# Information Technology and Internet Culture

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## ABSTRACT

This essay categorizes interpretations of the Internet as utopian, dystopian, or instrumental, and within each of these categories it distinguishes between "balance" and "inherence" views. A balance theorist assesses a technology by the ratio of positive to negative consequences of its use, whereas an inherence theorist finds a deeper source of evaluation in the technology itself. Sherry Turkle is interpreted as a balance utopian. Heidegger and his followers are understood as inherence dystopians. One strain of Marxist theory is construed as inherence utopianism. A case is made for inherence instrumentalism, following some suggestions in Robert Nozick's writing about a libertarian "meta-utopia." The Internet is a meta-technology. It can be morally evaluated by the moral features of what's done with it, but it is not inherently a thing to be judged in utopian or dystopian terms. It is suggested that this approach applies beyond the Internet to information technology generally.

## INTRODUCTION

The Internet is a magnet for many metaphors. It is cyberspace or the matrix, the ``information superhighway'' or infobahn or information hairball, a looking glass its users step through to meet others, a cosmopolitan city with tony and shady neighborhoods, a web that can withstand nuclear attack, electric Gaia or God, The World Wide Wait, connective tissue knitting us into a group mind, an organism or ``vivisystem,'' a petri dish for viruses, high seas for information pirates, a battleground for a war between encrypters and decrypters, eye candy for discrete consumers of a tsunami of pornography, a haven for vilified minorities and those who seek escape from stultifying real-world locales, a world encyclopedia or messy library or textbook or post office, chat "rooms" and schoolrooms and academic conferences, a vast playground or an office complex, a cash cow for the dot.coms, The Widow Maker, training wheels for new forms of delinquency practiced by script kiddies and warez d00des, a wild frontier with very little law and order, the glimmer in the eyes of virtual-reality creators, a workshop for Open Source programmers, a polling booth for the twenty-first century, a marketplace for mass speech, a jungle where children are prey, a public square or global village, a mall or concert hall, a stake for homesteaders, a safari for surfers, a commercial space much in need of zoning, the mother of all Swiss Army knives, a tool palette for artists, a lucid dream or magic, a telephone or newspaper or holodeck, a monster that has escaped DARPA's control, The Linux penguin, sliced bread, an addiction, the Grand Canyon, and on and on.

Before attempting to think through these metaphors, it is worthwhile to note at the outset that we ``netizens,'' or regular users of the Internet, are only a minority of our fellow citizens, even in societies that have passed through industrialization and are now exploring economies in which information technology has become central. There are important technical, moral, and political issues about conversion of this minority into a majority, including whether that would be a good thing, whether it is required by

fairness, how much priority should be given to information technology in developing countries especially relative to processes of industrialization, and so forth. It is clear however that desire for connection to the Net is not a minority taste, something only for a military or academic elite, but rather it corresponds closely to the enormous demand for the ubiquitous computer itself at every social level. So the prospect of a global electronic metropolis, in which citizens can reliably be expected to be netizens, is not an idle dream, or nightmare. The Internet is so new that we don't know yet whether it has an Aristotelian telos of some benign or malign nature, or whether instead it will always be a loose and disjointed Humean thing, evading every attempt to discern an underlying unity.

Although the Internet is bringing us together, it also keeps us apart in two general ways. First, time spent online is inevitably time spent in a greater or lesser degree of detachment from one's physical surroundings, including local others. Second, the connection to distant others is itself a form of detachment, as coolly a matter of business as online banking or as etiolated a form of sociability as a chat room. The major issue about the former is simply time management. Almost everyone has decided that local detachment is all right, because we do it when reading, watching television, listening to music, and so forth. But there are still questions about how Internet use will impact on these other forms of detachment, for instance in reading less or, worse, less well. The latter issue is more complex. Detachment from distant others can be valued for purposes of efficiency, as with banking, or because it affords anonymity to members of unpopular subcultures, as with some chat rooms, or because one happens to find that level of sociability to one's liking. There is not anything evidently wrong with any of this, putting criminal or pathological cases aside -- hacking into banks, planning terrorist attacks, escaping from life, and so on. Perhaps the major issue about online detachment will have to do with its transformation as more ``bandwidth'' gets piped into our ever more versatile computers, giving them audiovisual and even tactile powers to create experiences that are very different from invoking File Transfer Protocol from a command line to send scientific data from node A to node B.

The Internet is also changing us. Netizens are not the people they would have been in the absence of the computer revolution. At one level this is a truism: experiences change us. But many interpreters of postmodern culture, the culture of post-industrial societies particularly as influenced by information technology such as the Internet (and computers, CDs, etc.), detect a change in us that is understated even by emphasizing that our personalities have become different. Some of these interpretations are pretentious babble, including much theorizing that passes as postmodernist philosophy or psychology when it opines that there is nothing outside the text, that the self is an outmoded social construct, and so forth. Postmodernist theory should be sharply distinguished from postmodern culture. The latter, however it is to be characterized in detail, is a large social fact; the former, whether it is true or false or meaningful or nonsensical, is precisely a theory; one can be a participant in postmodern culture without espousing postmodernist doctrine. Interpretations of postmodern culture, including many insightful ones, point to the need for a theory of personhood and personal identity that does full justice to the changes in us, and gives us a way of thinking constructively about them. Many different disciplines, from philosophy to psychology, from linguistics to sociology, from anthropology to literary studies, should converge so as to develop such a theory.

The Internet is changing our relationship to nature, not only in the way that postmodernist theorists emphasize, by ``thickening'' the layers of images that

mediates our perception of the external world and our interactions with it, but also by starting to lessen the stress on nature caused by the technologies of the industrial revolution. The two are related. The thickened layers can include the images that constitute the emerging technology of teleconferencing, and the lessened stress, we have reason to hope, will take the form of reduced environmental damage causes by planes, trains, and automobiles; alternatives to fossil fuel will depend, either at the research stage or in implementation, on digital technology to harness the energy of the sun, the wind, hydrogen, and so forth. The layers can include the electronic paper that is clearly visible now on the technological horizon, and the relief for nature will be felt by our forests. The power of computer modelling should also be mentioned, a new way of representing the world that is proving its value for understanding, monitoring and controlling natural processes, from the human genome to the weather; it is changing the way traditional sciences are undertaken as well as birthing relatively new sciences such as cognitive psychology, artificial intelligence, and nanotechnology. These changes in the images or representations that we rely upon are introducing social changes as well, ranging from less reliance on the amenities of cities for educational and entertainment purposes, to new forms of populism as groups organize on the Internet despite lack of access to high-cost tools. The great engine of acculturation, schooling, is now producing generations for whom computer use is second nature, a presence in the classroom since the first year. This large fact presents a challenge to the existence of a ``mainstream culture,'' since this generation will be influenced by such various cultural forces that even the cultural fragmentation occasioned by the 500-channel television will only hint at the upshot. Let this thought be the background to the question whether the Internet and information technology not only are having impact on the larger culture, but also whether they have a culture of their own.

