin, 1968; Derrida, 1976; Warner, 1990).

Even in the spheres in which it is most significant, the Internet is only one of many technologies and media that its users encounter, and it may or may not be foremost among them in the subject's identity construction or the larger logics of subjectivity. Silverstone et al.'s (1992) turn toward the "moral economy of the household" is one such way of thinking about the subject effects (i.e., the effect of some practice that produces subjectivity) of multiple media. As more and more cultural studies scholars shift their primary object of study from "culture" to "everyday life" (as suggested in Morris, 1990), they will have to develop more approaches for talking about multiple media encountered in multiple environments.

3. Cultural studies scholars should treat the Internet and computer-mediated communication more like other media and technologies. Like other media, the Internet represents the play of a whole range of cultural forces. Its form and content change over time, and its social significance varies from context to context: The Internet is more important to some people than to others.

Yet like scholars in other fields, Internet scholars have a tendency to universalize their own subjective impressions and dispositions, thereby grossly overestimating the impact, magnitude, accessibility, and universality of their object of study. Basic claims about the Internet presented with the air of fact often do not withstand even superficial scrutiny. Many writers have made wildly exaggerated claims about ease of access to the medium, its relative importance to the shape of modern politics, the Internet as a public sphere, and the Internet's rate of growth. Mark Dery (1994c), for instance, claims that the "subcultural glimpses" of Internet discourse "offer a precognitive glimpse of the mainstream culture a few years from now, when ever-greater numbers of Americans will be part-time residents in virtual communities" (p. 6). Dery cites the astonishing figure that there is a 25% jump every 3 months in the number of computer networks hooked to the Internet (although the source he attributes does not cite a source for the statistic; it could well have been hearsay). Yet this simple claim is based on a wide range of faulty assumptions. It assumes that the Internet will continue to expand indefinitely at its present rate eventually achieving universal access (a feat not even accomplished by the present-day telephone). It assumes that as the Internet gets bigger, its content, form, and genres will remain the same. But no regular user of the Internet would support such a claim: Content changes drastically as size increases. Previously small newsgroups become huge and unmanageable; e-mail lists that used to put out 10 messages a day or in a week can suddenly spiral to more than 60 messages a day; advertising becomes more prevalent as companies scramble to find a way to make money on the Internet. The mechanics alone of dealing with a massive influx of new users can radically transform any on-line "community." As discussed above, as the World Wide Web grows, its cultural content—the character of its "interactivity"—changes.

Like other media, the Internet can also be considered a commodity. Silverstone et al. (1992) and writers such as Lynn Spigel (1992), John Hartley (1992), Liz Cohen (1990), and David Nasaw (1993), among others, all offer ways of examining the commodity status of communications technologies. All of these authors, however, stress that as commodities, media and technologies are bound up in differential power relationships and are endowed with different kinds of meanings depending on how they are situated. As exemplified by the stories of people getting e-mail addresses just for the prestige, Internet access is a sought-after service; it is very much a commodity. Similarly, making use of Internet access presumes access to and command of other commodities, such as computers, software, and phone lines.

In light of the Internet's commodity status, we should also ask other questions of Dery: His 25% jump doesn't account for who has and doesn't have Internet access. Although many corporate networks are hooked into the Internet at large, companies often limit the available Internet access for employees plugged into the corporate network. As Gilbert Rodman (1997) argues, statistics on how many people actually use the net need to be taken with a grain of salt:

The decentralized nature of the net makes census-taking difficult, the Net's rapid and continuing growth renders any data one collects on its overall size instantly outdated, and what actually counts as "using the net" varies fantastically from survey to survey. What numbers there are, however, suggest that barely 1% (if
that much) of the world and only 10-20% of the US are on-line in any capacity whatsoever.

