

New Technologies, TechnoCities, and the Prospects for Democratization

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"Human beings make their own history, but not under circumstances of their own choosing." Karl Marx

"They who control the Microscopic, control the World."
Thomas Pynchon

The current explosion of new technologies and furious debates over their substance, trajectory, and effects poses two major challenges to critical social theory and a radical democratic politics: first, how to theorize the dramatic changes in every aspect of life that the new technologies are producing; and, secondly, how to utilize the new technologies to promote progressive social change to create a more egalitarian and democratic society in an era marked by rampant technological development and the seeming victory of market capitalism over its historical opponents.

In this article, I first want to suggest some ways to theorize the current technological revolution without falling into either technological or economic determinism, as well as unwarranted optimism or pessimism. I will argue that one needs to theorize the spread of new technologies and series of transformations that we are undergoing: 1) in the context of the current stage of capitalist development, as a crucial part of the global restructuring of capitalism, and thus to think together the current development and imbrication of technology and capitalism; and 2) as embodying a set of human artifacts and practices, as well as institutional restructuring. In carrying out this hermeneutical process, one needs to avoid the extremes of either exaggerating or downplaying the autonomous role of technology in this process, as if technology were either *the* demiurge of the contemporary world, or an unimportant epiphenomenon of a much greater force, such as capitalism or human self-development. In addition, one must avoid two extremes which would either denigrate and demonize technology in the mode of technophobia, or celebrate and deify it in the mode of technophilia. Instead, a critical theory of technology attempts to develop a dialectical optic that avoids one-sided approaches in theorizing and evaluating the genesis of the new technologies and their often contradictory effects.

I also want to develop democratic and activist perspectives on the new technologies, suggesting some ways that they might be used for such things as self-valorization and empowerment, democratization, and progressive social transformation, as well as strengthening the forces of corporate and state domination. Yet I do not want to fall into the utopianism of the boosters of new technologies, nor the pessimism and defeatism of those who merely see new technologies as an instrument of capital and the state. Finally, I will take on the ideology of the global city and virtual community and will argue that both promoters and critics of these concepts are failing to adequately conceptualize the social and cultural effects of the new technologies which have more to do with the development of new social and cultural spaces and perhaps a new public sphere, and not a new virtual city or community.

For a Critical Theory of Technology

In studying the exploding array of discourses which characterize the new technologies, I am rather bemused by the extent to whether they expose either a technophilic discourse which presents new technologies as our salvation, that will solve all our problems, or they embody a technophobic discourse that sees technology as our damnation, demonizing it as the major source of all our problems. It appears that similarly one-sided and contrasting discourses greeted the introduction of other new technologies this century, often hysterically. To some extent, this was historically the case with film, radio, TV, and now computers. Film, for instance, was celebrated by early theorists as providing new documentary depiction of reality, even redemption of reality, a new art form, new modes of mass education and entertainment -- as well as demonized for promoting sexual promiscuity, juvenile delinquency and crime, violence, and copious other forms of immorality. Its demonization led in the United States to a Production Code that rigorously regulated the content of Hollywood film from 1934 until the 1950s and 1960s -- no open mouthed kissing was permitted, crime could not pay, drug use or attacks on religion could not be portrayed, and a censorship office rigorously surveyed all films to make sure that no subversive or illicit content emerged (Kellner 1997).

Similar extreme hopes and fears were projected onto radio, television, and now computers. It appears whenever there are new technologies, people project all sorts of fantasies, fears, hopes, and dreams onto them, and I believe that this is now happening with computers and new multimedia technologies. It is indeed striking that if one looks at the literature on new technologies -- and especially computers -- it is either highly celebratory and technophilic, or sharply derogatory and technophobic. For technophilia, one can open any issue of *Wired*, or popular magazines like *Newsweek*, one can read Bill Gates' book *The Road Ahead* (1995), or some of the academic boosters of new technologies like Nichols Negroponte, Sandy Stone, or Sherry Turkle. These folks are sometimes referred to as digerati: intellectuals who boost new technologies and they also include Alvin Toffler, George Gilder, David Gelernter, (incidentally, one of the Unabomber's victims), and countless wannabees who write for the media, specialist journals, and other publications who want to get on the digital bandwagon and extract whatever joys and cultural capital it will yield.

Technophilic politicians include Al Gore and Newt Gingrich in the United States and Tony Blair and his New Labor cohorts in England. These boosters of the information society promise more jobs, new economic opportunities, better education, a bountiful harvest of information and entertainment, and new prosperity in a computopia that would make Adam Smith proud. With powerful economic interests behind the new technologies, one expects the technological revolution to be hyped. And obviously there is also academic capital to be gained through promoting new technologies, so it is not surprising that our colleagues too are promoting these technologies, often in an uncritical fashion. What is perhaps more surprising, however, than the promotion of the new technologies is the extent of wholly negative discourses on computers and new technologies. In the past years, a large number of recent books on computers, the internet, cyberspace, and the like have appeared by a wide range of writers whose discourse is surprisingly and strikingly technophobic.