## Internet culture

Is there Internet culture, something more substantial than shared mastery of the email or chatroom ``smiley,'' or is that an oxymoron? Is the Internet a tool, or something more? Is the Internet improving education or corrupting it? Is the space of cyberspace a place to explore utopian possibilities, or a wrecking yard for traditional culture, or something as neutral with respect to questions of value as a screwdriver? These are some of the questions that a philosophy of Internet culture should address. The answers to be found in a large and diverse literature on the subject are classifiable as utopian, dystopian, or instrumental. A utopian view sees the Internet as good, perhaps profoundly so or at least good-on-balance. As dystopian, it is profoundly bad or at least bad-on-balance. And as instrumental, the Net is a tool, perhaps merely a tool or at least a tool that does not harbor profoundly good or evil values.

The notion of profundity in this trichotomy acknowledges the influence of Martin Heidegger on the philosophy of technology, especially his The Question Concerning Technology.[8] Many interpreters of the Internet have borrowed from him the idea that a technology can be inseparable from a value commitment. Heidegger would not have liked the term 'value'. In ``Letter on Humanism''[7] he writes, ``Every valuing, even where it values positively, is subjectivising. It does not let beings: be....the thinking that inquires into the truth of Being and so defines man's essential abode from Being and toward Being is neither ethics nor ontology.''[1, page 87] This essay returns to Heidegger under the heading of dystopian inherence, making the case that Heidegger's philosophy of technology does indeed betray a significant value commitment, contrary to its aim at something more profound, a commitment that undermines its authority as a model for understanding the Internet.

The general Heideggerian idea of a value inherent in technology is instanced in the statement that the high technology of factory farming, or ``agribusiness,'' is inseparable from a bad way of relating to nature, understanding it and treating it simply as something to be processed in wholesale fashion for satisfaction of human appetites. Heidegger's idea has been adopted mainly by dystopian theorists like his translator Michael Heim, who argues in The Metaphysics of Virtual Reality that the ``Boolean logic'' of the computer marks a ``new psychic framework'' that ``cuts off the peripheral vision of the mind's eye'' and generates infomania, as he indicates in the following passage.[9, pages 22, 25].

Note already one telltale sign of infomania: the priority of system. When system precedes relevance, the way becomes clear for the primacy of information. For it to become manipulable and transmissible as information, knowledge must first be reduced to homogenized units. With the influx of homogenized bits of information, the sense of overall significance dwindles. This subtle emptying of meaning appears in the Venn diagrams that graphically display Boolean logic.[9, page 17]

Heim's profound or inherence dystopianism may be contrasted with on-balance or or simply balance dystopianism, exemplified by Sven Birkerts' The Gutenberg Elegies: The Fate of Reading in an Electronic Age, and particularly by the cost-benefit analysis of the computer revolution that he provides in the following passage.

We can think of the matter in terms of gains and losses. The gains of electronic postmodernity could be said to include, for individuals, (a) an increased awareness of the ``big picture,'' a global perspective that admits the extraordinary complexity of interrelations; (b) an expanded neural capacity, an ability to accommodate a broad range of stimuli simultaneously; (c) a relativistic comprehension of situations that promotes the erosion of old biases and often expresses itself as tolerance; and (d) a matter-of-fact and unencumbered sort of readiness, a willingness to try new situations and arrangements.

In the loss column, meanwhile, are (a) a fragmented sense of time and a loss of the so-called duration of experience, that depth phenomenon we associate with reverie; (b) a reduced attention span and a general impatience with sustained inquiry; (c) a shattered faith in institutions and in the explanatory narratives that formerly gave shape to subjective experience; (d) a divorce from the past, from a vital sense of history as a cumulative or organic process; (e) an estrangement from geographic place and community; and (f) an absence of any strong vision of a personal or collective future.[2, page 27]

Note that the distinction between inherence and balance dystopians concerns the form of argumentation rather than conclusions about the technology, which may be similar. Heim would agree with Birkerts that, as the latter writes, ``We are at a watershed point. One way of processing information is yielding to another. Bound up with each is a huge array of aptitudes, assumptions, and understandings about the world.''[2, page 27] But Heim has an extra reason for that conclusion, the profound one about the ``infomania'' value inherent in the new technology.

Heidegger's idea, this extra reason, can be extended to utopianism. An inherence utopian about the Internet, on this extension, is one who believes that there is something good about it beyond a simple toting up of gains and losses. For instance, Wired magazine editor Kevin Kelly's Out Of Control: The New Biology of Machines, Social Systems, and the Economic World theorizes the Internet as a vivisystem, and

as such an instance of, in his words,

> [t]he overlap of the mechanical and the lifelike [that] increases year by year. Part of this bionic convergence is a matter of words. The meanings of ``mechanical'' and ``life'' are both stretching until all complicated things can be perceived as machines, and all self-sustaining machines can be perceived as alive. Yet beyond semantics, two concrete trends are happening: (1) Human-made things are behaving more lifelike, and (2) Life is becoming more engineered. The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being. What should we call that common soul between the organic communities we know of as organisms and ecologies, and their manufactured counterparts of robots, corporations, economies, and computer circuits? I call those examples, both made and born, ``vivisystems'' for the lifelikeness each kind of system holds.[11, page 3]

The inherent value for Kelly is the value of a vivisystem, as revelatory of a hidden connection between the natural and the mechanical. Kelly's focus on vivisystems is comparable to historian Bruce Mazlish's reconstruction of how we have overcome the fourth discontinuity, between ourselves and machines, the earlier discontinuities having been overcome when Copernicus showed that our earth was not the center of the universe, when Darwin showed that man did not have a privileged place in creation, and when Freud showed that our rationality is not so perfect as to set us apart from the other animals.[13] Kelly's vivisystems allow Mazlish's point to be put positively, in terms of continuity rather than discontinuity: The range of man-made and natural vivisystems reveals the continuity between ourselves and machines.

Vivisystems figure in the version of James Lovelock's Gaia Hypothesis that Kelly endorses. This is the hypothesis, that, in Lovelock's words, ``The entire range of living matter on Earth, from whales to viruses, from oaks to algae, could be regarded as constituting a single living entity, capable of manipulating the Earth's atmosphere to suit its overall needs and endowed with faculties and powers far beyond those of its constituent parts.''[11, page 83] (Kelly is quoting from Lovelock's The Ages of Gaia: A biography of our living earth.[12]) Although there may be controversy about whether Gaia is an organism, Kelly thinks there should be no doubt that, as Kelly writes, ``it really is a system that has living characteristics. It is a vivisystem. It is a system that is alive, whether or not it possesses all the attributes needed for an organism.''[11, page 84] Gaia is not only alive but it is coming to have a mind, thanks to the Internet and other networking technologies. Kelly makes the point in dramatic language.

> There is a sense in which a global mind also emerges in a network culture. The global mind is the union of computer and nature - of telephones and human brains and more. It is a very large complexity of indeterminate shape governed by an invisible hand of its own. We humans will be unconscious of what the global mind ponders. This is not because we are not smart enough, but because the design of a mind does not allow the parts to understand the whole. The particular thoughts of the global mind - and its subsequent actions - will be out of our control and beyond our understanding. Thus network economics will breed a new spiritualism.