In addition to considering those low numbers at least as seriously as the "25%" quoted by Dery and others, we have to consider what "being on-line" means. Claims about the "ease" of appearing on-line also should be carefully scrutinized. Rob Shields (1996b) asserts that "the required equipment is now available in North America at under $100 on the second hand market" and that "the very simplest PC equipped with the slowest of modems can perform adequately for the average typist" (p. 2). Although it is true that used computers are cheap, compatibility and applications are severely limited. An old machine would work only for basic e-mail, gopher servers (which are widely being replaced by graphics and therefore memory-intensive web sites), and some Netnews and on-line database functions. Thus, as Joseph Lockard (1997) argues, "An ideology of computing cheapness . . . , along with its suggestion that a fully-accessible and democratic cyberculture is achievable in the not-too-distant future, is simply another social Ponzi scheme" (p. 221). Ironically, the more advanced a computer user, the more likely an old system will be of use. Inexperienced computer users are much more likely to require more advanced systems for access to on-line services (for one thing, hardware and software support for older systems is virtually nonexistent).

Similarly, Steven Jones claims in his introduction to CyberSociety that "unlike many other analyses and studies of contemporary society, one may enter the communities and discourse described in these chapters with relative ease" (Jones, 1995b, p. 3). "Relative ease" is a tricky term here, because in addition to the practical matter of access, we must remember that the proliferation of computer software has popularized the term learning curve; learning new software can take a lot of time, especially for the casual computer user. For the novice user, technical support for newer packages is relatively poor and expensive, and quickly goes out of existence for older packages. Of course, Jones was addressing his readers, largely a college- and university-based audience who would likely have more access to "free" facilities and more extensive technical support than other populations. But the general ease and availability of Internet access is itself an issue open for discussion rather than being a closed case. As Lockard (1997) writes, Proclamations of accessibility thus rest on erroneous assumptions about the economic and social foundations of Internet access. Computers, access to networks, and software literacy are themselves embedded in material and symbolic economies that require careful critical attention.

4. Finally, someone should write a cultural studies book titled The Internet in the style of Raymond Williams's (1973) Television, or perhaps some other seminal cultural studies work. Such a study would give a historical overview of the Internet from a more sociological, rather than an anecdotal, perspective. It could cover a range of domains both on-line (e-mail, Netnews, the World Wide Web, etc.), and off-line (home, office, library . . . ). It could cover the industry, policy, content, and user practices. It could offer a theory of power dynamics on and around the Internet. In short, it would offer an effective critique of existing discourses around the medium, present some effective tools for thinking about it, and even provide a cogent discussion of its future. Such a task could be undertaken by an individual whose research program has already provided a solid foundation for this kind of study, or it could be undertaken collectively by a group of scholars committed to working together and sharing a common understanding of the problem at hand. Given the current intellectual climate of cultural studies, there is no doubt that such a study would come under fire from many directions. But even as people leveled the criticisms, they would be reading the book, would look to it (or against it) for new research directions, reconsider and recontextualize its assertions and constructions, and retrace its steps to follow a different path. In short, it would wind up being a lot like any other seminal work in an academic field: effective, controversial, and of course flawed. Regardless of whether the goals of such a massive effort are truly attainable, the effort itself is often worth reading.

I have said very little about the mechanics of constructing an Internet study, and now this chapter is about to end. My reasoning is simple: Because cultural studies is committed to a willful and considered eclecticism of method, once you determine your method, you should learn it from experts in the area. In principle, hermeneutics, "pure theory," historiography, ethnography, and quantitative analysis are all possible "methods," among others, for doing a cultural study. If you're doing ethnography, talk with
ethnographers; if you’re doing history, talk with historians; if you’re doing textual analysis, talk with literary critics, art historians, musicologists; and so forth. More than likely, if your research goes beyond a single essay, you’ll be using multiple methods. All the better. Talk with more people, and read more methodologies (if you find that helps). Cultural studies has even begun producing its own methodologies (DuGay, 1997), although as I have tried to show here, a methodological treatise is more or less antithetical to the work of cultural studies.

