Exploring Technoculture

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I. Introduction to Technoculture

Cyberspace, hyperspace, virtual space. Virtual communities, virtual realities, virtual identities. Cyborgs, cybernetics, science fiction. Spectacles, simulations, simulacra. Postcertainties and postmodernity. Welcome to Technoculture.

The following annotated bibliography is just a small taste of the world of technoculture. It begins by introducing the subject -- its rosy potentials, its grim possibilities, and the countless sites under contestation. Next, it explores the vital role varying modes of communication play in such a condition. It continues by analyzing the changing forms of culture, cultural expression, and social organization offered by what some critics call our "Age of Information". The last section examines the nature of pedagogy in an age of bits.

A. Shiny, Happy Bits

William J. Mitchell,*City of Bits: Space, Place, and the Infobahn* (Cambridge, MA: MIT Press, 1995) and Nicholas Negroponte,*Being Digital* (New York: Alfred A. Knopf, 1995).

> William Mitchell and Nicholas Negroponte have seen the future and, dammit, they like it. As Dean of Architecture at MIT and director of MIT's Media Lab, Mitchell and Negroponte have seen their share of what's to come. Accordingly, the two books are less concerned with today's technology than with that of tomorrow.
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> Mitchell's major questions concern the city of tomorrow. As he notes : "In a world of ubiquitous computation and telecommunication, electronically augmented bodies, post infobahn architecture, and big-time bit business, the very idea of the city is challenged and must eventually be reconceived" (107). Unfortunately, Mitchell never gets around to any reconceptualizations. Instead, he offers countless polar opposites -- spatial/antispatial, corporeal/incorporeal, narrowband/broadband, etc -- only to walk away from them unexamined. Apparently uninterested in the gray areas, Mitchell leaves his readers with black or white, either/or scenarios.
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> While Mitchell is concerned with the city of tomorrow, Negroponte is interested in the being of tomorrow. Closely resembling AT&T's "You Will" commercials, *Being Digital* is a collection of the rosy predictions Negroponte offers us in his monthly *Wired* magazine essays. Although he succeeds in explaining the profound impact digital technology has had, is having, and will have on society, his analysis proves politically barren, replacing economic analysis with anecdotes of what's to come.

B. What's at Stake ?

James Brook and Iain A. Boal, editors,*Resisting the Virtual Life: The Culture and Politics of Information* (San Francisco: City Lights, 1995).

Like *Technoculture* (see below), this book transcends the limited debate between Neo-Luddites and techno-Utopians. Yet while the former serves as an intervention-is-necessary manifesto, the latter is more of a how-to guidebook. Thus, while many contributions critique the so-called Information Age, others provide measured, yet pragmatic strategies for intervention. Essays of particular interest include Laura Miller's critique of the Net as frontier discourse in "Women and Children First: Gender and the Settling of the Electronic Frontier", Howard Besser's sharp criticism of the current direction of the Net in "From Internet to Information Superhighway", and Richard E. Sclove's contribution, "Making Technology Democratic".

James W. Carey with John J. Quirk, "The Mythos of the Electronic Revolution", in*Communication as Culture: Essays on Media and Society* (Boston: Unwin Hyman, 1989).

This essay serves as a useful grounding device for even the most enthusiastic technophile. Carey traces the historical presence of what he calls a "futurist ethos", an American phenomenon which "identifies electricity and electrical power, electronics and cybernetics, computers and information with a new birth of community, decentralization, ecological balance, and social harmony" (114). In this light, the notion of the technological sublime translates into false consciousness (a process which incidentally weds two Marxs -- Leo and Karl).

Richard Ohmann, "Literacy, Technology, and Monopoly Capital", in*College English*, November 1985.

In this rich and thought-provoking essay, Ohmann laments the fact that too often technological determinists fail (or merely forget) to examine technologies as complex social processes. He notes : "technology, one might say, is itself a social process, saturated with the power relations around it, continually reshaped according to some people's intentions" (681). Ohmann continues by speculating how the outcome of various technologies would be drastically altered if they had been developed and implemented by different cultural groups. Like *Technoculture* (see below), Ohmann's essay encourages us to examine technologies within the cultural negotiations surrounding them.

Constance Penley and Andrew Ross,*Technoculture* (Minneapolis: University of Minnesota Press, 1991).