One strand of this vast technophobic literature now aimed at computers goes back to 1960s and earlier criticism of technology by Theodor Rozack, Charles Reich, Neil Postman, Jerry Mander, and other longtime critics of media culture and technology, who now aim their anti-technology jeremiads at computers. The same arguments these writers have previously used against technology in general, they are now using against computers, so there is recycling of a lot of arguments we've heard before -- at least an oldtimer like myself who has been fighting the theory wars since the 1960s has heard the siren song demonizing technology many times before and has even been seduced upon occasion by its melodies. I was, indeed myself something of a technophobe in the 1960s, I always hated machines, never fetishized cars, was indifferent toward television, and preferred the joys of reading and excitement of sex and radical politics, but was won over to technology in the 1970s with video and media technologies and in the 1980s with computer technologies and am now attempting to overcome technophobia and develop a dialectical position.

Critiques have emerged from the philosophical community, including Albert Borgmann's *Across the Postmodern Divide* (1994) which claims that new technologies are taking us into the sphere of hyperreality, a term he borrows from Baudrillard, and that we are losing touch with our bodies, with nature, with other people and with focal things and practices. Lorenzo Simpson's book on technology and modernity links technology by contrast to modernity (1994), providing another technophobic polemic against how technology is alienating and oppressing us. Postmodern theorists Arthur Kroker and Michael Weinstein have written a book called *Data Crash* (1995) -- a highly demonizing and technophobic book which suggests that our culture has crashed, imploded, into hyperreality, and that we've lost touch with reality altogether, that we are ruled by a new virtual class, that we have entered a new stage of virtual capitalism, which comes to a great surprise to those still laboring in sweatshops or factories. But perhaps the most famous technophobe is the Unabomber whose Manifesto is a compendium of anti-technological, technophobic discourses, condemning industrial-technological society in its totality, echoing countercultural writers and theorists like Marcuse, Ellul, and other critics of the technological society who condemned its dehumanizing features, its tendencies toward massification, and its robbing individuals of power and freedom.

Other technophobic missives include Clifford Stoll, *Silicon Snake Oil: Second Thoughts on the Information Highway* (1995), which provides a fascinating contrast with Gates book, attacking everything that Gates affirms, providing positive-negative mirror images of each other, both of which are highly one-sided and demonstrate the need for dialectical perspectives. Our comrades on the Left are also enrolled in the ranks of the anti-information technology forces, including Kevin Robins and Frank Webster who advocate a neo-Luddism (1986 and in this volume), failing to see any progressive aspects to the new technologies which they see primarily as capitalist tools, used by capital to ensure its hegemony and to alternately dominate and overpower or seduce the working class into virtual dreams and technofetishism. Thus, while Robins and Webster are aware of the magnitude of the restructuring of capital and of the importance of new technologies in this restructuring, they primarily maintain a gloomy pessimism, believing that new technologies are simply tools of capital hegemony and not resistance and democratization.

Against one-sided technophilic or technophobic approaches, I would argue that we need to

develop a *critical theory of technology* in order to sort out positive and negative features, the upside and downside, the benefits and the losses in the development and trajectory of the new technologies. It is necessary, I believe, to counter promises of technological utopia, that computers will solve all our problems, produce jobs for everyone, generate a wealth of information, entertainment, and education, connect everyone, and overcome boundaries of gender, race, class -- claims that we hear from Bill Gates, Clinton and Gore, Tony Blair, and others. But we also need to counter technological dystopia, that computers are our damnation, that they are vehicles of alienation, mere tools of capital, the state, and domination.

Both approaches are one-sided and reveal the need for a dialectical theory that plays off extremes against each other to generate a more inclusive position, indicating how technology can be used as instruments of domination and emancipation, as tools of both dominant societal powers and of individuals struggling for democratization and empowerment. What is at stake, therefore, is theorizing at once how new technologies can be used as instruments of domination and how new technologies can be used for democratization, for creating a more egalitarian society, and for empowering individuals and groups who are currently disenfranchised and without power -- a task that I will undertake in the following sections of this paper.

One also needs to distinguish between technology as part of an societal system, as a force of production that inscribes a system of relations of production contrasted to technology as a set of specific instruments and practices used by particular individuals with their own ends and goals in sight.[1] This involves theorizing connections between technology and the economic, political, cultural, and social dimensions of contemporary society, and seeing how technology can be used differently by varying groups and individuals in specific contexts. In the current mode of social organization, technology plays such a major role, however, that there has been an explosion of theories of technological determinism which make technology *the* organizing principle of contemporary society, thus occluding the force and power of economic and political dimensions.