Our primary difficulty in comprehending the global mind of a network culture will be

that it does not have a central ``I'' to appeal to. No headquarters, no head. That will be most exasperating and discouraging. In the past, adventurous men have sought the holy grail, or the source of the Nile, or Prester John, or the secrets of the pyramids. In the future the quest will be to find the ``I am'' of the global mind, the source of its coherence. Many souls will lose all they have searching for it - and many will be the theories of where the global mind's ``I am'' hides. But it will be a never-ending quest like the others before it.[11, 202]

It may be worthwhile to note in passing that Kelly's remark about the quest for the central ``I'' is no doubt laced in irony, since he subscribes to Dan Dennett's view that there is no such thing even in human beings, the sense of centrality that we experience being an illusory patina that overlays the brain's massively parallel distributed processing of information.[11, pages 42-3] Dennett presents this view in Consciousness Explained.

Another inherence-utopian vision incorporates the Internet's group mind as only a minor foreshadowing of an end-of-time God, intelligent life connected throughout the universe, as a result of colonization of space (and so forth). It will tap into the energy created by gravity's ``divergence towards infinity'' in the Big Crunch so as to reproduce all past experience in massive computations that generate the requisite virtual realities. Construing our brains as virtual reality generators themselves, these theorists prophecy that brains can be replaced by their Turing-machine essence: we will be brought back to life as programs suitable for generating the virtual-reality renderings that capture our lived experience, with the unpleasant bits trimmed away and desirable additions inserted, perhaps additions from program-based future societies, if we can tolerate the culture shock. The details can be found in Frank J. Tipler's The Physics of Immortality[18] and David Deutsch's The Fabric of Reality[4].

This much will serve to introduce a framework for understanding Internet culture and the theorizing that surrounds it: the utopian/dystopian/instrumental trichotomy and the balance/inherence dichotomy. The stage is set for a critical illustration of balance utopianism, in the next section; then inherence dystopian; and then inherence instrumentalism; and finally some concluding remarks, including some caveats and qualifications about the framework just bruited.

## Balance Utopianism

The advent of the Internet took Sherry Turkle by surprise. She had published The Second Self in 1984, describing the identity-transforming power of the computer at that stage of the computer revolution. Reflecting on her experience and the experience of others with the new Apple and IBM PC computers, She conceived of the relationship of a person to her computer as one-on-one, a person alone with a machine. By 1995, when Life on the Screen appeared, she was writing about something quite different, ``a rapidly expanding system of networks, collectively known as the Internet, [which] links millions of people in new spaces that are changing the way we think, the nature of our sexuality, the form of our communities, our very identities''[20, page 9].

Though Turkle speaks neutrally here of ``change'' in these matters, she fits into the ``utopian'' category of her trichotomy between utopian, apocalyptic, and utilitarian evaluations of the Internet. The computer is a new and important tool, most assuredly, but the Internet makes it ``even more than a tool and mirror: We are able to step

through the looking glass. We are learning to live in virtual worlds. We may find ourselves alone as we navigate virtual oceans, unravel virtual mysteries, and engineer virtual skyscrapers. But increasingly, when we step through the looking glass, other people are there as well"[20, page 9]. Whereas apocalyptic theorists diagnose stepping through the looking glass to cultural impoverishment or a new form of mental illness, Turkle theorizes the new experiences by reference to colonization of a new land.

This metaphor of colonization should be understood carefully, however, as she is not suggesting that Professor Sherry Turkle, sociologist and MIT professor, should be left behind in favor of a new life as the cybernaut ST on LambdaMOO. That suggestion comes from an extreme form of inherence utopianism about the Internet, or it is the equally extreme suggestion of inherence dystopian theorists, like Mark Slouka in War of the Worlds[17], who diagnose the Internet experience as equivalent to wholescale departure from everyday reality. More in Turkle's spirit is the thought that a new dimension of human life is being colonized, and although that raises a host of new issues about budgeting time and effort, and even about physical and mental health, Turkle is not proposing that it be undertaken in the spirit of these extreme forms of utopianism.

She does indeed characterize her colonists as ``constructing identity in the culture of simulation,'' in a cultural context of ``eroding boundaries between the real and the virtual, the animate and the inanimate, the unitary and the multiple self"[20, page 10], a context in which experiences on the Internet figure prominently but share a cultural drift with changes in art, such as the postmodern architecture that the cultural critic Frederic Jameson studies[10]; science, such as research in psychoanalysis and elsewhere inspired by connectionist models of the mind/brain; and entertainment, such as films and music videos in which traditional narrative structure is hard to discern. Constructing identity in the culture of simulation - our postmodern culture, as Turkle interprets it - involves two closely related ideas. First, there is the idea that we are newly aware of a rich continuum of states between the real and the virtual, the animate and the inanimate, the unitary and the multiple self. A boundary that may have been a sharp line is now a complex zone. For instance, a player who manipulates a character or avatar in an on-line virtual reality such as a MUD is distinctly located in that zone. By contrast, traveling to Rome or viewing someone's movie about Rome, even when doing so is ``virtually like being there,'' is safely on one side or the other of the real/virtual line, awakening no awareness of the zone being constructed and explored by Turkle's colonists.

Second, constructing identity involves something like the notion of a dimension as it was just introduced: Although Turkle is distinctly on the ``real'' side of the real/virtual continuum, she now builds her identity partially by reference to dimensions of herself that owe their existence to activity in the border zone. To the degree that MUDding is important to her, for instance, to that degree it is constitutive of who she is. This is a high-technology application of the general principle that we are self-defining creatures. It is not the idea that crossing the postmodern divide has somehow destroyed personal identity. Although some psychologists and sociologists adopt the conceit of speaking this way, it is no more than acknowledging the complexity of self-definition in modern society; or else this way of speaking falsely equates personal identity with a a soul-pellet or Cartesian Thinking Substance, in which case it is broadcasting the stale news that such conceptions of the self are largely discredited. Turkle discusses the phenomenon of Multiple Personality Disorder, and it may be that MPD is more common because of the stresses of modern life, and not because, say, the

medicalization of human experience leads us to find mental illnesses today that weren't there yesterday. But constructing identity is, and always has been, distinct from going crazy, even when the building material is a new high-tech dimension.

This is not to say that Turkle always gets this exactly right. Setting out some of her interviews with students who play MUDs, she writes that ``as players participate, they become authors not only of text but of themselves, constructing new selves through social interaction. One player says, `You are the character and you are not the character, both at the same time.' Another says, 'You are who you pretend to be.'" Analyzing these interviews, she continues, ``MUDs make possible the creation of an identity so fluid and multiple that it strains the limits of the notion. Identity, after all, refers to the sameness between two qualities, in this case between a person and his or her persona. But in MUDs one can be many"[20, page 12]. The short path out of these woods is to deny that a person and his or her persona are identical: you are not who you pretend to be, but rather you are pretending to be someone in such a way as to call upon your verbal, emotional, and imaginative resources to accomplish the pretense.

