The Cyberspace Dialectic

Cyberspace floats now in a cultural limbo. The limbo is a zigzag holding pattern that professional philosophers call "the dialectic." This dialectic is a social fever characterized by wide mood swings between utopian fantasy and hateful cynicism. Hyperbole alternates with attack, and the status of cyberspace hovers uncertain: Commercial jukebox? Neo-democracy? The End of Broadcasting? Monster information swamp?

Cyberspace has always been provocative, but it has not always been controversial. The word, and the concepts it came to represent, burst on the scene like gangbusters in William Gibson's 1984 science-fiction novel, Neuromancer, and then gained academic gravity through conferences and books in the early 1990s like Michael Benedikt's anthology, Cyberspace: First Steps.[1] Then in the mid 1990s, cyberspace became celebrated in daily newspapers and television spots, while the tenth edition of Merriam-Webster's Collegiate Dictionary confidently defines it as "the online world of computer networks." Politicians sought to extend legislative power over "the information highway" by dredging up online obscenities, pursuing hacker felons, and declaring cyberspace a federal "superhighway" where the speed of telecommunication would fall under congressional jurisdiction. Today, naive questions like What is it? or How do I connect to it? have evolved into trickier questions like: Am I for or against cyberspace? What position do I take regarding its social benefits? Now that we have crossed the electronic frontier, how does our society measure cyberspace? This is where most of us could learn from the dialectic.

Originally, the word circulated among the ancient Greeks, who used dialektikê (tekhnê) to mean the art of debate and conversation. Dialegesthai means "talking

something through" or "organizing a subject matter." In other words, transformational dynamics first appeared as part of the art of conversation. The ancient Greeks gave dialectic its classical expression in written dialogues. There, in the Greek-language, the word "dialectic" was born, and its twin sibling was the word "dialogue."

Jumping ahead several millenia, the idea of dialectic in modern times has come, through Georg W. Hegel and Karl Marx, to signify the transformational dynamics of social history. Hegel developed his notion of the dialectic to include the back-and-forth process of social movements where one advance in freedom evokes its opposite reaction, which in turn calls forth another and opposite reaction, and so forth. Dialectic was not simply an abstract template of "thesis-antithesis-synthesis" to be applied in a doctrinaire manner to politics. Dialectic was, rather, the concrete movement of social history itself. Marx, the next signpost in the development of the dialectic, identified history with the history of civil wars and violent revolutions, but Hegel's dialectic originally included the more subtle shifting forces of social change that propel human evolution.

In those systems that adopted Marx's philosophy, the dialectic became the cornerstone of official ideology. In the Soviet Union, for example, millions of students in Communist schools carried text-books bearing the stamp "DIAMAT," short for "Dialectical Materialism." The dialectic in its Marxist-Leninist form belonged to materialistic philosophy as a rigid set of doctrines defining the socio-economic struggle between capital and labor. The straight party line of Communism largely eroded the original meaning of dialectic as a term to describe historical dynamics. This was particularly ironic, for, as we have seen, dialectic resists stability, finding its form in the unsettling, the changing, the shifting.

Both historical and critical discussion of the dialectic run through this paper, but it is important to acknowledge that the present taint of the word “dialectic” is due to its centrality to Marxist thought and policies. As a result, many people automatically recoil

against dialectic and fail to see its usefulness in weighing the new reality layer. It is true that networked computer media have launched an information space that ill befits the materialistic mold of Marxism, based as it was in the reading of early industrial capitalism. I believe, nonetheless, that we can still use dialectic as a tool to move beyond the polarity of fear and fascination that characterizes the continuum that binds the fans of the anti-technology Unabomber to the millions who use computers to surf the Internet. The dialectic I have in mind is that which preceded Marxism and can be clearly described. I want to show that dialectic can indeed illuminate the paradoxes of the current debate about the value of cyberspace. Though bound by an underlying ontology, the dialectic can still illuminate the confusion and tension created by new media. There is something of the joke or paradox that propels all dialectical thinking. We live in a most appropriate era to savor the dialectical joke. An appropriate joke, indeed, for an era when people express their support for anarchist-inspired attacks on technology by posting messages to the World Wide Web.

Unabomber Backlash

The figure of the Unabomber (and the concerns he came to represent) is one side of the cyberspace dialectic.[2] An extreme provokes the full force of its opposite reaction. To be sure, the Unabomber extremist cannot be understood in isolation from the one-sided enthusiasm that pervades a commercial culture that sells millions of computers every year. The Unabomber's extremism became clear to the public in September, 1995 when the Washington Post published his 56-page, 35,000-word manifesto on "Industrial Society and Its Future."[3] Under the pressure of bomb threats against airline passengers, the newspaper carried the manifesto in its morning edition. By evening on the East Coast, you could not find a single copy of the Post with its 8-page manifesto insert. The next day, however, the 200-kilobyte text of the manifesto turned up on the Internet. It appeared on a World-Wide Web site sponsored by the Federal Bureau of Investigation.

Desperate to be published, the Unabomber now had his own "home page," illustrated with wanted posters and maps pinpointing the series of explosions he had caused, all in a high-tech, HTML format.