Theories of technological determinism often use the discourse of postindustrial, or postmodern, society to describe current developments. This discourse often develops an ideal-type distinction between a previous mode of industrial production characterized by heavy industry, mass production and consumption, bureaucratic organization, and social conformity, contrasted to the new postindustrial society characterized by "flexible production," or "postFordism," in which new technologies serve as the demiurge to a new postmodernity (Harvey 1989). For postmodern theorists such as Baudrillard, technologies of information and social reproduction (e.g. simulation) have permeated every aspect of society, high tech has created a new social environment and we have left reality and the world of modernity behind, as we undergo an implosion of technology and the human and mutate into a new species (see Baudrillard 1993 and the analyses in Kellner 1989b and 1994). For other less extravagant theorists of the technological revolution, we are evolving into a new postindustrial technosociety, culture, and condition where technology, knowledge, and information are the axial or organizing principles (Bell 1976).

The postindustrial society is sometimes referred to as the "knowledge society," or "information society," in which knowledge and information are given roles more predominant than earlier days (see the survey in Webster 1995). It is now certain that the knowledge and information sectors are increasingly important domains of our contemporary moment and, as many have

noted, the theories of Daniel Bell and other postindustrial theorists are not as ideological and far off the mark as many of us once argued. But in order to avoid the technological determinism and idealism of many forms of this theory, one should theorize the information or knowledge "revolution" as part and parcel of a new form of technocapitalism marked by a synthesis of the information and entertainment industries and producing a new form of "infotainment society." The limitations of earlier theories of the "knowledge society" or "postindustrial society," as well as current forms of the "information society," devolve around the extent to which they exaggerate the role of knowledge and information and advance an idealist vision that excessively privileges the role of knowledge and information in the economy, in politics and society, and in everyday life, downplaying the role of capitalist relations of production, corporate ownership and control, and hegemonic configurations of corporate and state power.

Yet while perceiving the continuities between previous forms of industrial society and the new modes of society and culture described by discourses of the "post," we should also grasp the novelties and discontinuities (Best and Kellner 1997). Webster (1995: 5, *passim*) wants to draw a line between "those who endorse the idea of an information society" and "writers who place emphasis on continuities." Although he puts me in the camp of those who emphasize continuities (188), I would argue that we need to see both continuities *and* discontinuities in the current societal transformation we are undergoing, that we deploy a both/and logic in this case and not an either/or logic. In other words, we need both to theorize the novelties and differences in the current social restructuring, as well as the continuities with the previous mode of societal organization. Such a dialectical optic is, I believe, consistent with the mode of vision of Marx and neo-Marxists such as those in the Frankfurt School.

I also believe that current conceptions of the information society and emphasis on information technology as its demiurge is by now too limited; the new technologies are modes of information *and* entertainment and it is becoming harder and harder to separate them. Indeed, as I have been suggesting, the new technologies are much more than solely information technology, but are also technologies of entertainment, communication, and play, encompassing and restructuring both labor and leisure. Previous forms of entertainment are rapidly being absorbed within the Internet, and the computer is coming to be the major household appliance and source of entertainment, information, play, communication, and connection with the outside world. As clues to the enormity of the transformation going on, as indicators of the syntheses of information and entertainment in the infotainment society, I would suggest reflections on the massive mergers of the major information and entertainment conglomerates that have taken place in the United States during the past two years which have seen the most extensive concentration and conglomeration of information and entertainment industries in history, including:

CBS and Westinghouse: \$5.5 billion
MCA and Seagrams: \$5.6 billion
Time Warner and Turner: \$ 7.5 billion --
Disney/Capital Cities/ ABC \$19 billion
NBC and Microsoft/ megabillions

These mergers bring together corporations involved in TV, film, magazines, newspapers, books, information data bases, computers, and other media, suggesting a coming implosion of media

and computer culture, of entertainment and information in a new infotainment society. There have also been massive mergers in the telecommunications industry (in the U.S. between Southwest Bell and California Bell and a \$25.6 billion New York and Atlantic Bell merger, with a merger between AT&T and major regional systems almost occurring, and with MCI negotiating a \$37 billion merger with WorldCom, which topped British Telecommunications and GTE offers). The corporate media, communications, and information industries are frantically scrambling to provide delivery for the wealth of information, entertainment, and other services that will include increased internet access, cellular telephones and satellite personal communication devices, and computerized video, film, and information on demand, as well as Internet shopping and more unsavory services like pornography and gambling.

Consequently, the mergers between the great information, computer, and entertainment conglomerates disclose a synergy between new technologies and media, which combine entertainment and information, undermining such a distinction and requiring an expansion of the concept of information revolution or information society; thus I introduce the concept of the infotainment society to highlight the imbrications of information and entertainment in the new media and technologies of the present. Together, these corporate mergers and the products and services that they are producing constitute a new form of technocapitalism and new infotainment society that it is our challenge to theorize and attempt to shape to more humane and democratic purposes than the accumulation of capital and corporate/state hegemony.