Published in 1991, this collection of essays represents one of the first critical examinations of technology from a Cultural Studies perspective. As editors Constance Penley and Andrew Ross note in the introduction : "Wary, on the one hand, of the disempowering habit of demonizing technology as a satanic mill of domination, and weary, on the other, of postmodernist celebrations of the technological sublime, we selected contributors whose critical knowledge might help to provide a realistic assessment of the politics -- the dangers and the possibilities -- that are currently at stake in those cultural practices touched by advanced technology" (xii).

The diverse collection covers both existing technologies and the cultural and economic politics

surrounding them. Some of the stronger essays include Ross's essay on the politics of computer hacking, Penley's analysis of Star Trek "slashers", and Houston Baker's essay on the technological underpinnings of rap. Donna Haraway (see below) fans will especially enjoy Penley and Ross's amusing and incisive interview with the "Queen of Cyborgs", along with Haraway's brief postscript entitled "The Actors are Cyborg, Nature is Coyote, and the Geography is Elsewhere".

II. Communication and Culture

One critical element of technoculture is the importance of modern, new, and emerging communication technologies. Bordering dangerously close to technological determinism, technoculture theorists often attempt to explain contemporary culture in terms of communication systems or what Mark Poster calls "modes of information". This section outlines significant works regarding the relationship between mass media and American society, from the introduction of the telegraph to the impact of the computer.

Jean Baudrillard, "The Ecstasy of Communication", in*The Anti-Aesthetic: Essays on Postmodern Culture*, edited by Hal Foster (Seattle: Bay Press, 1983).

In many ways, Baudrillard serves as the ultimate technoculture theorist, encapsulating at once the sense of wonder and dread, possibility and futility. In this sharp, concise essay, Baudrillard draws heavily from Guy Debord (see below) and weds the concept of simulation to that of multiphrenia, noting that "what used to be lived out on earth as metaphor, as mental or metaphorical scene, is henceforth projected into reality, without any metaphor at all, into an absolute space which is also that of simulation" (128). Especially interesting is Baudrillard's reduction of society to a technological interface : "our own body and the whole surrounding universe become a control screen" (127).

James W. Carey,*Communication as Culture: Essays on Media and Society* (Boston: Unwin Hyman, 1989).

In this seminal book, Carey attempts nothing less than to recast the project of communication studies. Part I weds the fields of cultural studies and communication studies by redefining communication. Drawing from the work of John Dewey and Raymond Williams, Carey argues for the need to separate communication into two views -- the transmission view and the ritual view -- thereby reinterpreting communication to include both imparting/sending ideas and sharing/participating with ideas.

Having laid down a firm theoretical foundation, Carey uses Part II to examine the roles (both real and mythic) played by communication technologies in American society. Especially strong essays include "The Mythos of the Electronic Revolution" (see above) and "Technology and Ideology: The Case of the Telegraph".

Daniel J. Czitrom,*Media and the American Mind: From Morse to McLuhan* (Chapel Hill: University of North Carolina Press, 1982).

This book serves as a perfect history of communication technologies primer. Part I, entitled

"Contemporary Reactions to Three New Media", traces popular anticipations and reactions to the telegraph, motion pictures, and the radio. (Czitrom's chapter on the radio will be of special interest to Internet scholars, for both technologies were ushered in upon a carpet of utopian rhetoric.) Part II, "Theorists of Modern Communication", examines three major media schools of thought : John Dewey and the "Chicago School", Paul Lazarsfeld and the rise of communication studies, and finally, Harold Innis and Marshall McLuhan (see below).

Kenneth J. Gergen,*The Saturated Self: Dilemmas of Identity in Contemporary Life* (New York: Basic Books, 1991).

As a professor of Psychology, Gergen approaches technoculture by examining what it means to our daily interactions, rituals, and relationships. Gergen asserts that "through an array of newly emerging technologies the world of relationships becomes increasingly saturated. We engage in greater numbers of relationships, in a greater variety of forms, and with greater intensities than ever before. With the multiplication of relationships also comes a transformation in the social capacities of the individual" (79). Although a bit too anecdotal, the book's strength -- especially evident in the chapters "Social Saturation and the Populated Self" and "Truth in Trouble" -- is found in its truly interdisciplinary scholarship.

Marshall McLuhan,*Understanding Media: The Extensions of Man* (New York: McGraw-Hill, 1964).