Search the Unabomber Manifesto and you find the word "computer" frequently used in conjunction with "control" and "technology." The serial bomber blames technology, especially computers, for a vast variety of social ills: the invasion of privacy, genetic engineering, and "environmental degradation through excessive economic growth." The Unabomber Manifesto borrows from an older school of social critics who followed the French writer Jacques Ellul. Ellul's Technological Society, a bible in the 1960s, demonized an all-pervasive technology monster lurking beneath the "technological-industrial system."[4] Ellul took a snapshot of technology in the 1960s, and he then projected and expanded that single frozen moment in time onto a future where he envisioned widespread social destruction. Ellul's approach — what economists and futurists call "linear trend extrapolation" — takes into account neither social evolution nor economic transformation. Ellul did not take into account the possibility that economies of scale could develop that would redistribute certain forms of technological power, allowing individuals, for instance, to run personal computers from domestic spaces and in turn publish content on an equal footing with large corporations.

The dark future portrayed by Ellul appears throughout the Unabomber Manifesto, but the Unabomber goes further by linking the technology threat explicitly to computers. This killer critic sees computers as instruments of control to oppress human beings either by putting them out of work or by altering how they work. The Manifesto states:

> It is certain that technology is creating for human beings a new physical and social environment radically different from the spectrum of environments to which natural selection has adapted

> the human race physically and psychologically. If man does not adjust to this new environment by being artificially re-engineered, then he will be adapted to it through a long and painful process of natural selection. The former is far more likely that the latter.[5]

The dilemma outlined by the Unabomber can be found in other extremist critics. Many share the Unabomber's views without harboring his pathological desperation. The no-win dilemma they see is either to permit evolution to wreck millions of lives or to use technology to forcibly re-engineer the population. Laissez-faire evolution or artificial engineering seem the sole options: Either manipulate humans to fit technology, or watch technology bulldoze the population until all that remains is a techno-humanoid species of mutants. The Ellul school of criticism posits a monolithic steamroller "technology" that flattens every activity, and the Ellulian view allows only a static fit between technology and society. Recent alumni of this school, like Jean Baudrillard, nationalize the alien technology monster and call it "Americanization."[6] They fear the ghostly "representations of representations" that inject Disney-like simulacra into every facet of cultural life. Cultural life floats on a thin sea of representations that represent other representations whose active content has been exploited until they are empty images without meaning.

We need not look outside the borders of the United States, of course, to find anti-technological, Luddite theory. The Unabomber Manifesto reveals concerns raised by American critics. Some authors, like Kirkpatrick Sales, for instance, felt compelled to distance themselves from the Unabomber Manifesto because they in fact use many of the same arguments to reject technology and they share with the Unabomber some common critical sources like Ellul. While agreeing in principle with what the Unabomber's says, they want to distance themselves from terrorist practices. Such critics grew in numbers during the early 1990s when information technology extended into every areas of life,

spawning a multimedia industry and virtual reality companies. Computer networks like the Internet came into general use in the early 1990s, and economic forecasts indicated that the computerized infrastructure was transforming the national economy as well as the American culture. Not surprisingly, critics took a look.

The computer's impact on culture and the economy mutated from a celebration into what I call the cyberspace backlash. A cultural pendulum swings back and forth, both feeding off and being fed to a sensation-hungry media.[7] The media glom onto hype and overstatement, culled from marketers and true believers. When the media assesses the techno-culture, a trend climbs in six months from obscurity to one of the Five Big Things -- complete with magazine covers, front page coverage in newspapers, and those few minutes on television which now constitute the ultimate in mass appeal. After the build-up, the backlash begins. The process is as follows: (1) simplify an issue; (2) exaggerate what was simplified; (3) savage the inadequacies of the simplification. Cyberspace was no exception, and the reverse swing against cyberspace was inevitable.

The backlash is not simply the product of a fevered media economy; it taps into people's real attitudes towards an ever more technologized culture. This runs from those who are frustrated by the frequent need to upgrade software to those who experience "future shock" as a personal, existential jolt. While futurologists Alvin and Heidi Toffler preach "global trends" from an economist's overview, the individual suffers painful personal changes in the work and marketplaces. Waves of future shock may intrigue forward-looking policy makers, but those same swells look scary to someone scanning the horizon from a plastic board adrift in the Ocean. The big picture of evolutionary trends often overwhelms and silences the personal pain of living people. Those people will eventually find their voices in a backlash against the confident soothsayers in business suits.

A streak of the Unabomber's Luddite passion weaves through the cyberspace backlash. The titles of several books published in the past few years give a glimpse of the breadth of the backlash. Among the books are: Resisting the Virtual Life by James Brook and Iain Boal, Rebels Against the Future: The Luddites and Their War on the Industrial Revolution by Kirkpatrick Sale, Media Virus by Douglas Rushkoff, Data Trash by Arthur Kroker and Michael Weinstein, Silicon Snake Oil: Second Thoughts on the Information Highway by Clifford Stoll, The Age of Missing Information by Bill McKibben, The Gutenberg Elegies by Sven Birkerts, War of the Worlds: Cyberspace and the High-Tech Assault on Reality by Mark Slouka, and The Future Does Not Compute by Steve Talbot. Obviously, these books show infinitely more grace than the Unabomber's crude, coercive manifestos, but they all reject, to varying degrees, the movement of life into electronic environments. [8]

These critics tend toward what I call "na•ve realism." Many na•ve realists take reality to be that which can be immediately experienced, and they align computer systems with the corporate polluters who dump on the terrain of unmediated experience. The elaborate data systems we are developing still exist outside our primary sensory world. The systems do not belong to reality but constitute instead, in the eyes of the naive realist, a suppression of reality. The suppression comes through "the media," which is seen to function as vast, hegemonic corporate structures that systematically collect, edit, and broadcast packaged experience. The media infiltrate and distort non-mediated experience, compromising and confounding the immediacy of experience. Computers accelerate the process of data gathering, and threaten further, in their eyes, what little remains of pure, immediate experience. The na•ve realist believes that genuine experience is as endangered as clean air and unpolluted water.