Theorizing Technocapitalism

I thus want to argue that this synthesis of entertainment and information in the technological and information revolution is part of the creation of a new infotainment society that itself is part and parcel of a global restructuring of capitalism. Few theories of the information revolution and the new technologies contextualize the structuring, implementation, marketing, and use of new technologies in the context of the vicissitudes of contemporary capitalism. The ideologues of the information society act as if technology were an autonomous force and either neglect to theorize the interconnections of capital and technology, or use the advancements of technology to legitimate market capitalism (i.e. Gates 1995). More critical theorists of the momentous changes in the contemporary society often fail to theorize the ways that the restructuring of capital are connected with technological revolution. Offe (1985) and Lash and Urry (1987 and 1994), for instance, see important changes in the economy, polity, culture, and society, but see this as a disorganization of capitalism, as its unravelling, rather than as reorganization.

While most of the prophets and promoters of the information society tend to be technological determinists, many of the (neo)Marxists who criticize its ideologies and practices tend to be economic determinists. Both economic and technological determinisms, however, often neglect the role of continuing conflict and struggle, the possibilities of intervention and transformation, and the ability of individuals and groups to remake society to serve their own needs and purposes. In all determinist conceptions, technology and society are conceived as matrixes of power and domination, while humans are seen as passive objects of manipulation and empowering uses of technology are not considered. With Lewis Mumford, however, we should insist that humans take command of their social circumstances and technology, shape their social environment to enhance their life and use technology to empower themselves and democratize

society. Technics are instruments that can be actively deployed by human beings. Although they are shaped by social forces to serve specific ends, they can be reconfigured, reshaped, and deployed against the purposes for which they are designed. This is close to what autonomous Marxists call self-valorization, as opposed to capital-valorization, using the technics of production and communication against capitalist relations of production and values (see Negri 1989).

But to avoid the romanticism of voluntarism and humanism, we need to be clear concerning the precise economic, social, political, cultural, and technological forces that are currently restructuring every aspect of life and develop strategies based on this knowledge. I introduced the term "technocapitalism" to describe the synthesis of capital and technology in the present organization of society (Kellner 1989a). Unlike theories of postmodernity (i.e. Baudrillard) which often argue that technology is the new organizing principle of society, and not the economic relations, I propose the term "technocapitalism" to point to both the increasingly important role of technology and continued primacy of capitalist relations of production. I would argue that contemporary societies continue to be organized around production and capital accumulation, and that capitalist imperatives continue to dominate production, distribution, and consumption, as well as other cultural, social and political domains. Workers continue to be exploited by capitalists and capital continues to be the hegemonic force -- more so than ever after the collapse of communism.

The term technocapitalism points to a configuration of capitalist society in which technical and scientific knowledge, automation, computers, and high tech play a role in the process of production analogous to the role of human labor power, mechanization of the labor process, and machines in an earlier era of capitalism, while producing as well new modes of societal organization and forms of culture and everyday life. We are in a parallel situation, I believe, to the Frankfurt school in the 1930s which was forced to theorize the new configurations of economy, polity, society and culture brought about by the transition from market to state monopoly capitalism which was producing new forms of social and economic organization, technology, and culture with the rise of giant corporations and cartels, a capitalist state to help organize capitalism whether in a fascist or a state capitalist form, and with culture industries and mass culture serving as new modes of social control, new forms of socialization, and a new configuration of culture and everyday life (Kellner 1989a). My thesis is that today media culture and new technologies are vitally transforming every aspect of social life in a process that is creating new forms of society, sometimes described as postmodern society, the information society, cybersociety, global postFordism, and various other terms.

The concept of technocapitalism thus points to syntheses of technology and capital and attempts to avoid technological or economic determinism. The restructuring of capital, I am now arguing, is producing a very specific new social configuration that I have termed "the infotainment society" in order to point to the mergers of information and media industries and to the significance of new technologies of information, entertainment, and social reproduction. In terms of political economy, the new postindustrial form of technocapitalism is characterized by a decline of the state and increased power of the market, accompanied by the growing power of globalized transnational corporations and governmental bodies and the decline of the nation-state and its institutions. To paraphrase Max Horkheimer, whoever wants to talk about capitalism,

must talk about globalization, and it is impossible to theorize globalization without talking about the restructuring of capitalism (see Cvetkovitch and Kellner 1996 and Kellner 1998).

While knowledge, information, and education are probably playing a more important role than ever in the organization of contemporary society, this is because, I would argue, capital is restructuring itself through the implementation of new technologies into every sphere of life. The dangers are that corporate control of knowledge, information, entertainment, and technology will provide a tremendous concentration of corporate power without any countervailing forces. The ideologues of the technological revolution and information society are forever arguing that education is the key to future prosperity, that education must be made available to all, and that it is thus the top social priority.[2] This would be fine if education were to be expanded and made accessible to more individuals and if it were able to augment the realm of knowledge and literacies, rather than just to serve as a sophisticated enhancement of job training, focusing on transmitting the skills and knowledge that capital needs to expand and multiply.