In order to attain further clarity here, it is helpful to distinguish morphing from playing multiple characters. Suppose that Smith, a MUD player, morphs from his character Mouse into his character Rabbit; he has changed the character name, description, and so forth, but it is still the same registered character. Now this is no more a puzzle about personal identity than Smith's wearing shoes by day and going shoeless at night. Wearing shoes and being shoeless are features of Smith: neither of them is him. Similarly, the Mouse dimension of his existence is a feature of him. Even if he defines himself by reference to this dimension, it does not exhaust what makes him, through time, the same person; including bodily continuity, memories, desires, character traits, and the like. Now consider not morphing but multiple characters. Instead of morphing from Mouse into Rabbit, Smith has two different avatars, Mouse and Rabbit, and he plays them at the same time: two registered characters. Is this a paradox or contradiction, like wearing shoes and being shoeless at the same time? Of course not, because playing two characters is like rubbing one's belly and patting one's head at the same time: a more or less difficult trick, but nothing paradoxical. To put this in a nutshell, there is no strain on the notion of personal identity when one bears in mind the difference between the 'is' of identity, as in Jean Chretian is [one and the same person with] the Prime Minister or Smith is the man next door, and the 'is' of predication of a feature, as in Smith is [exhibiting the feature of being] shoeless or Smith is Mouse.

One of Turkle's major themes is the transition from modern to postmodern culture, which she glosses as follows, beginning with a set of ideas that have come to be known as ``postmodernism."

These ideas are difficult to to define simply, but they are characterized by such terms as ``decentered," ``fluid," ``nonlinear," and ``opaque." They contrast with modernism, the classical world-view that has dominated Western thinking since the Enlightenment. The modernist view of reality is characterized by such terms as ``linear,"``logical," ``hierarchical," and by having ``depths" that can be plumbed and understood. MUDs offer an experience of the abstract postmodern ideas that had intrigued yet confused me during my intellectual coming of age. In this, MUDs exemplify a phenomenon we shall meet often in these pages, that of computer-mediated experiences bringing philosophy down to earth.[20, page 17]

It does so, Turkle suggests, because the transition from modernism to postmodernism, from the early post-WWII years onward, is paralleled in the world of computers from a culture of calculation to a culture of simulation. For those caught up in the war effort, like John von Neumann, the new computers were objects to calculate with, specifically to make the staggeringly complex calculations that would tell whether an implosion device would detonate an atomic bomb. Even the relatively carefree hackers at the MIT AI Lab in the fifties and sixties were privy to this culture, prizing what Turkle calls ``vertical'' understanding of the computer: understanding it all the way down from high-level programming languages to assembler to machine language, and wanting to know as well the engineering architecture of the hardware. (Hackers who loved to code but knew little about hardware were called ``softies.'') By contrast the consumer computers that were brought to the market in the mid-seventies to early eighties, first by Apple and then by IBM and many others, made computers accessible far beyond the military, industry, and academe. For Turkle the Apple MacIntosh's graphical user interface, as well as its presenting itself as ``opposed and even hostile to the traditional modernist expectation that one could take a technology, open the hood, and see inside''[20, page 35], are crucial developments, giving the computer massive popular appeal to many who preferred ``horizontal understanding,'' of an operating system's or an application's interface, surface over depth.

The power of the Macintosh was how its attractive simulations and screen icons helped organize an unambiguous access to programs and data. The user was presented with a scintillating surface on which to float, skim, and play. There was nowhere visible to dive.[20, page 34]

The massive growth of Internet culture, from its roots in the MIT/ARPANET connection and the UNIX/USENET connection, into the behemoth we see now, turned on the fact that a lot of people want to be pilots, not mechanics.

Turkle acknowledges that even her beloved Macintosh ultimately requires the skills and tools of modernist culture, but it strove to make these ``irrelevant'' to the user, and in this way ``the tools of the modernist culture of calculation became layered underneath the experience of the culture of simulation.''[20, page 34] This is an important point, and one that she may not have developed sufficiently. The culture of simulation requires a modernist spine. It requires technicians to keep its computer network running, for one thing, but it also needs inventors and theoreticians to explore its possibilities. More generally, it needs a background of a world that is external to its rapidly thickening layers of images and other representations, a world that is best disclosed by the sciences, in contradistinction to the postmodern conceit that there is nothing outside the text, that science is just one among many narratives in an anarchic cacophony, etc. Often enough to counsel attention, modernist values consort with plain truths. (This of course rejects the postmodernist theoretician's notion that truth reduces to what passes for true, which is a function of which community's values you subscribe to.) The plain truth of science's superior track record consorts with the modernist value that discerns a hierarchy in which science ranks higher than, say, wishful thinking in its power to reveal the nature of things. The plain truth that there is an external world consorts with the modernist value of depth, in this case a depth beyond our images, symbols, and other representations. The modernist value of prudence, of rational self-interest which gives equal weight to each moment of one's life, consorts with the plain truth about personal identity that I canvassed earlier. The value and the fact are not the same: one can grant that there is personal identity

through time and rational concern about it, without embracing the modernist conception of prudence that requires one to be a shepherd, so to speak, for a whole human life. For instance, it is not irrational, on certain conceptions of rationality, to severely discount one's distant future. But such conceptions aren't those that have had influence in building our senses of ourselves and our social institutions, like social and medical insurance. Those reflect modernist values.

Indeed, the point about postmodern culture requiring modernist spine rescues Turkle from a danger that is evident in passages like this one.

Fredric Jameson wrote that in a postmodern world, the subject is not alienated but fragmented. He explained that the notion of alienation presumes a centralized, unitary self who could become lost to himself or herself. But if, as a postmodernist sees it, the self is decentered and multiple, the concept of alienation breaks down. All that is left is an anxiety of identity. The personal computer culture began with small machines that captured a post-1960s utopian vision of transparent understanding. Today, the personal computer culture's most compelling objects give people a way to think concretely about an identity crisis. In simulation, identity can be fluid and multiple, a signifier no longer clearly points to a thing that is signified, and understanding is less likely to proceed through analysis than by navigation through virtual space.[20, page 49]

Granting Turkle what she says about these compelling objects, one still wants to ask: Whose anxiety, whose crisis? The answers to these questions refer to a unitary, centralized self: one person, not two, or a half. She writes about connectionist models of the brain, in which there is massively parallel processing in it, as though they were a challenge to the unitary self, but in fact they are challenges to other models of what maintains this unity. In the 19th century, for instance, some psychologists thought there must be a central chunk of the brain, or even an arch-brain-cell, to support the unity of the self. Before that, Descartes famously posited Res Cogitans, a non-physical thinking substance that trafficked with the brain via the centrally located pineal gland.

What's needed here, perhaps, is a distinction between personhood or selfhood, on one hand, and personality, on the other. Our personalities may be threatened with fragmentation by a postmodern world, but our selves are not mere cultural constructs, artifacts of a postmodern world. The distinction between self and personality is an aspect of the human ability to step back from one's personality or one's culture or one's time and place, and subject them to critique and scrutiny. (Science relies on such stepping-back from appearances.) For instance, I might step back from my fragmented personality and decide that I will simplify my life, removing some of the ``hats'' I wear, reducing the number of windows I ``cycle'' through, and so forth. Such stepping back is not an idiosyncracy of modern western culture. It can be detected even in societies where social roles are most coercively and ubiquitously imposed on the individual. To illustrate more or less at random, consider Clifford Geertz's quotation in Local Knowledge of a Dutch traveler's account of suttee in late 19th-century Bali, an account which includes a description of one of the dead king's wives, stepping back from social expectations for a moment before casting herself into the flames of his funeral bier.