The purity of experience was defended by the New England transcendentalists in nineteenth-century America. Thinkers like Henry David Thoreau, backed by the publicity

skills of Ralph Waldo Emerson, proclaimed a return to pure, unmediated experience.[9] Thoreau left city life to spend weeks in a rustic cabin in the woods at Walden Pond near Concord, Massachusetts so he could "confront the essential facts of life." Far from the social and industrial hubbub, Thoreau spent two years contemplating the evils of railroads and industrialization. Although railroad tracks and freeways now circumscribe Walden Pond, many contemporary critics, such as Wendell Berry, seek to revive the Thoreauvian back-to-nature ethic and take up the cause represented by his Walden retreat.[10]

In the eyes of the naive realist, computer networks add unnecessary frills to the real world while draining blood from real life. Reality, they assert, is the physical phenomena we perceive with our bodily senses, what we see directly with our eyes, smell with our noses, hear with our ears, taste with our tongues, and touch with our own skin. From the standpoint of this empirically perceived sensuous world, the computer system is at best a tool, at worst a mirage of distracting abstractions from the real world. The mountains, rivers, and great planet beneath our feet existed long before computers, and the naive realist sees in the computer an alien intruder defiling God's pristine earth. The computer, say the naive realists, should remain a carefully guarded tool, if indeed we allow computers to continue to exist. The computer is a subordinate device that tends to withdraw us from the primary world. We can and should, if the computer enervates us, pull the plug or even destroy the computer.

The naive realist speaks from fear. There is fear of abandoning local community values as we move into a cyberspace of global communities. There is fear of diminishing physical closeness and mutual interdependence as electronic networks mediate more and more activities. There is fear of crushing the spirit by replacing bodily movement with smart objects and robotic machines. There is fear of losing the autonomy of our private bodies as we depend increasingly on chip-based implants. There is fear of compromising integrity of mind as we habitually plug into networks. There is fear that our own human

regenerative process is slipping away as genetics transmutes organic life into manageable strings of information. There is fear of the sweeping changes in the workplace and in public life as we have known it. There is fear of the empty human absence that comes with increased telepresence. There is fear that the same power elite who formerly "moved atoms" as they pursued a science without conscience will now "move bits" that govern the computerized world. By voicing such fears, the naive realist sounds alarms that contrast sharply with the idealistic good cheer of futurists like Alvin and Heidi Toffler.

Naive Realists vs. Network Idealists

Futurists describe and advise a culture shaken by future shock. But the shock they describe comes in macro-economic waves, not in personal, existential distress. In this sense, futurists like the Tofflers or George Gilder are idealists.[11] Idealists take the measure of individuals by placing them within the larger economic or political contexts to which they belong. Most futurists look to the economically and politically global, not to the individually existential. Their big idea absorbs individuals. The "digerati" celebrated by Wired magazine welcome the digital revolution and offer a central warning: you had better join soon now or be crushed by the wheels of history.[12] Many of the celebrated digerati come from institutions of technology that are dedicated to advance the cybernetic control systems of society. Such institutions came to prominence not by educating through the liberal arts but by subordinating education to the advancement of government-sponsored technical research. When the Toffler writes about a "power shift," he uses a prophetic style that underlines the assumptions of the power group to which his futurist rhetoric belongs. Drowning the individual in the "waves" of social development has been a consistent theme in the history of idealism, from the conservative F. H. Bradley in England to the liberal-monarchic idealism of Hegel in Germany.[13]

Such idealism goes back to the early pioneers of computing. Seventeenth-century rationalists like Gottfried W. Leibniz and René Descartes pushed computation and mathematical physics far ahead of ethics and feelings. The Cartesian revolution in philosophy put mathematical physics at the top of the list of priorities while ethics became the incidental victim of skeptical reasoning. The Cartesian faith in progress relied on the reduction of thinking to systems of rational logic. So great was the optimism of 17th-century rationalists that they became easy targets for satirists like Voltaire, the French philosopher and writer whose works epitomize the Age of Enlightenment. In his novel Candide (1759), Voltaire caricatured Leibniz in the character of Professor Pangloss. Pangloss's tortured young student Candide meditates: "My Master said, 'There is a sweetness in every woe.' It must be so. It must be so."[14] The idealist points to evolutionary gains for the species and glosses over the personal sufferings of individuals. Idealists are optimists, or, on bad days, they are happy worriers. The optimist says, "This is the best of all possible worlds, and even the pain is a necessary component." In the eyes of naive realists, the idealist is selling snake oil. No accident that Leibniz, who was caricatured in Pangloss, was none other than the same Leibniz who worked on the proto-computer and pioneered the binary logic that was to become the basis for computers and digital culture.