Yet it is clear that new technologies *are* revolutionizing not only labor, production, and leisure, but also education and schooling. The past years have seen major implementation of new technologies in the educational process and a fierce debate over how to deploy new technologies, how to make them accessible for everyone, and whether they are enhancing or destroying education.[3] Whether new technologies will ultimately enhance or diminish and harm education is not yet decidable, but it is clear that individuals need to develop intensified computer literacy, as well as print literary and, I would add, media literacy, social and cultural literacy, and ecoliteracy (see Kellner, forthcoming). As we approach an increasingly complex new world, we need to greatly expand and rethink education and literacy and to devise strategies to use technology to strengthen and democratize education.

Since new technologies are in any case dramatically transforming every sphere of life, the key challenge is how to theorize this great transformation and how to devise strategies to make productive use of the new technologies. Obviously, radical critiques of dehumanizing, exploitative, and oppressive uses of new technologies in the workplace, schooling, public sphere, and everyday life are more necessary than ever, but so are strategies that use new technologies to rebuild our cities, schools, economy, and society. I want to focus, therefore, in the remainder of this section on how new technologies can be used for increasing democratization and empowering individuals. In previous articles (Kellner 1995 and 1996), I have argued that new technologies are creating a new public sphere, a new realm of cyberdemocracy, and are thus challenging public intellectuals to gain technoliteracy and to make use of the new technologies for promoting progressive causes and social transformation.

Given the extent to which capital and its logic of commodification have colonized ever more areas of everyday life in recent years, it is somewhat astonishing that cyberspace is by and large decommodified for large numbers of people -- at least in the overdeveloped countries like the United States. In the U.S., government and educational institutions, and some businesses, provide free Internet access and in some cases free computers, or at least workplace access. With flat-rate monthly phone bills (which I know do not exist in much of the world), one can thus have access to a cornucopia of information and entertainment on the Internet for free, one of the few decommodified spaces in the ultracommodified world of technocapitalism.

Obviously, much of the world does not even have telephone service, much less computers, and there are vast inequalities in terms of who has access to computers and who participates in the technological revolution and cyberdemocracy today. Critics of new technologies and cyberspace repeat incessantly that it is by and large young, white, middle or upper class males who are the dominant players in the cyberspaces of the present, and while this is true, statistics and surveys indicate that many more women, people of color, seniors, and other minority categories are becoming increasingly active. Moreover, it appears that computers are becoming part of the standard household consumer package and will perhaps be as common as television sets by the beginning of the next century, and certainly more important for work, social life, and education than the TV set. Moreover, there are plans afoot to wire the entire world with satellites that would make the Internet and communication revolution accessible to people who do not now even have telephones, televisions, or even electricity.[4]

However widespread and common -- or not -- computers and new technologies become, it is clear that they are of essential importance for labor, politics, education, and social life, and that people who want to participate in the public and cultural life of the future will need to have computer access and literacy. Moreover, although there is the threat and real danger that the computerization of society will increase the current inequalities and inequities in the configurations of class, race, and gender power, there is the possibility that a democratized and computerized public sphere might provide opportunities to overcome these inequities. I will accordingly address below some of the ways that oppressed and disempowered groups are using the new technologies to advance their interests and progressive political agendas. But first I want to dispose of another frequent criticism of the Internet and computer activism.

Critics of the Internet and cyberdemocracy frequently point to the military origins of the technology and its central role in the practices of dominant corporate and state powers. Yet it is amazing that the Internet for large numbers is decommodified and is becoming more and more decentralized, becoming open to more and more voices and groups. Thus, cyberdemocracy and the Internet should be seen as a site of struggle, as a contested terrain, and progressives should look to its possibilities for resistance and circulation of struggle. Dominant corporate and state powers, as well as conservative and rightist groups, have been making serious use of new technologies to advance their agendas and if progressives want to become players in the political battles of the future they must devise ways to use new technologies to advance a progressive agenda and the interests of the oppressed and forces of resistance and struggle.

There are by now copious examples of how the Internet and cyberdemocracy have been used in progressive political struggles. A large number of insurgent intellectuals are already making use of these new technologies and public spheres in their political projects. The peasants and guerilla armies struggling in Chiapas, Mexico from the beginning used computer data bases, guerrilla radio, and other forms of media to circulate their struggles and ideas. Every manifesto, text, and bulletin produced by the Zapatista Army of National Liberation who occupied land in the southern Mexican state of Chiapas in 1994 was immediately circulated through the world via computer networks.[5] In January 1995, the Mexican government moved against the movement and computer networks were used to inform and mobilize individuals and groups throughout the world to support the Zapatistas struggles against repressive Mexican government action. There

were many demonstrations in support of the rebels throughout the world, prominent journalists, human rights observers, and delegations travelled to Chiapas in solidarity and to report on the uprising, and the Mexican and U.S. governments were bombarded with messages arguing for negotiations rather than repression; the Mexican government accordingly backed off their repression of the insurgents and as of this writing in December 1997, they have continued to negotiate with them.