## Inherence dystopianism

There is a built-in advantage to dystopian, skeptical visions of technological and cultural change: one won't be disappointed, except when opportunities are missed to turn back the clock, and such opportunities don't often come to philosophers, futurologists, and other Cassandras. Then there is the pleasant anticipation of being able to say some day, ``I told you so.'' Fear of change is an important motive as well, more so in some parts of the world, more so in some parts of academia and the literary world.

Is there a special reason to think that the computer revolution is implicated in a cultural disaster?

One possibility, recently discussed by Unix guru Bill Joy, is the prospect of nanotechnology creating self-reproducing ``nanobots'' that would feed endlessly on matter, relentlessly converting the Earth into ``gray goo.'' Joy's recommendation is that there should be legislative safeguards against pushing such dangerous technologies to their limit. Note that this does not require renunciation of computers and computer research. On the contrary, only those who know them very well can speak authoritatively about where the dangers are and where the limiting lines should be drawn. (The same kind of thing can be said about oil extraction and large-scale farming.) Meanwhile, with limits and safeguards in place, progress may continue. The changes that computers have wrought in work and leisure have been unquestionably positive, especially judging by the free choices of consumers. They want these changes in their lives, and the Heideggerian critique of instrumental use of nature is ultimately no reason to condemn these wants. It is indiscriminating in its blanket condemnation. It fails to identify what is distinctive about Internet culture, and what it has in common with other industrial and post-industrial technologies does not amount to an indictment. A piecemeal approach like Joy's, looking for specific signs of danger on the horizon, is to be recommended for reasons that will be touched upon in the concluding section.

A leitmotiv of some dystopian critique is a fallacy: an inference from features of computation to features of the media that the computation enables. Call this the Frame Fallacy, after the mistake of inferring from the fact that a movie is made up of discrete frames, to the conclusion that the experience of watching a movie is the experience of a series of discrete frames.

For instance, Fred Evans makes observations about the algorithmic character of computation and infers from this that computer scientists and cognitive psychologists are in league with technocratic bureaucrats who are concerned only with efficient administration. There are in fact two fallacies here. First, efficient administration with respect to programming might be put to the service of organizations that are devoted to human rights and opposed to technocratic manipulation of citizens. To suppose the contrary to is to make the simple Frame Fallacy. Additionally, Evans makes an unwitting philosophical pun -- a fallacy of equivocation -- on the term efficiency. The two fallacies blend in a spectacular howler.

Evans's Psychology & Nihilism: A Genealogical Critique of the Computational Model of Mind argues that ``technocratic rationality'' is a secret value presupposed by the computer model of mind, which he takes to be the model that defines cognitive science and cognitive psychology. His fear (``the crisis of modernity'') is that consciousness itself ``might be reduced to just those parameters necessary for the continued reproduction of restrictive and univocal social, cultural, and economic systems.'' [5, page 2] In this way the computer model of cognitive psychology ``serves

the interest of the new technocratic elite by emulating their style of thinking." [5, page 7] Assimilating us to machines, cognitive psychology implicitly denies those cultural values that affirm and celebrate life, and consequently it is ``nihilist''.

Evans' main argument is as follows.

Because we can precisely state its properties, we shall use the Turing machine as our formalization and the idealization of ``analytic discourse.'' Like analytic discourse, the Turing machine divides its subject matter into a set of discrete entities, maintains a strict separation between its program (language) and the domain over which it operates (the same program can imitate many different machines), adheres to an ideal of transparency in its code and in what it codifies, and subordinates its subject matter to the achievement of a preestablished goal that requires no change in the basic rules and symbols of the Turing machine's own program (the ideal of ``domination'' or ``administration''). For both analytic discourse and the Turing machine, the ideal is to transform everything into an ``effective procedure,'' and this is exactly the task of technocratic rationality. In more historical terms, the Turing machine transforms the ``clearness and distinctness'' dictum of Descartes into ``imitatable by the Turing machine.'' [5, page 64]

At bottom, this argument is a bad pun. Evans is equivocating on ``effective procedure'', between cost-effective administration, on one hand, and algorithm, on the other. It is the same sort of mistake as supposing that, since the Bank of Montreal and the bank of the Saskatchewan River are both banks, it must follow that they both make financial transactions. Effective procedures in the sense that interested Alan Turing are features of mathematical reasoning, not features of administration of people. Evans' mistaken inference from features of computation to features of the research communities that make use of them is egregiously abetted by his equivocation on ``effective procedure.''

Another example of the Frame Fallacy occurs when Heim argues, as noted in the introductory section, that the ``Boolean logic'' of the computer, which makes hyperlinks possible and facilitates searches on the Internet with engines like Google, transfers to the experience of using the computer, blocking the linear, contemplative path of traditional reading, for instance. That this is a fallacy is evident from the fact that the computer does not force the user to jump around in the manner that it enables. It is possible to go to a file or a web page and stay there for a linear path through a file or a web page. The emerging technology of ebooks is an excellent reminder of the capacity of information technology to absorb and transform the content of traditional media and the experience of that content. An ebook allows one to work through a novel in the time-honored way, while also offering helpful hyperlink technology so that the reader can quickly consult a dictionary or get background knowledge relevant to a passage one is reading. This is not to say that the computer revolution poses no threat to traditional reading. For one thing, information technology threatens its cultural hegemony, since computers and the Internet pose alternatives to reading books as a source of information, a form of entertainment, and so forth, and they challenge the status quo of the publishing industry and other social institutions that have grown up around the book. The centrality of books and the traditional publishing industry is giving way to the new ways of acquiring and disseminating information on the Net, including email, subscription lists, web pages, search engines and intelligent agents, and so forth. The experience of reading remains, but as transformed by text's

placement in a stunningly new context. With that caveat, however, features of the source code that underpins the Internet do not transfer to the experience of the Internet user.

## Philosophical Roots of Inherence Dystopianism

One reason to be wary of utopian or dystopian inherence theories is that they encourage a tendency toward blanket denunciation and renunciation of the Internet, or the blanket opposite, when what is needed is a piecemeal evaluation of this or that use of it, this or that tool that is enabled by the Internet meta-tool. A striking contemporary instance of the blanket approach is the Montana philosopher Albert Borgmann's position, in Holding On To Reality, that digitally generated information is incapable of making a positive contribution to culture, but on the contrary threatens to dissolve it, by introducing information as reality to compete with the picture of the world that is drawn from natural information (information about reality, as in weather reports) and cultural information (information for reality, as in recipes for baking things).

The technological information on a compact disc is so detailed and controlled that it addresses us virtually as reality. What comes from a recording of a Bach cantata on a CD is not a report about the cantata nor a recipe -- the score -- for performing the cantata, it is in the common understanding music itself. Information through the power of technology steps forward as a rival of reality.