The cyberspace backlash strikes at idealistic-futurist flimflam as much as it reacts to felt personal-existential changes. Postmodern theory, with its often glib talk of "cyborgs," "software cities," and "virtual communities," provokes its opponents by flashing a brand of intellectually sophisticated terror. Postmodern rhetoric, lacking a compassionate basis in shared experience and common practices, aims to frighten the insecure and to train commandos who attack common sense. After all, linguistics, semiology, and structuralism combined to make it virtually impossible to see language as anything but code or system, never as a living event through which we are each responsible to one another. Since Ferdinand de Saussure**,** the communicative power of

language, its ability to build community, became suspect to the point of ridicule for sophisticated theoreticians.[15]

And what of those who ignore the theoreticians, and insist on building a community around the new words, the new structures thrown up by the computer's wake? There is, of course, a certain jaded idealism that also enjoys poking common sense in the eye with hot purple hair, revolutionary verbiage, and cyberpunk affectations. A cyber-vocabulary promotes confusion as a fashion statement. Wave the banner of confusion, however, and you provoke a return to basics. Naiveté then seems a blessing. Yet the dialectical story does not end so simply, because the futurist vision is not without cogency. What the futurist sees is precisely what frightens others.

Nerds in the Noosphere

The futurist sees the planet Earth converging. Computer networks foster virtual communities that cut across geography and time zones. Virtual community seems a cure-all for isolated people who complain about their isolation. Locked in metal boxes on urban freeways, a population enjoys socializing with fellow humans through computer networks. Shopping, learning, and business are not far away once we enhance our telepresence abilities. The prospect seems so exciting that you see the phrase "virtual communities" mentioned in the same breath as McLuhan's "global village" or Teilhard's "Omega Point."

Pierre Teilhard de Chardin, the French Jesuit paleontologist, envisioned the convergence of humans into a single massive "noosphere" or "mind sphere" (Ionian Greek "noos" = mind).[16] This giant network would surround Earth to control the planet's resources and shepherd a world unified by Love. Teilhard's catholic vision ranged from evolutionary physics to world religion (though his views received more suspicion than support from Church orthodoxy). He saw in the physical world an inner drive for all

substance to converge into increasingly complex units. Material atoms merge to create higher-level units. Matter eventually converges to form organisms. The convergence of organic life in turn produces higher level complexities. The most complex units establish a new qualitative dimension where consciousness emerges. On the conscious level, the mind — and then the networking of minds — gives birth to a new stage of spirit. As in Hegel's nineteenth-century philosophy, Teilhard sees the birth of spirit as the inner meaning or cosmic purpose of the entire preceding evolution. Convergence toward greater complexity, even on the sub-atomic material level, exemplifies the principle of Love (agapic rather than erotic love). Only later, with the dawn of intelligence, does Love come into full consciousness and self-awareness. For Teilhard, this is the Christ principle that guides the universe. "In the beginning was the Logos." Only at its culminating point does history reveal its full meaning as the mental sphere becomes dominant. Teilhardians see ultimate convergence as the Omega or End-Point of time, the equivalent of the Final Coming of Christ.

Teilhard, like Marx before him, absorbed much about evolutionary dynamics from Hegel, the father of German Idealism. Hegel's centrality to the discourse of Western philosophy is such that his work on the dialectic deserves another telling in this context. Hegel applied the Christian notion of Divine Providence to the recorded events of civilized history in order to show a rational progression. Hegel's elaborate encyclopedias and multi-volume histories of Western civilization affirmed a hidden evolutionary will driving with purpose towards a single culmination. The fulfillment of history, according to Hegel, was a unity harmonized in diversity, a oneness which later interpreters described as a "classless society" (as with Marx) or as "social progress" (as with William Torrey Harris and the American Hegelians).[17]

Hegel's genius was to see a divine Idea unfold in the material world of historical events — even to the point of squeezing all recorded history into a Procrustean logic of

progress. The famous "Hegelian dialectic" changed from its original meaning of logical conversation to its new meaning of social movements and improvements. The motor that powered the movement of history was a series of internal civil wars, each bringing the entire society a little closer to perfection. The culmination of all revolutions, for Hegel, produced Western constitutional democracies where the individual and the individual's rights are recognized by the social collective. Just what this heavenly harmony looks like in practice appeared differently to the various proponents of Hegelian idealism. While Marx's advocates dressed in the worker's garb of political economy or in the revolutionary's guerrilla fatigues, Teilhard's vision blended synthetic physics with Christian communitarianism. It is especially the communitarianism that attracts network idealists.

This link between the communitarian impulse and the cult of technology may seem incongruous at first glance, but we must not forget that the organized, durational community is itself a by-product of agricultural technology, of the development of machines. At first, and for millennia, machines functioned as stand-alone tools under supervision by a single human operator -- the hoe, the plow. With larger -scale projects and manufacturing, machines increasingly functioned in an ensemble -- the mill, the boatyard. The shift from the machinery from isolated work tools to the components of larger systems becomes one of the defining characteristics of the industrial era, with railroads, fuel distribution, and highway systems being the obvious examples. The interconnection of one machine to another extended into the sphere of human society and cultural production with networks: first radio, then television, and now computers. The recent convergence of all three media has created a situation in which a vast variety of machines plug into seemingly limitless networks, all with the computer as the controller switch.