Frantz Fanon (1967) described the central role of the radio in the Algerian Revolution, and Lenin highlighted the importance of film in promoting communist ideology after the revolution. In addition, audiotapes were used to promote the revolution in Iran and to promote alternative information by political movements throughout the world (see Downing 1984). The Tianenamen Square democracy movement in China and various groups struggling against the remnants of Stalinism in the former communist bloc and Soviet Union used computer bulletin boards and networks, as well as a variety of forms of communications, to circulate their struggles. Opponents involved in anti-NAFTA struggles made extensive use of the new communication technology (see Brenner 1994 and Fredericks 1994). Such multinational networking and circulation of information failed to stop NAFTA, but created alliances useful for the struggles of the future. As Nick Witherford (forthcoming) notes: "The anti-NAFTA coalitions, while mobilizing a depth of opposition entirely unexpected by capital, failed in their immediate objectives. But the transcontinental dialogues which emerged checked -- though by no means eliminated -- the chauvinist element in North American opposition to free trade. The movement created a powerful pedagogical crucible for cross-sectoral and cross-border organizing. And it opened pathways for future connections, including electronic ones, which were later effectively mobilized by the Zapatista uprising and in continuing initiatives against maquiladora exploitation."

Thus, using new technologies to link information and practice, to circulate struggles, is neither extraneous to political battles nor merely utopian. Even if material gains are not won, often the information circulated or alliances formed can be of use. For example, two British activists were sued by the fastfood chain McDonald's for distributing leaflets denouncing the corporation's low wages, advertising practices, involvement in deforestation, harvesting of animals, and promotion of junk food and an unhealthy diet. The activists counterattacked, organized a McLibel campaign, assembled a McSpotlight website with a tremendous amount of information criticizing the corporation, and assembled experts to testify and confirm their criticisms. The five-year civil trial, ending ambiguously in July 1997, created unprecedented bad publicity for McDonald's and was circulated throughout the world via Internet websites, mailing lists, and discussion groups. The McLibel group claims that their website was accessed over twelve million times and the Guardian reported that the site "claimed to be the most comprehensive source of information on a multinational corporation ever assembled" and was indeed one of the more successful anticorporate campaigns (February 22, 1996; visit <http://www.envirolink.org/mcspotlight/home.html>).

Many labor organizations are also beginning to make use of the new technologies. Mike Cooley (1987) has written of how computer systems can reskill rather than deskill workers, while Shosana Zuboff (1988) has discussed the ways in which high-tech can be used to "informate" workplaces rather than automate them, expanding workers knowledge and control over

operations rather than reducing and eliminating it. The Clean Clothes Campaign, a movement started by Dutch women in 1990 in support of Filipino garment workers has supported strikes throughout the world, exposing exploitative working conditions (see their website at <http://www.cleanclothes.org/1/index.html>). In 1997, activists involved in Korean workers strikes and Merseyside dock strike in England used websites to gain international solidarity (for the latter see <http://www.gn.apc.org/lbournet/docks>).[6]

Most labor organizations, such as the North South Dignity of Labor group, note that computer networks are useful for coordinating and distributing information, but cannot replace print media that is more accessible to more of its members, face-to-face meetings, and traditional forms of political struggle. Thus, the challenge is to articulate one's communications politics with actual political movements and struggles so that cyberstruggle is an arm of political battle rather than its replacement or substitute. The most efficacious Internet struggles have indeed intersected with real struggles ranging from campaigns to free political prisoners, to boycotts of corporate projects, to actual labor and even revolutionary struggles, as noted above.

Hence, to capital's globalization from above, cyberactivists have been attempting to carry out globalization from below, developing networks of solidarity and circulating struggle throughout the globe. To the capitalist international of transnational corporate globalization, a Fifth International of computer-mediated activism is emerging, to use Waterman's phrase (1992), that is qualitatively different from the party-based socialist and communist Internationals. Such networking links labor, feminist, ecological, peace, and other progressive groups providing the basis for a new politics of alliance and solidarity to overcome the limitations of postmodern identity politics (on the latter, see Best and Kellner 1991, 1997, and forthcoming).

Moreover, a series of struggles around gender, sex, and race are also mediated by new communications technologies. After the 1991 Clarence Thomas Hearings in the United States on his fitness to be Supreme Court Justice, Thomas's assault on claims of sexual harassment by Anita Hill and others, and the failure of the almost all male US Senate to disqualify the obviously unqualified Thomas, prompted women to use computer and other technologies to attack male privilege in the political system in the United States and to rally women to support women candidates. The result in the 1992 election was the election of more women candidates than in any previous election and a general rejection of conservative rule.

Many feminists have now established websites, mailing lists, and other forms of cybercommunication to circulate their struggles. Younger women, sometimes deploying the concept of "riotgrrrls," have created electronically-mediated 'zines, web sites, and discussion groups to promote their ideas and to discuss their problems and struggles. African-American women, Latinas, and other groups of women have been developing web sites and discussion lists to advance their interests. And AIDS activists have used new technologies to disseminate and discuss medical information and to activate their constituencies for courses of political action and struggle.