Instead, I have offered some directions for the conceptualization of the Internet: It is both a productive cultural site and an artifact and element of social relationships. By attending to the construction of the object, researchers in cultural studies and other fields will be presented with a wider range of political and intellectual options throughout their research work. Clearly, the challenge is to move beyond the commonplaces of Internet discourse. Cultural studies’ usefulness to Internet research should thus be measured by the degree to which it can get its readers to think beyond the technophilic-technophobic dichotomy, beyond the rhetoric of millennial transformation. Only by treating the Internet as one site among many in the flow of economics, ideology, everyday life, and experience can Internet research become a vital intellectual and political component of media and cultural studies. Only by recognizing the Internet’s banality can Internet research move beyond the clichés of the millennial imagination.

Notes

1. That said, many other fields have struggles over the definition of central terms and prevailing notions of their objects; in this respect, cultural studies is not alone.
2. I should add that the definitions of the field are themselves heavily contested. As in most of the human sciences, there are widely divergent notions of what constitutes a “cultural study” and the purposes of the scholarship in general. For the purposes of this chapter, I will offer a heuristic definition of cultural studies as an orientation toward scholarship with four distinctive features but will not confine myself to discussing texts that rigidly fit my definition of cultural studies.
3. Of course, cultural studies has developed these moves in its own ways, but it did not invent them. On the contrary, the use of the autobiographical voice is a direct descendent of academic feminism and more recently the “reflexive turn” in anthropology; “the detour through theory” is a variation on Marx’s approach to social research, and the critique of subject-object relations (i.e., the objective scholar removed from the object of study) is a product of a wide range of critiques of enlightenment-style empiricism and Kantianism.

4. The statement of its politics in the negative is useful here because the question of what is to be done remains an open issue for most cultural studies scholars. In fact, this is the point of doing the research: If you already know the political answers beforehand, why do the study?
5. This is not to argue for a voluntarist theory of articulation. That, for instance, discourses of “the frontier” are articulated to the Internet does not mean that it will necessarily be easy to disarticulate those metaphors from people’s notions of the Internet. Articulations are held together by powerful social, economic, and ideological forces.
6. Carol Stabile’s (1994) remains the most solid critique of Haraway to date and casts serious doubt on the political viability of technophilic feminism.
8. This is not to suggest that representation is an unimportant political issue; only that the politics of representation is one only possible model of political action.
9. Although their excessive emphasis on the agency of consumption obscures other kinds of economic relations.
10. This is also a location/biographical issue: Cultural producers tend to universalize their own experience, which is then confirmed by other cultural producers doing the same thing in the media they encounter. Thus, for instance, the “radio boom” of the 1920s was largely an artifact of media “snowballing” one another; coverage of radio bred more coverage of radio, and pretty soon, the phenomenon was “sweeping the nation,” although radio had been widely available as a technology prior to the “boom” (see Douglas, 1987). One can find a similar “boom” in the 1990s as more and more journalists went on-line.
11. My own experience might be an instructive example here: Until 1993, I used a 1984 Leading Edge model “D” PC (bought new in 1984) for all of my computing and Internet needs. I finally had to stop using the computer when I discovered that newer versions of DOS and many DOS-based programs were no longer compatible with my machine. I then gave in to the prevailing market and bought the best computer I could afford so that I could postpone my next upgrade as long as possible. Since 1993, I have already found it necessary to upgrade the hard drive and the modem for basic everyday uses. I have also found that my RAM memory (8 megabytes was considered generous in 1993) is no longer sufficient for even my word-processing applications. Although the old Leading Edge is still usable as a stand-alone computer, the Leading Edge is no longer of any value for connecting with other computers.
12. Although computing facilities are often available for free to faculty, students’ fees are usually required to support campus computing facilities—one reason that alumni have to pay to keep their university accounts.
13. Williams’s predictions at the end of Television remain a rare example of cultural studies futurology. As Andrew Ross notes (1991b, pp. 168-171; echoed by Wise, 1997), the Left has largely ceded the practice of futurology to the Right. If the Left is to have any meaningful social vision, it must include images of the future.
14. Statistical analysis is more or less nonexistent in current cultural studies work, but as Justin Lewis (1997) has persuasively argued, it is no less valid a method when reflexively applied than any other qualitative approach to cultural studies.
15. As anyone who’s done research knows, the difficult questions of method are most often encountered in the process of doing the research, as opposed to methodological expositions (such as this one).
References