The network idealist builds collective bee-hives. The idealist sees the next century as an enormous communitarian buzz. The world-wide networks that cover the planet form a global bee-hive where civilization shakes off individual controls and electronic life steps out on its own. In that networked world, information circulates freely through the planetary nervous system, and intellectual property vanishes as a concept. Individuals give and take freely. Compensation is automated for the heavenly, disembodied life. Electronic angels distribute credit. Private territory and material possessions no longer divide people. Digital mediation does away with the battle of the books, and proprietary ideas give way to free exchange and barter. Cooperative intelligence vanquishes private minds. Extropian idealists (who define themselves as the enemies of entropy) encourage their members to entrust their deceased bodies to cryonic storage until scientists can one day either revive the repaired body or upload the brain-encased mind into silicon chips. The Teilhardian Internet is optimism gone ballistic.

Realists remain unimpressed. They are uneasy with the idealists who celebrate an electronic collective. I know people in rural communities who hear wishful thinking in the phrase "virtual community." It sticks in their craw. For many, real community means a difficult, never-resolved struggle. It is a sharing that cannot be virtual because its reality arises from the public places that people share physically — not the artificial configurations you choose but the spaces that fate allots, complete with the idiosyncrasies of local weather and a mixed bag of family, friends, and neighbors. For many, the "as-if community" lacks the rough interdependence of life shared. And here is where the naive realist draws the line. The direct, unmediated spaces we perceive with our senses create the places where we mature physically, morally, and socially. Even if modern life shrinks public spaces by building freeways, and even if the "collective mind" still offers much interaction amongst individuals through computers, the traditional meeting places still foster social bonds built on patience and on the trust of time spent together. Here is the bottom line for realists.

No surprise, then, for realists when they hear the Internet Liberation Front is bringing down the Internet's Pipeline for six hours, when Anti-Semitic hate groups pop up on Prodigy, when Wired magazine gets letter-bombed, or when Neo-Nazis work their way into the German Thule Network. The utopian communitas exists as an imagined community, as the Mystical Body. Real community exists, on the contrary, where people throw their lot together and stand in face-to-face ethical proximity. Computer hardware may eventually allow us to transport our cyberbodies, but we are just learning to appreciate the tradeoffs between primary and virtual identities. Put the New Jerusalem on hold until we phone security.

Reclaiming the Idea of Dialectic

Both network idealism and naive realism belong to the cyberspace dialectic. They are two sides of the same coin, binary brothers. One launches forth with unreserved optimism; the other lashes back with a longing to ground us outside technology. Some enthusiastically embrace the commercial development of the Internet, while others vehemently oppose it. While everyone agrees that information technology is transforming postmodern society, not everyone agrees that we can make any sense out of the transformation at the present moment. A third group insists that cyberspace is going through a confusing birth process, like every other important earlier technology, and they believe that all attempts at understanding the process, no matter how intelligent, remain pointless. This third group regards the cyberspace dialectic as irrational guesswork and hyperbole. All bets are off, as far as they are concerned. They support their skepticism by pointing to the past histories of other media like television and film, illustrating their viewpoint with the scribblings of critics of yore who attacked prior technologies but whose screeds are now amusing because they failed utterly to understand how future history would choose to use the technology.[18] This skeptical view results in a let's-wait-and-see attitude because rational criticism has, according to this view, never worked in

the past. Such skepticism kills dialectic by rejecting social evaluation as baseless futurism.

Skepticism cannot guide us through a dialectical situation. We must make some sense of the future as we make decisions in the present. Cyberspace is contested territory, and those who reject the contest will not meet the challenge of the present. The battle between the telecommunications legislators and the Electronic Frontier Foundation confirms the fact that cyberspace is contested territory.[19] The cultural struggle over cyberspace signals the need to re-think dialectic so that we can enter it properly.

The cyberspace debate reveals a subtle ground swell presaging the pulse of the next century. Some historians, in fact, gauge the twentieth century as one of the shorter centuries, one of those epochs that ends before its official centennial birthday. Some historians mark the end of the twentieth century with the 1989 fall of the Berlin Wall. Many historians count the advent of personal computers and world-wide information systems among the causative factors leading to the overthrow of Marxist Leninism and the changes in world history that are ushering in the twenty-first century.

If Marxism has expired as a political and economic model, its characteristic dialectic has evinced an intellectual afterlife in the work of German-influenced French thinkers and their American disciples. From structuralism to semiotics to hermeneutics to poststructuralism and deconstruction, the dialectic of Marxism persists as an unspoken model of how correct-thinking and post-modern people should regard society. Critical theory has often been just another name for Marxisian analysis incognito. Through virtuoso verbalism, critical theory often refuses to submit its covert social assumptions to clear argumentation. Earlier variants — the Frankfurt School with Max Horkheimer and Theodor Adorno's "negative dialectics,"[20] and Juergen Habermas' theory of ideal communication[21] — were willing and able to address their Marxian roots. When Horkheimer and Adorno spelled out what they called the “dialectic of the

Enlightenment," or Herbert Marcuse continued their work by advocating the "No" or Great Refusal ("drop out") in the face of the industrial-technological system, they were engaged in an avowedly Marxian critique of the West's capitalist society.[22] But the obscurantism of recent French theory conceals under its narcotic smoke-screen a whole host of Marxist assumptions about social revolution that do not spell their meaning clearly in this era of information.[23] We need to know more explicitly what kind of dialectic we move in, if we are moving in a dialectic at all. Once the dialectic no longer swings between the socially oppressed and the power of big capital, we must ask where and how dialectic comes into play. If our social developments begin to manifest outside of the mode of material production, what does the mode of information mean for social change?