Likewise, African-American insurgent intellectuals have made use of broadcast and computer technologies to promote their struggles. John Fiske (1994) has described some African-American radio projects in the "technostruggles" of the present age and the central role of the media in

recent struggles around race and gender. African-American "knowledge warriors" are using radio, computer networks, and other media to circulate their ideas and counter-knowledge on a variety of issues, contesting the mainstream and offering alternative views and politics. Likewise, activists in communities of color -- like Oakland, Harlem, and Los Angeles -- are setting up community computer and media centers to teach the skills necessary to survive the onslaught of the mediatization of culture and computerization of society to people in their communities.

Obviously, rightwing and reactionary groups can and have used the Internet to promote their political agendas as well. In a short time, one can easily access an exotic witch's brew of ultraright websites maintained by the Ku Klux Klan, myriad neo-Nazi groups including Aryan Nations and various Patriot militia groups. Internet discussion lists also promote these views and the ultraright is extremely active on many computer forums, as well as their radio programs and stations, public access television programs, fax campaigns, video and even rock music production. These groups are hardly harmless, having promoted terrorism of various sorts ranging from church burnings to the bombings of public buildings. Adopting quasi-Leninist discourse and tactics for ultraright causes, these extremist groups have been successful in recruiting working class members devastated by the developments of global capitalism which have resulted in widespread unemployment for traditional forms of industrial, agricultural, and unskilled labor.

The Internet is thus a contested terrain, used by Left, Right, and Center to promote their own agendas and interests. The political battles of the future may well be fought in the streets, factories, parliaments, and other sites of past struggle, but all political struggle is already mediated by media, computer, and information technologies and will increasingly be so in the future. Those interested in the politics and culture of the future should therefore be clear on the important role of the new public spheres and intervene accordingly.

Technocities and Everyday Life: Some Inconclusive Conclusions

I hesitate to speculate on the development of global cities and forms of urbanization in the emerging era of technocapitalism. While there is one theoretical tendency which has spawned a vast literature on global cities which sees cities replacing the nation state, becoming a vitalized source of business, entertainment, and sometimes community (see Castells 1989), there are other discourses which downplay the importance of the city and offer a more decentralized vision of the coming computopia. A stream of literature moving through Naisbitt, the Tofflers, and other apologists for information capitalism suggest that labor will be decentralized in the information economy of the future, that work will be done at home, that it will no longer be necessary to work and live in big cities, and so one can enjoy the utopia of the country or small town and the pleasures of new virtual communities, as the giant urban centers of the industrial age decay.

Thus, one affirmative discourse sees the rejuvenation of cities and urban living in the healthy and hearty neo-capitalism, in which capital generated by the information revolution will produce a more livable and sustainable urban environment, leading to a rebirth and regeneration of great urban centers. Another, more bucolic and communitarian, discourse celebrates the decentralization in the new computerized economy that will make possible work at home and life

in small towns, pleasant countryside, and the virtual communities of cyberspace. I want to suggest that both of these discourses are ideological, that both grossly underestimate the crisis of the cities, and that neither offers a realistic vision to transform and make livable the cities of the actually existing present moment.

To begin, it is not yet clear if the newtechnocapitalist project of the global information/entertainment society will generate sufficient capital to at once restructure work, rejuvenate the cities, or provide a sustainable life for the vast amount of its denizens and netizens. So far, the technocapitalist restructuring has created tremendous wealth for a privileged class, a stock market orgy that has benefitted individuals and institutions able to invest and who pursued intelligent investment strategies, while also generating a vast service industry and part-time temporary work for growing numbers of people, as well as growing unemployment and downward mobility for those who are the victims of technological redundancy and corporate downsizing.

To some extent, the cybertopias and virtual communities celebrated by boosters of the high tech revolution provide compensation for the growing poverty of everyday life under technocapitalism, as well as the tremendous growth of economic poverty and deprivation. Moreover, I would argue that the concept of virtual urbanism or virtual communities idealizes the sort of social interactions, individual and group activity, and the politics of cyberspace and its cognates. Kevin Robins (in this volume) points out that ideologues of technocities and virtual communities offer an idealized vision of order and harmony that provides compensatory escape from the messiness, inequalities, and disorder of our contemporary situation, and that this utopian vision of virtual life and architecture is congruent with the utopian dreams of Corbusier and other avatars of modern architecture. But both many ideologues of the virtual life and Robins and his fellow traveler critics of cyberlife miss the point that part of the attractiveness, fun, and democratic participatory openness of cyberlife is precisely the messiness, the disorder, the scrambling of conventional order and codes, and the rough give and take of argumentation, flaming, and passionate discussion of issues of common interest. This is not really a community, let alone a city, but is a new form of public space and democratic participation.

Thus, I am comfortable in affirming the vitality and promise of cyberdemocracy in the new public spheres of cyberspace (Kellner 1995 and 1996). This space is much more participatory than the space of television and corporate-controlled media culture, it is much more varied and lively than most public and cultural spaces of contemporary culture, as well as the older public institutions like the pub, bar, or coffee houses -- which are in any case closing or being absorbed by giant corporations.[7] Of course, this largely decommodified public space of cyberculture could itself be colonized by capital and be the source of corporate virtual shopping malls and propaganda, as well as highly exploitive mindless entertainment, gambling, and pornography.