What would a technoculture reading list be without a dose of McLuhan? Bombastic, rhetorical, and all over the place, Understanding Media is both dangerously obsolete and fascinatingly relevant. What proves especially critical to students of technoculture is McLuhan's then-radical assertion that "the medium is the message". Unwilling to apply dated models to up-to-date technologies, McLuhan's work encourages us to reflect upon the frameworks through which we explore technology.

Joshua Meyrowitz,*No Sense of Place: The Impact of Electronic Media on Social Behavior* (New York: Oxford University Press, 1985).

This book explores in depth the impact of television on American culture. Drawing heavily from Marshall McLuhan (see above) and noted sociologist Erving Goffman, Meyrowitz argues that television has altered profoundly our sense of self and place. The book is divided into four major sections. The first two -- "Media as Change Mechanisms" and "From Print Situations to Electronic Situations" -- describe what the author calls "media environments" and traces the merging, or blurring, of traditional spheres. Part three, "The New Social Landscape", explores the repercussions and subsequent conditions of such merges. Finally, part four, "Three Dimensions of Social Change", analyzes the sociological dimensions of this shift, tracing the merging of masculine and feminine roles, the blurring of childhood and adulthood, and the "new politics".

Mark Poster,*The Second Media Age* (Cambridge, MA: Polity Press, 1995).

Poster's thesis is bold and clear -- we are currently experiencing a profound paradigm shift in the field of communications. He notes : "with the incipient introduction of the information superhighway' and the integration of satellite technology with television, computers and telephone, an alternative to the broadcast model, with its severe technical constraints, will very likely enable a system of multiple producers/distributors/consumers, an entirely new configuration of communication relations in which the boundaries between those terms collapse" (3). In Part I, "Theoretical Considerations", Poster explores this "new configuration" against the backdrop of various theoretical frameworks, including critical theory, multiculturalism, and postmodernism. Chapter 1, "Social Theory and the New Media", proves especially interesting, with Poster lining Adorno up against Benjamin, allowing Baudrillard (see above) to flutter in between the two. In Part II, Poster tests his theoretical framework on media spectacles, include two films, an opera, and media coverage of the Persion Gulf War.

III. Being Digital, Cyberspace, and Other Assorted Virtuosities

The rituals, practices, and social organization surrounding technoculture are diverse, fascinating, and frightening. As seen in the fiction/nonfiction of William Gibson (see below) and the contemporary/futuristic theories of Jean Baudrillard (see below), one theme informing this field is the breakdown between "real" and simulation. At the same time, as found in the work of Donna Haraway (see below), another common theme involves the marriage between machine and human, cybernetics and organisms. In a word, the cyborg.

Michael Benedikt, editor,*Cyberspace: First Steps* (Cambridge, MA: MIT Press, 1991).

Published originally in 1991, this book is the first academic anthology devoted exclusively to cyberspace, its potentials, and limitations. And it shows. Many of the contributions are comprised of high-fallutin theorists struggling (often in vain) to apply even higher-fallutin theories to this newly-emerging subject. What does work however is its interdisciplinarity -- a fusion of work from various fields including philosophy, literature, architecture, postmodern theory, computer engineering, and interface design.

In "The Erotic Ontology of Cyberspace", Michael Heim uses William Gibson's *Neuromancer* (see below) to address critically the philosophical foundations of cyberspace. Editor Michael Benedikt offers a thought-provoking introduction tracing the ways in which we have and can think about cyberspace. Finally, Allucquere Rosanne Stone is everywhere in her fascinating essay entitled "Will the Real Body Please Stand Up ? : Boundary Stories about Virtual Cultures". Basically a concise, cliff noted version of her 1995 book, *The War of Desire and Technology at the Close of the Mechanical Age*, this essay focuses largely on virtual communities, virtual borders, and virtual identities.

Guy Debord,*Society of the Spectacle* (Detroit: Black and Red, 1983).

Cryptic, poetic, and at times playful, Debord's ideas concerning the role of the spectacle are pivotal to both techoculture and technoculture theorists. Countless cultural critics, including Baudrillard (see above), Daniel Boorstin, and Neil Postman, draw heavily from Debord's notions of the

spectacle, the alienation it engenders, and the utter lack of agency we have to fight it. What proves especially relevant to students of technoculture is Debord's argument that boundaries between the spectacle and the "real" no longer exist : "Lived reality is materially invaded by the contemplation of the spectacle while simultaneously absorbing the spectacular order, giving it positive cohesiveness. Objective reality is present on both sides" (thesis 8).