We keep returning to the same core questions: What is dialectic? How does the dialectic apply to the struggle over cyberspace? While we definitely need to recognize the cyberspace dialectic, we do not want a replay of the violent civil wars that attach to Marxist dialectical materialism. Perhaps we need to return to the earliest incarnation of the dialectic, starting with its appearance in the Dialogues of Plato, which are actually the Dialogues of Socrates written down and polished by Plato (with "dialogue having its root in the Greek dia logou, or "through words or argument"). The dialectic -- the "working through words or argument" of the dialegesthai -- was an integral part of Plato's Dialogues. Dialectic refers to the logical side of what occurs in the Dialogues. Dialectic emphasizes the oppositions found within dialogue. Dialogues between people achieve more than mutual recognition and shared feelings; dialogues also expose conceptual and attitudinal differences as they apply to the issues under consideration. The interplay of differences about issues constitutes the original meaning of dialectic. It is this meaning of dialectic — an ongoing exchange between polar positions — that I wish to emphasis for and in cyberspace.

You could say, then, that dialectic is the conceptual exchange that happens in dialogue. Dialogues can contain banter, jokes, irony, and shared feelings, but any serious, sustained dialogue will sooner or later reveal a dialectic in play. Dialectic is the inner logic of differences exposed over an extended period of interchange. We should not, in other words, associate dialectic exclusively with conflict and flat-out contradiction. Dialectic comes from human differences as they become articulate — not from the confrontation that breeds revolution and civil war. What more fitting support to dialectic could we have than the technological medium we call cyberspace?

Hegel would have appreciated a mutual opposition while betting on an eventual synthesis. Right now, a cyberspace synthesis is not in sight, certainly not in the near future. But a collision or collapse of one of the sides may not be the only end point to look for. We may have to learn to live with the dialectic as the art of permanent exchange. We might learn to balance the idealist's enthusiasm for computerized life with the need to ground ourselves more deeply in the felt earth that the realist affirms to be our primary reality. This uneasy balance I have elsewhere called "virtual realism."[24] Virtual realism is the middle path between na•ve realism and network idealism. On the middle path, the dialectic becomes electric. The cyberspace dialectic sustains opposition as the polarity that continually sparks the dialogue, and the dialogue is the life of cyberspace.

Virtual Realism

Virtual realism walks a tight rope. The delicate balancing act sways between the idealism of unstoppable Progress and the Luddite resistance to virtual life. The Luddite falls out of sync with the powerful human push that has been promoting rationality for three centuries and that now seems ready to either blossom or blow up in the next century. The Idealist falls for the Progress of tools without content, of productivity without satisfaction, of ethereal connections without corporeal discipline. Both

inclinations — naive realism and futurist idealism — belong to the current of our time. The long thin rope stretches across the chasm of change and permits no return. Indifferent standstill is even more dangerous. The challenge is not to end the oscillation between idealism and realism but to find the path that goes through them. It is not a synthesis in the Hegelian sense of a result achieved through logic. Nor is it a synthesis arising from the warfare of the two sides. Rather, virtual realism is an existential process of criticism, practice, and conscious communication.

What is the path of virtual realism? Virtual realism parts with realism pure and simple. Realism often means lowered expectations. "Being realistic" often implies reducing or compromising ideals. Historically, in fact, realism often follows periods of high idealism. The pendulum swings back because it had swung so high in the first place. No movement of history begins, however, without an initial affirmation, without a first postulate affirming that it has cleared the mist and found reality. Realism begins as a sober criticism of overblown, high-flown ideals. Yet at the core of realism is an affirmation of what is real, reliable, functional. Today we must be realistic about virtual reality, untiringly suspicious of the airy idealism and commercialism surrounding it, and we must keep an eye on the weeds of fiction and fantasy that threaten to stifle the blossom. At the same time, we have to affirm those entities that VR presents as our culture begins to inhabit cyberspace.[25] Virtual entities are indeed real, functional, and even central to life in coming eras. Part of work and leisure life will transpire in virtual environments. So it is important to find a balance that swings neither to the idealistic blue sky where primary reality disappears, nor to the mundane indifference that sees just another tool, something that can be picked up or put down at will. The balancing act requires a view of life as a mixed bag, as a series of tradeoffs that we must first discern and then evaluate. Balancing means walking a pragmatic path of involvement and critical perception.

In Electric Language: A Philosophical Study of Word Processing, I developed a theory of cultural tradeoffs as they happen during ontological shifts.[26] There I describe in detail the tradeoffs between the computerized and the traditional ways of doing things. For Electric Language, this meant the specific tradeoffs between electronic and printed texts. The method used was phenomenology, a way of describing the first-person modes in which we read and write, specifically to contrast reading and writing with computers and with traditional books. Such descriptions highlight the psychic frameworks of two very different modes of reading and writing — not from the viewpoint of economic, or social, or legal products but from the viewpoint of living through the activity itself.

These tradeoffs belong to what I called "the ontological shift." This ontological shift has been referred to by others in shorthand as a move from "managing atoms to managing bits." But I would argue against this pat reduction. Our practical use of symbols never did move in the element of atoms, for atoms are scientific abstractions. The abstractions of science about the atomic level have had, of course, an enormous impact on history, but that impact came not from a change at the core of culture but from the pressure that bore down on the surface of politics, warfare, and energy production. Culture only slowly took into account the atomic age. Atoms are abstractions, just as bits and bytes are abstractions. But while bits and bytes abstract from a computational process, they touch information, and information reaches to the core of culture.