Yet, in a curious way, the cyberspace disorder often produces forms of order and structure, and its vitality, diversity, and the belongingness of the new cyberspaces are analogous in some ways to Jane Jacobs' celebration of urban community and her attack on the utopianism of modern architecture (1961). Thus, cyberspaces resemble more Jacobs' vital urban communities with their difference and diversity rather than the more harmonious and ordered aestheticized views of Courbu and the high modernists. The best sites in cyberspace are not well-ordered and

structured, or even civil and sophisticated, but are full of life and diversity, excitement and adventure, and useful information spiced with diverting entertainment -- just like the best urban communities before they were destroyed, or undermined, by crime, corporate restructuring and flight, and the vicissitudes of technocapitalism.

As Marcuse (1941) reminds us, although technology can be part of an apparatus of domination, technics -- specific technologies -- can be used as instruments of emancipation or domination. Technologies are human creations which can empower us and enhance human life, although as Mumford reminds us (1934) it is imperative for humans to control technologies, to put them in the service of specific goals, to construct technologies that are humanizing and life-enhancing and not dehumanizing and destructive. Technology is the great human adventure of our time and it has highly contradictory effects rendering one-sided approaches hopelessly inadequate to grasp the complexity of the new technological restructuring of the world. Our challenge is to create new technological spaces and worlds and to use technology to transform everyday life. Such a project, I would maintain, is infinitely more constructive than simply denouncing new technologies, or mindlessly celebrating their current configurations.

Still, I hesitate to speculate on the future construction and effects of the new cyberspace, on what sort of communities will be formed, and to what extent these spaces might function as virtual or technocities. It is clear that this is a rapidly mutating space, that it is a site that more and more people are choosing to inhabit, and that in some ways it is replacing, or supplementing, urban and communal life as we've known and lived it over the past centuries. Yet cities are a great product of civilization, based on face-to-face living, shared public spaces, and full bodily presences. It is unlikely that cyberspaces can replace urban spaces, that they can provide habitats for living that are as nourishing and rewarding -- or in some cases as destructive -- as the cities and communities that are part and parcel of our life histories.

Changes are certainly happening, we are undergoing a Great Transformation, but we are, I believe, too early in the beginnings of this adventure to determine its structure, social relations, cultural forms, and effects. It is clear, however, that a technological revolution is going on, that it will have massive effects, and that it is a great challenge to us concerning how we will actually use the new technologies -- or whether they and the forces that control it will themselves use us in their projects. Thus, it is not only a challenge to social theorists to theorize the new technologies and their effects and to activists to devise strategies for using the technology to promote progressive political change, but it is a challenge to each individual to determine how they will live the new technologies and cyberspaces, how they will themselves deploy them, and whether they will ultimately be empowering or disempowering.

Notes

1. For this distinction, see Marcuse 1941 and Mumford 1934. Indeed, one can profitably go back and reread Mumford's *Technics and Civilization* and many other writings on technology and society; on Mumford and technology, see Miller 1989 and Luccarelli 1995. I will make use of Mumford's position that humans should strive to use technology to promote human development

in this study.

2. Clinton early on proclaimed that he wanted to be the "education president" and in his 1997 State of the Union message stressed that he wanted to prioritize the expansion and strengthening of education in the rest of his term, in order to provide the "bridge to the 21st century" and to make the U.S. competitive in the information economy. In a forthcoming study, Frank Webster quotes the new Labor party Prime Minister Tony Blair making a similar speech, maintaining that "education is the best economic policy there is for a modern economy."

3. For documentation, see the material archived in my UCLA website <http://www.gseis.ucla.edu/courses/ed253a/253WEB1.htm>

4. Many articles document Bill Gates's company plan to send up 48 low-orbit, small satellites to cover most of the Americas... and then the world...

5. See Cleaver 1994, the documents collected in Zapatistas 1994, and the various websites, mailing lists, and documents archived on the World Wide Web.

6. For an overview of the use of electronic communication technology by labor, see the studies by Moody 1988; Waterman 1990 and 1992; and Brecher and Costello 1994. Labor projects using the new technologies include the U.S. based LaborNet, the European Geonet, the Canadian xxx, the South African WorkNet, the Asia Labour Monitor Resource Centre, Mujer a Mujer, representing Latina women's groups, and the Third World Network, while PeaceNet in the United States is devoted to a variety of progressive peace and justice issues.

7. In the United States in recent years, the national coffee chain Starbucks has destroyed countless local coffee houses; Barnes and Noble, Borders Books, and other national book chains have displaced local bookstores; and small restaurants and cafes are being put out of business by fast food and chain restaurants; as I write this in July 1997, I learn with grief that my favorite Austin sidewalk cafe, Les Amis, has just closed down.