William Gibson,*Neuromancer* (New York: Ace Books, 1984).

Any healthy foray into technoculture will eventually include Gibson's 1984 science fiction masterpiece, *Neuromancer*. Not only is the book responsible for beginning a literary genre -- cyberpunk -- it also coined the term cyberspace : "Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators...A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data" (51).

Donna Haraway, "A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s", *Socialist Review*, 1985, 80:65-107.

In her seminal essay, Haraway theorizes a new life form -- part cybernetic, part organism, the cyborg. Accompanying the cyborg is a breakdown in many traditional opposites, thoroughly disrupting our cultural value and meaning systems. As she notes : "Late twentieth-century machines have made thoroughly ambiguous the difference between natural and artificial, mind and body, self-developing and externally designed, and many other distinctions that used to apply to organisms and machines. Our machines are disturbingly lively, and we ourselves frighteningly inert" (152). Haraway's brilliance is found in her ability to fuse science, science fiction, and cultural theory, leaving the reader completely unsure as to where to draw the boundaries.

Steven G. Jones, editor,*CyberSociety: Computer-Mediated Communication and Community* (Thousand Oaks: Sage Publications, 1995).

In some ways, *CyberSociety* serves as the sequel to *Cyberspace: First Steps* (see above). If the latter is a theoretical foreAcast, the former is a grounded evaluation. Most of the included essays examine various aspects of virtual communities -- communities based not on geographic proximity but rather upon common interests -- along with emerging methodologies and strategies with which to approach them. Particularly strong essays include editor Steven Jones' "Understanding Community in the Information Age", Nancy Baym's "The Emergence of Community in Computer-Mediated Communication", and Elizabeth Reid's "Virtual Worlds: Culture and Imagination".

Howard Rheingold,*The Virtual Community: Homesteading on the Electronic Frontier* (Reading, MA: Addison-Wesley Publishing Co., 1993).

Published in 1993, Rheingold's book marks the first book-length treatment of virtual communities. Overly anecdotal, much of the book traces Rheingold's many experiences in San Francisco's Whole

Earth Lectronic Link, or WELL, providing countless examples of how virtual communities can be based on common interest, not geographic proximity. Although primarily concerned with on-line political and social organization, the author also explores the history of the Internet, the Net in Japan, and MUDs.

Although Rheingold concludes the book with a note of warning, it comes as an afterthought. To the author, virtual communities represent human agency at its finest -- an example of the people transforming a Cold War technology into a tool of democracy. While certainly a valid interpretation, it is one which requires a deeper analysis than Rheingold provides. An excellent primer, yet far from the final word.

Douglas Rushkoff,*Media Virus: Hidden Agendas in Popular Culture* (New York: Ballantine Books, 1994).

Under-documented and over-enthusiastic, Rushkoff's *Media Virus* resembles the work of John Fiske -- in other words, resistance is everywhere. Still, Rushkoff's WELL associations and ear-to-the-street approach combine to produce an interesting and informed read. After a brief introduction and discussion of terms, Rushkoff explores radical ideologies in mainstream media, discovering homosexual discourses in "Ren and Stimpy" and postmodern narratives in MTV. Next, he examines "underground" media, analyzing alternative media "assaults" such as those produced and performed by Paper Tiger and ACT-UP. The book's major weakness is Rushkoff's chapter on the Net, a combination of out-of-control utopian rhetoric and under documentation.

IV. Pedagogy in an Age of Bits

One of the most discussed and theorized facets of technoculture is the profound repercussions it has on the academy, both with respect to pedagogy and epistemology. The focus of these discussions has been on hypertext. According to scholars such as George Landow (see below), hypertext has the potential to transform radically the way we learn and teach. The following section examines this radical transformation.

J. David Bolter,*Writing Space : The Computer, Hypertext, and the History of Writing* (Hillsdale, N.J.: L. Erlbaum Associates, 1991).

Like George Landow (see below), Bolter argues that the computer makes possible an entirely new form of writing. According to the author, hypertext has the potential to alter the technology of writing as profoundly as the printing press. Thought-provoking, yet at times repetitive, this book explores this new form of writing, or electronic writing, along with the space upon which it occurs. Such an approach allows Bolter to examine in depth interactive fictions such as Michael Joyce's (see below) "Afternoon", various elements of interface design, and the countless connections between hypertext and contemporary literary theory.