The ontological shift described in Electric Language occurs in what I called "the tectonic plates of culture," the unnoticed cultural element that supports — at different times in different ways — the symbols of language. No longer papyrus or paper, the new element is digital information. The element belongs to the psychic framework of life, not to the abstractions of physics or the sciences. The symbol element is where much of practical culture transpires. It is where we store our memory, where we record our history, and where the sacred things are preserved. Most important to virtual realism is

the sense of history behind the ontological shift. We need the large perspective on cultural change and the way symbolic elements mutate in history. The big picture is crucial for virtual realism, for only from that broad perspective can we envision the tradeoffs that occur in historical drift.[27]

An important component of virtual realism is what I call technalysis. Technalysis — as the term suggests — is the analysis of technologies, and the analysis proceeds from a critical but practical standpoint. It is a critical strategy for describing specific technologies, a style of thinking appropriate for the walking the fissures of a culture in transition. Technalysis accepts the ontological fact that we move in a new layer of electronic reality. In the technologized West, fewer and fewer discussions or oppositions occur without leaving traces in cyberspace. Today, the Unabomber's fans as well as the network idealists meet online. The dialectic of cyberspace is happening in cyberspace. This dialectic, if sustained, can become technalysis, a new kind of social self-awareness. Whether right or wrong in its conclusions, each attempt at technalysis brings to language the human encounter with specific technologies. Detailed analysis of specific technologies has major advantages over the wholesale rejection of technology found in writers from Ellul and Baudrillard to the Unabomber. The wholesale suspicion of technology as a monstrous Leviathan supposes that we can extricate ourselves sufficiently from automobiles, telephones, and computers in order to arrive at a negative assessment and eventual disengagement. The suspicion directs its gaze at a monster whose features must remain vague and remote. Fear of the giant technology monster blinds the critic from seeing detail in daily life as we install technologies and as we install ourselves into technological environments. Blind to details, such critics close off the possibility that their analysis might contribute something of value to the concrete planning of future systems. Instead, they must maintain a posture of hostility — a posture which requires considerable effort but which delivers no constructive dividend.

The advantage of technalysis — the detailed phenomenology of specific technologies — resides in its working alongside "human factors" engineering, which, however remote from its participants, places the human being at the center of technology.

Virtual realism, then, seeks to support the cyberspace dialectic as an ongoing exchange, as a mutual penetration of the opposite poles of discussion. Virtual realism meets destiny without being blind to the losses of progress. It strives to enrich the unfolding future from a personal standpoint by referring to moments when we have been at our best. It explores the need to ground ourselves in the earth Ñ not naively, but in a way that draws on the growing knowledge we are obtaining from a global garden of human practices, from the body energy cultivation of Taoism and Yoga to the new Green Therapy that insists on our spending time outdoors. As we look beyond alphabetic writing, increasingly away from symbolic processes and towards virtualized processes, our path must be one of virtual realism.

Endnotes

[1] William Gibson, Neuromancer (New York: Ace Books, 1984) and Michael Benedikt, ed., Cyberspace: First Steps, (Cambridge, Massachusetts: MIT Press, 1991).

[2] At press time, the Unabomber is alleged to be Theodore J. Kaczynski, a Montana recluse who once taught Mathematics at the University of California, Berkeley. The merits of my arguments are predicated on a different set of criteria than any adjudication of this particular case. To browse the many variants of the Unabomber Manifesto, the reader can begin at the Yahoo Internet site (www.yahoo.com) and look under "Society and Culture." Then click on "Crimes" and "Homicides," then on "Serial Killers," under which is "Unabomber" and "Unabomber Manifesto." Along the way, the reader will also find many satirical and not-so-satirical Web sites devoted to the mythos of the Unabomber.

[3] The Unabomber Manifesto appeared in the Washington Post on September 19, 1995. The name "Unabomber" came from the Federal Bureau of Investigation code for "university - airlines bomber," since the majority of the twenty-three bomb targets were people who worked at universities or traveled the airlines.

[4] See Jacques Ellul, The Technological Society, transl. John Wilkinson, (New York: Vintage, 1967, c1964).

[5] Unabomber's Manifesto, "Industrial Society and its Future,Ó paragraph 178. The paragraph numbering I use belongs to the CoE/Bono version, revision 2, which corrects most, if not all, of the known errors in the Washington Post version, including the omission of paragraph 116. The CoE/Bono version is on the Web in a hypertext version at www.envirolink.org/orgs/coe/resources/fc/unabetoc.html. A search via Yahoo will turn up several other versions.

[6] See Mark Poster's perceptive treatment of Baudrillard in chapter 6 of Poster's The Second Media Age (Cambridge, MA: Blackwell, 1995), pp. 95-117.

[7] I am using the term "media" here as a kind of shorthand for an admittedly vast segment of society often at odds with each other, and sometimes even with themselves.

[8] James Brook and Iain Boal, Resisting the Virtual Life (San Francisco: City Lights Books, 1995).Kirkpatrick Sale, Rebels Against the Future: The Luddites and Their War on the Industrial Revolution (Reading, Massachusetts: Addison-Wesley, 1995).Douglas Rushkoff, Media Virus (New York: Ballantine Books, 1994).Arthur Kroker and Michael W. Weinstein, Data Trash (New York: St. Martin's Press, 1994).Clifford Stoll, Silicon Snake Oil: Second Thoughts on the Information Highway (New York: Doubleday, 1995).Bill McKibben, The Age of Missing Information (New York: Plume, 1992).Sven Birkerts, The Gutenberg Elegies (Boston: Faber & Faber, 1994).Mark Slouka, War of the Worlds: Cyberspace and the High-Tech Assault on Reality (New York: Basic Books, 1995).Stephen L. Talbott, The Future Does Not Compute: Transcending the Machines in Our Midst (Sebastopol, California: O'Reilly & Associates, 1995).