Today the three kinds of information are layered over one another in one place, grind against each other in a second place, and are heaved and folded up in a third. But clearly technological information is the most prominent layer of the contemporary cultural landscape, and increasingly it is more of a flood than a layer, a deluge that threatens to erode, suspend, and dissolve its predecessors.[3, page 2]

This has led some disciples of Borgmann to eschew all digitally recorded music, insisting on listening only to live performances. Another example of inherence dystopianism leading to blanket evaluations is Neil Postman's Technopoly: The surrender of culture to technology, which indicts the United States as a ``technopoly,'' along with ``Japan and several European nations that are striving to become Technopolies as well.''[16, pages 48-9] A Technopoly does no less, according to Postman, than to eliminate

alternatives to itself in precisely the way Aldous Huxley outlined in Brave New World. It does not make them illegal. It does not make them immoral. It does not even make them unpopular. It makes them invisible and therefore irrelevant. And it does so by redefining what we mean by religion, by art, by family, by politics, by history, by truth, by privacy, by intelligence, so that our definitions fit its new requirements. Technopoly, in other words, is totalitarian technocracy.''[16, page 48]

An example of the wholesale approach on the inherence utopian side of the divide might be Dr. Timothy Leary's, expressed at a SIGGRAPH conference in Dallas in 1990, that this meeting was ``one of the most important meetings ever held by human

beings," because it would initiate a new stage of human evolution that would fulfill the telos of the generation he invited to ``tune in, turn on, and drop out.'' (In a similar vein, one of Turkle's interviewees confided to her, ``RL is just one more window, and it's not usually my best one.''[20, page 13]) A science journalist who attended the SIGRAPH meeting, Benjamin Woolley, wrily notes that Leary may well haveattended enough meetings by non-human beings to be in a position to make the comparison. And he quotes the ever-quotable John Perry Barlow as saying about Leary that he is the opposite of the coalmine canary; he is one that ``starts jumping up and down talking about how great the air is in here.''[21, page 12] Here, it may be assumed, is the virtual-reality replacement for the physical world.

An object lesson about the wholesale approach can be drawn from the father of dystopian theories of high technology, Heidegger. Setting out the lesson will take some time, but tracking Richard Bernstein's trenchant analysis will make for optimal brevity. In ``Heidegger's Silence?: Ethos and Technology'' Bernstein makes the case that the great German philosopher's brief but active support of Hitler and the Nazis, during the ten-month period when he served as Rector of the University of Freiburg between April 1933 and February 1934, is symptomatic of a philosophical failing that expresses itself in what he said and did before and after those ten months, notably in his silence about the Holocaust after the war, when there were no longer any serious doubts about the full horror of the Nazi regime. Bernstein begins by asking what ``the essence of the ethos'' is when, in ``Letter on Humanism,'' he writes, ``A saying of Heraclitus which consists of only three words says something so simply that from it the essence of the ethos immediately comes to light.''[1, page 87] The ethos is man's essential abode in nearness to Being, the original ethics as opposed to subjectivizing talk about value, and a place very different from the ``homelessness of contemporary man from the essence of Being,''[1, page 88] -- a homelessness that consists in the abandonment of Being by beings. It is with this ethos in mind that Heidegger writes, in ``Letter on Humanism,'' that ``the greatest care must be fostered upon the ethical bond at a time when technological man, delivered over to mass society, can be kept reliably on call only be gathering and ordering all his plans and activities in a way that corresponds to technology.''[1, page 89] Technological man makes the profound mistake of conceiving technology as ``something neutral,'' failing to notice the essence of technology that lies behind the technology. ``But we are delivered over to [technology] in the worst possible way,'' Heidegger writes in The Question Concerning Technology, ``when we regard it as something neutral; for this conception of it, to which today we particularly like to do homage, makes us blind to the essence of technology.''[1, page 91] This common instrumental or anthropological conception of technology is correct as far as it goes, but it is not true because it does not get at the essence of technology, and only the true (das Wahre, not das Richtige) can bring us into a free relationship to technology. In order to see what instrumentality actually is, we need to get at the primal meaning of causality, for our modern conception of causality is correct but not true. When we understand causality as the Greeks understood it, by reference to doctrine of fourfold material/formal/final/efficient causation, we will understand primal bringing-forth, poiesis, as revealing (das Entbergen), ``which comes to pass only insofar as something concealed comes into unconcealment.''[1, page 95] Heidegger tells us that the Greeks have the word alethia for revealing, and that we say ``truth'' and usually understand it as correctness of representation. Bernstein emphasizes that a major theme of Heidegger's thinking is to stress the difference between alethia as revealing or unconcealing and our modern conception of truth as ``correctness of representation.'' The Question Concerning Technology now pursues the revealing that is characteristic of modern technology:

What then is modern technology? It too is a revealing. Only when we allow our attention to rest on this fundamental characteristic does that which is modern technology show itself to us.

And yet the revealing that holds sway throughout modern technology does not unfold into a bringing-forth in the sense of poiesis. The revealing that rules in modern technology is a challenging [Herausforderung], which puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such.[1, page 98]

Agriculture is now the motorized food industry, he rues, a setting-in-order which sets upon nature, by contrast with the work of the peasant who does not challenge the soil of the field.

Now if modern technology is a way of revealing, what does it reveal?

What kind of unconcealment is it, then, that is peculiar to that which results from this setting-upon that challenges? Everywhere everything is ordered to stand by, to be immediately on hand, indeed to stand there just so that it may be on call for a further ordering. Whatever is ordered about in this way has its own standing. We call it the standing-reserve [Bestand][1, page 99]

Man is not part of standing-reserve, for he controls it, but he does not control the essence of technology that makes for this mode of unconcealment, but on the contrary this unconcealment determines what human activity has become in the modern epoch, and it even antedates technology itself, having mysteriously birthed modern science itself: ``Modern physics is the herald of enframing, a herald whose origin is still unknown.''

Heidegger can now ``name'' the essence of modern technology:

We now name that challenging claim which gathers man thither to order the self-revealing as standing-reserve: ``Ge-stell'' [enframing].

We dare to use this word in a sense that has been thoroughly unfamiliar up to now.[1, page 101]

This allows him to conclude that the ``correct'' or ``merely instrumental, merely anthropological definition of technology is therefore in principle untenable,'' for it conceals the essence of technology as a way ofrevealing.[1, page 102]

How should we respond to Gestell? It is not our fate; we are not trapped in it. But it is our destiny that enframing is our way of revealing. And although the destining of all ways of revealing, even poiesis, is a danger -- the danger, Heidegger says, ``Yet when destining reigns in the mode of enframing, it is the supreme danger (die höchste Gefahr).''[1, page 108] For it conceals all other modes of revealing. ``When enframing

holds sway, regulating and securing of the standing-reserve mark all revealing. They no longer even let their own fundamental characteristic appear, namely this revealing as such."[1, page 109] So is technological man, the laboring animal, ``left to the giddy whirl of its products so that it may tear itself to pieces and annihilate itself in empty nothingness,'' [1, page 109] as Heidegger writes in ``Overcoming Metaphysics''?[6] He thinks, citing the famous lines from Hölderin's Patmos,