George P. Landow,*Hypertext: The Convergence of Contemporary Critical Theory and Technology* (Baltimore: John Hopkins University Press, 1992) and*Hypertext in Hypertext* (Baltimore, John Hopkins University Press, 1993).

In his 1992 book, *Hypertext*, George Landow describes how hypertext profoundly affects traditional notions of reading, writing, and textuality. Benefiting from his position as a professor of English and art history and a designer of hypertext systems, Landow discusses the ways in which many elements of contemporary critical theory -- multivocality, intertextuality, de-centered narration -- are embodied in hypertext. Further, he argues that hypertext makes possible radical reconfigurations theorized by such scholars as Jacques Derrida and Roland Barthes.

Although well argued and fascinating, *Hypertext* suffers from its "book-ness". Like an art book without paintings or a geography book without maps, the book lacks the appropriate medium to demonstrate its claims. Fortunately, Landow released *Hypertext in Hypertext*, an appropriately titled electronic version of the original book. As with an illuminating laboratory experiment, the double disk application provides users with hands-on experience, and transforms explanations of hypertext into demonstrations of hypertext.

One shortcoming results from the selected hypertext environment, *DynaText*. While effective, fast, and convenient, the system is a compiled presentation and allows extremely limited annotations by its users. Further, it is a stand-alone system. This means that the changes users input on one copy will not appear on those copies read by others. Although such constraints have little affect on the smoothness of the application, they contradict Landow's claims that hypertext allows readers to become writers.

George P. Landow, editor,*Hyper/Text/Theory* (Baltimore: John Hopkins University Press, 1994).

In this book, editor George Landow has assembled an impressive list of contributors to explore the many ramifications of hypertext on various fields of study. "What's a Critic to Do ?" is both the title of Landow's introductory essay and the over-arching theme which informs the book's three sections : "Nonlinearity", "The Politics of Hypertext", and "The New Writing". Articles which especially represent each of these sections include J. Yellowlees Douglas' essay on hypertext literature's lack of closure ("How Do I Stop This Thing?': Closure and Indeterminacy in Interactive Narratives"), Charles Ess' challenge to the utopian rhetoric surrounding hypertext ("The Political Computer: Hypertext, Democracy, and Habermas"), and finally, David Kolb's provocative exploration into the ways in which the field of philosophy can benefit from hypertext ("Socrates in the Labyrinth").

Jerome McGann, "The Rationale of HyperText" and "Radiant Textuality"

Short, concise, and provocative, these two essays adequately sum up much of the discussion surrounding hypertext and pedagogy. In "The Rationale of HyperText", McGann presents a convincing list of hypertext virtues, including the ability to transmit an array of media, to decenter the text, and to present texts as open archives rather than complete editions. McGann concludes his essay by discussing hypertext's tendency "to disperse attention as broadly as possible", a feature especially useful to those committed to interdisciplinary approaches.

In "Radiant Textuality", McGann essentially addresses the question raised by Landow (see above) in *Hyper/Text/Theory* : in an age of hypertext, what's a critic to do ? His answer is three-fold : 1) digitize existing paper-based archives, 2) move our work into electronic venues that enhance what

we do, and 3) begin experimenting with the opportunities engendered by hypertext. To which I will add a fourth direction : extend these experiments into the classroom.

Ben Shneiderman, "Education by Engagement and Construction: A Strategic Education Initiative for a Multimedia Renewal of American Education", in*Sociomedia: Multimedia, Hypermedia, and the Social Construction of Media*, edited by Edward Barrett (Cambridge, MA: MIT Press, 1992) and Michael Joyce, "Siren Shapes", in*Of Two Minds: Hypertext Pedagogy and Poetics* (Ann Arbor: University of Michigan Press, 1995).

I lump these two works together because they essentially contain the same argument. Shneiderman and Joyce argue that the key to hypertext pedagogy is to allow students to explore and construct hypertexts. Both authors stress the need for students to hypertext-surf -- Shneiderman's concept of engagement and Joyce's idea of the exploratory hypertext -- in order to engage with other students's/scholars's ideas. Yet this component must be coupled by students constructing hypertexts, allowing them to assemble their own narratives of knowledge and organize their own positions and paradigms.