[9]Thoreau spent two years on the shore of Walden Pond (1845-1847). His essays on the topic appear in his book Walden (1854).

[10] See Wendell Berry, A Continuous Harmony: Essays Cultural and Agricultural (New York: Harcourt Brace Jovanovich, 1970).

[11] See George Gilder, Microcosm (Simon and Schuster: 1990).

[12] See Alvin Toffler, Powershift: Knowledge, Wealth, and Violence in the 21st Century (New York: Bantam Books, 1990).

[13] See F.H. Bradley, Ethical Studies (Oxford: Oxford University Press, 1926, orig. 1876).

[14] This line actually comes from the libretto to Leonard Bernstein's musical version of Voltaire's Candide. The libretto was put into lyric verse by the poet Richard Wilbur.

[15] Ferdinand de Saussure, Course on General Linguistics, trans. Wade Baskin (New York, McGraw Hill, 1966, orig. 1915).

[16] See The Future of Man by Pierre Teilhard de Chardin, transl. Norman Denny, (New York: Harper & Row, 1964), and also The Phenomenon of Man, transl. Bernard Wall, (New York: Harper & Row, 1965, c1959).

[17] William Torrey Harris (1835-1909) was the American philosopher and Hegel translator who in 1873 established the first public-school kindergartens in the United States, later serving as U.S. commissioner of education from 1889–1906. Hegelians in St. Louis and in Ohio took seriously Hegel's view that the Absolute Spirit (citizenship under a free constitution) had emigrated from Europe to America. These social reformers rejected Marx's revolutionary violence while promoting public-spirited projects like national parks, public libraries, and the 1904 International Exhibition that invoked "the Spirit of St. Louis." See William H. Goetzmann (ed.), The American Hegelians: An Intellectual Episode in the History of Western America (New York: Knopf, 1973); Loyd

David Easton (ed.), Hegel's First American Followers: The Ohio Hegelians (Athens, Ohio: Ohio University Press, 1966); and Paul Russell Anderson's Platonism in the Midwest (New York: Columbia University Press, 1963). To understand the break between the Hegelians and Karl Marx, see Harold Mah's The End of Philosophy and the Origin of "Ideology": Karl Marx and the Crisis of the Young Hegelians, (Berkeley: University of California Press, 1987). Classic Hegelian idealism differs in its historical depth and breadth from the network idealism described in this paper. But that is another story in itself.

[18] When Old Technologies Were New: Thinking about Electric Communication in the Late Nineteenth Century by Carolyn Marvin (New York: Oxford University Press, 1988).

[19] The Electronic Frontier Foundation, founded July 1990, is a civil liberties advocacy group for the Internet (www.eff.org). It offers legal counsel for members of the online community regarding issues of privacy, intellectual property, and telecommunications legislation. The EFF sometimes joins with the American Civil Liberties Union in representing "netizens" involved in litigation.

[20] See Max Horkheimer and Theodor W. Adorno, Dialectic of Enlightenment, transl. John Cumming, (New York: Continuum Books, 1987, c1972). Also, Theodor W. Adorno, Negative Dialectics, transl. E. B. Ashton, (New York: Seabury Press, 1973).

[21] See Juergen Habermas, The Theory of Communicative Action, transl. Thomas McCarthy, (Boston: Beacon Press, c1984).

[22] See especially Herbert Marcuse, The Aesthetic Dimension: Toward a Critique of Marxist Aesthetics, (Boston: Beacon Press, c1978). See also Marcuse's Negations: Essays in Critical Theory, transl. Jeremy J. Shapiro (Boston: Beacon Press, 1968). For Marcuse's treatment of his roots in Marxian and Hegelian dialectic, see Reason and Revolution: Hegel and the Rise of Social Theory (London, New York: Oxford University Press, c1941).

[23] See Mark Poster's three studies:.Critical Theory and Poststructuralism: In Search of a Context, (Ithaca, New York: Cornell University Press, 1989); Existential Marxism in Postwar France: From Sartre to Althusser, (Princeton, New Jersey: Princeton University Press, 1975); and Foucault, Marxism, and History: Mode of Production Versus Mode of Information, (Cambridge and New York: Blackwell, 1984).

[24] Michael Heim, Virtual Realism (New York: Oxford University Press, 1997). Chapter Two takes up the idea of dialectic from another angle.

[25] I make the argument for virtual entities in cyberspace in Virtual Realism, op. cit. Here I want to emphasis the pragmatic nature of virtuality and of the status of virtual entities, because I base virtual realism on pragmatism as the middle between na•ve realism and network idealism.

[26] Electric Language: A Philosophical Study of Word Processing (New Haven: Yale University Press, c1987, rev. 1997); also for more on the notion of balance, see my The Metaphysics of Virtual Reality (New York: Oxford University Press, 1993).

[27] This essay is not the place to go further into these notions, and the reader can find in the first three chapters of Electric Language one approach to that larger history with its ontological shifts, op. cit.