But where danger is, grows
The saving power also

One is possibly saved from the giddy whirl by the ``ambiguous essence of technology.'' Although one can succumb to the supreme danger, one can alternatively reflect that the coming to presence of technology harbors in itself what we least suspect, the possible upsurgence of the saving power.[1, page 114] This will be to reflect on the ``original ethics,'' our ethos, dwelling, or abode. Then one can have a free relationship to Gestell, if one realizes that

There was a time when it was not technology alone that bore the name techne. Once that revealing which brings forth truth into the splendor of radiant appearance was also called techne....Once there was a time when the bringing-forth of the true into the beautiful was called techne. The poiesis of the fine arts was also called techne.[1, page 115]

Although one cannot simply turn away from modern technology, and though one cannot be saved by art as a ``sector of cultural activity,'' there may be redemption in poetic revealing if art can be what it was ``at the outset of the destining of the West, in Greece'' when ``the arts soared in the supreme height of the revealing granted them.''[1, page 116] The saving power is a fetching home, to ethos, where, as Hölderin's says again, ``poetically dwells man upon this earth.'' A free relationship to technology requires that one open oneself to the possibility that ``the frenziedness of technology may entrench itself everywhere to such an extent that someday, throughout everything technological, the essence of technology may come to presence in the coming-to-pass of truth.''[1, page 117] As for this opening of oneself, Heidegger asks: ``Could it be that revealing lays claim to the arts most primally, so that they for their part may expressly foster the growth of the saving power, may awaken and found a new vision of that which grants and our trust in it?''[1, page 117]

So much for Heidegger's philosophy of technology. Where does it go wrong? According to Bernstein's account of the link between his biography and his philosophy, Heidegger conceals and passes over in silence the importance for the Greeks, specifically Aristotle, of phronesis, the state of the soul that pertains to praxis. He refers to a discussion by Aristotle in Nicomachean Ethics that has ``special importance'', but his reference is partial and one-sided, bringing out the role of techne in relation to poiesis, as sketched above, but not tracking the full discussion, which Aristotle summarizes in the following passage.

Then let us begin over again, and discuss these states of the soul. Let us say, then, that there are five states in which the soul grasps the truth [aletheia] in its affirmations

or denials. These are craft [techne], scientific knowledge [episteme], [practical] intelligence [phronesis], wisdom [sophia], and understanding [nous]...[1, page 121]

Bernstein asks, ``Why should we think that the response that modern technology calls forth is to be found by ``re-turning'' to techne and poiesis, rather than phronesis and praxis?'' He objects that Heidegger does not even consider this possibility, writing that ``[t]he entire rhetorical construction of The Question Concerning Technology seduces us into thinking that the only alternative to the threatening danger of Gestell is poiesis. It excludes and conceals the possibility of phronesis and praxis.''[1, page 122] Bernstein urges that our destiny rests not solely with the thinkers and the poets who are guardians of the abode in which man dwells, but with the phronesis of ordinary citizens' contribution to public life. The possible upsurgence of the saving power may be revealed in action (praxis) and not only in ``poetic dwelling.''

Bernstein asks again, ``Why is Heidegger blind to those aspects of praxis and phronesis highlighted by Taminiaux, Gadamer, Arendt, and Habermas?'' He agrees with Habermas's suggestion: that Heidegger is guilty of ``a terrible intellectual hubris'' when he suggests that the only proper and authentic response to the supreme danger is to prepare ourselves to watch over unconcealment.

Bernstein next draws attention to an unpublished manuscript of the 1949 lecture that became The Question Concerning Technology, which contains the following passage that has been deleted from the published text.

Agriculture is now motorized food industry -- in essence the same as the manufacturing of corpses in gas chambers and extermination camps, the same as blockading and starving of nations [it was the year of the Berlin blockade], the same as the manufacture of hydrogen bombs.[1, page 130]

Bernstein understands this grotesque passage as a natural expression of Heidegger's reaction against the the ``correct'' definition of technology as a neutral instrument which can be used for benign ends of increased food production or the malignant end of extermination of human beings.

But if we focus on the essence of technology then these differences are ``non-essential.'' The manufacturing of corpses in gas chambers more fully reveals the essence of technology....Unless we fully acknowledge and confront the essence of technology, even in ``manufacturing of corpses in gaschambers,'' unless we realize that all its manifestations are ``in essence the same,'' we will never confront the supreme danger and the possible upsurgence of the saving power.[1, page 131]

Bernstein concludes that the deleted passage is not simply some insensitive remark but rather a necessary consequence of the very way in which Heidegger characterizes Gestell, as an unconcealment that claims man and over which he has no control. He sets out a formulaic pattern in Heidgegger's thinking,

a pattern that turns us away from such ``mundane'' issues as mass extermination,

human misery, life and death, to the ``real'' plight, the ``real'' danger - the failure to keep meditative thinking alive....It is as if in Heidegger's obsession with man's estrangement from Being, nothing else counts as essential or true except pondering one's ethos....It becomes clear that the only response that is really important and appropriate is the response to the silent call of Being, not to the silent screams of our fellow human beings....when we listen carefully to what he is saying, when we pay attention to the ``deepest laws of Heideggerian discourse'' then Heidegger's ``silence'' is resounding, deafening, and damning.[1, pages 136]

Bernstein's analysis and conclusions suggests a moral critique of utopian and dystopian theories of Internet culture. Although none of the theories I have reviewed is so damned by its inherence arguments as Heidegger's, which blinded him to the specific evil of the Holocaust, yet a Postmanian anti-Technopolist may be blinded in parallel fashion to something good or bad about this or that specific aspect of American culture; a Borgmannian may be blinded to something specifically good or bad about some digitally generated artifact; and a gung-ho cybernaut of the Leary persuasion may be blinded to the old-fashioned pleasures of embodiment.

But then is not the inherence instrumentalism vulnerable to moral critique as well? The meta-tool account may have its own blind spot, but, in the light of Bernsteinian diagnosis of Heidegger's inherence dystopianism about technology, this is not because it fails to plumb the depths of Gestell. If there is something wrong with the Internet, this will come out in specific uses of it. There will be no need for the specific device that the Philosophical Lexicon calls a ``heidegger.''

heidegger, n. A ponderous device for boring through thick layers of substance. ``It's buried so deep we'll have to use a heidegger.''

As noted at the essay's beginning, Heidegger fancied that he had discovered a level of Being from which he could launch a decisive attack against technology, a level deeper than a suggestion that it harbors good or bad value commitments. This fancy has been rejected, and instead a ``resounding, deafening, and damning'' value commitment has been traced to Heidegger's philosophy of technology. This is no guarantee that dystopian inherence theorists are mistaken. Examination of their claims must proceed case-by-case. But Heidegger's philosophy of technology provides no extra reason to think that any of them are correct.

## Inherence instrumentalism

Turkle's category of utilitarian interpretation understands the Internet as a tool. The version scouted here under the rubric of inherence instrumentalism interprets the Internet as essentially a meta-tool for creating tools. This general idea derives from Robert Nozick's discussion of a libertarian utopia in Anarchy, State and Utopia.[14] Although he did not have the Internet in mind, what he says there about a framework for utopia transfers quite naturally to the Internet, as well as having greater plausibility there than in political philosophy for the real world.

The Internet does not have a culture of simulation, on this meta-tool account, because it is a tool for creating a variety of subcultures, some of which may fit Turkle's description of Internet culture, some of which will not, not to mention the variety of Internet activity, like setting up a web page for lecture notes, that does not amount to

creating a subculture. The Internet is the Swiss Army knife of information technology.

Libertarians sometimes think of utopia in this way: ideally, everyone would be free - would have the Lockian ``natural right'' - to migrate or emigrate as he or she chose. The worlds that result from such to-ing and fro-ing they call associations, Acknowledging that there is no single world that's everyone's perfect cup of tea, the libertarian is inspired by a utopia which is a set of possible worlds, with permeable borders, in which one world is the best imaginable for each of us. Those whom you would have in your ideal world are also free to imagine and relocate, perhaps to a world of their own imagining. There could be an incessant churn of relocation, all worlds being ephemeral, or some stable worlds might emerge in which everyone would choose to remain. There will be no one in a stable association who wants out, and no one will be in whose presence is not valued by is not valued by the others. Libertarianism may be bad politics, but its conception of utopia is a plausible model of the Internet.

Liberals reject this utopia as an ideal for the state, because it is thought that government should take care of its citizens, even boring or mad or expensive ones, whereas libertarian associations might shun them. But a ``netizen'' is a less vulnerable and needy thing than a citizen, having only an electronic presence on the Net or at most an 'avatar' or 'character', a textual construct, rather than a physical body. So there tends to be less at stake, and consequently freer reign for voluntary associations and an ``anything goes'' spirit. For instance, the heavy costs of immigration and emigration in real life are not mirrored on the Net. Leaving one subscription list and joining another, for example, is trivial, and the newcomer's added presence brings with it no burdens, especially if he is ``lurking,'' or at most the nuisance that the others on the list must delete the newcomer's unwanted contributions to the discussion.

The exceptions prove the rule: Some on-line activities, ranging from banking to pedophilia, can have important real-life consequences and correspondingly serious RL penalties, including criminal sanctions. Another way in which the Net approximates more closely to the libertarian utopia than its real-life counterpart is the ease of creating desired associations. Ideally a person's utopia is an association than which she can imagine no better, and though this is a very stringent condition, it is easier for a netizen to approach it in cyberspace than it is for a citizen to do so in meatspace (IRL). Call this the malleability factor. Do you want to join a community of scholars discussing quantum mechanics? No problem; judicious use of a search engine will set you up in virtually no time. The closest you might come to this in real life is a three-day conference, and though this might be preferable in some respects than an on-line discussion, the persistence of the latter might be what you most desire, giving it a decisive advantage with respect to malleability, especially when ``immigration costs'' such as air fare, hotel expenses, conference fees, and so forth are calculated.

The protean character of information technology and the meta-tool character of the Internet's architecture count against assertions that such-and-such value cannot be pursued on the Net. Its pursuit may take on new forms, as with reading and the ebook, but the value does not face the Net as a dead-end. The Net's protean aspect has important implications for views that condemn distance education on the grounds that the Net is incapable of being a vehicle for the transmission of intellectual values that have been inculcated by traditional universities. This may be compared to Hegel's apriori certainty that there could be no more than seven planets. Hegel should have waited to see what astronomy could do, and similarly dystopian theorists should wait to see what distance-education specialists can do. For instance, the dimension of

sound is just now becoming a mainstream feature of Internet experience, due in no small part to Napster and its brethren.

Whether you approve of such ``roots'' for sound on the Net, there is no telling what sound's ultimate ``fruits'' will be: no telling that they will not contribute toward enhancing distance education so that it acquires more qualities of the face-to-face tutorial encounters that one might prize in traditional education. What one prizes, more exactly, are those regrettably rare moments in the history of traditional education when it has lived up to its ideals, usually at great expense to taxpayers and parents. Distance education should not be measured against a Platonic ideal, but rather its warts-and-all real-world counterpart. Moreover, they are not necessarily competitors, since distance education may attract a constituency of students that doesn't affect the frequency of traditional education's ``moments,'' adding its own moments for students who might otherwise have been unable to afford the traditional experience or who simply prefer the way distance education fits into their lives.

The claim that inherence instrumentalism makes to being ``value free'' is provocative, defying a post-Weberian tradition of deconstructing such claims with a view to revealing hidden value commitments, an argumentative strategy that bears Heidegger's imprimatur, as noted above. It may be helpful to clarify the claim with an analogy to a box of paints and a variety of paintings made with them, some of them good paintings, some of them bad, some of them so-so. It would be a logical error, a ``category mistake'' in Rylean terminology, to evaluate the box of paints as a good, poor, or so-so painting. It is not a painting at all. Classification of the Internet as a meta-tool aims at a similar conclusion. Corresponding to the variety of paintings in the analogy is the variety of Acontent on the Internet. None of this content is value free in the sense that is being reserved for the Internet as a meta-tool. Content in the middle of the continuum from poor to good might be deemed value free in the sense that it excites no judgments of praise or condemnation with respect to this or that value; such Internet content might be described as bland. But the sense in which the Internet is value free is not like this. Rather, it is like the freedom of the box of paints from being judged a good, bad, or so-so painting. It is not a bland painting, and the Internet is not bland Internet content, on the inherence instrumentalist account. Inherence dystopians and utopians purport to find something deeply good or bad about the Internet, but on an instrumentalist diagnosis either they become so deep that they loose touch with the truth, as illustrated by the attempt to tie the computer inevitably to a society of technocratic administration, or else they are guilty of a part-whole fallacy, judging the whole Internet by some of its uses. Even if all uses had some bad value or effect X, that would ground only a balance-of-reasons judgment that one should or should not use the Internet, depending on whether X outweighs the good value or effect Y.

## Conclusion

To illustrate once more the dystopian/instrumental/utopian continuum and the balance/inherence vectors that can be traced by reference to it, consider the changes being wrought in work and leisure by the computer revolution. Offices have been transformed by the computer over the past two decades, while web surfing, computer gaming, and Internet chat rooms have become significant leisure activities. As recent events in Afghanistan testify, even war, that most regrettably necessary form of work, must be fought with sophisticated information technology in order to achieve success in the battlefield of the twenty-first century; the leisure actitity of correspondence is migrating from the pen and the typewriter to computer email, a transition from

manipulating matter to manipulating digital bytes that is as significant as any preceding revolution in communication technology. Despite the uneven track record of ``dot coms,'' business activity on the Internet is starting to take giant strides; new communities are being formed on the Internet, like Multi-User Dungeons (MUDs), Internet Relay Chat (IRC), and so on, on-line ``third places'' between work and home that allow netizens a respite from the demands of office and household. Work as traditional as farming is becoming reliant on the boost to organization and efficiency that computers make possible; games like chess, go, poker, and bridge are just as likely to play out on the Internet as in physical spaces. Computers and the Internet are opening up new employment opportunities, new tools, and new media for artists; correspondlingly, creating and maintaining a personal web page has become an art that many pursue in their free time. Telecommuting and teleconferencing are becoming more widespread, with potentially enormous implications for city design and transportation systems; making friends is no longer channeled by physical neighborhood, and with the development of automatic-translation software a great obstacle to cross-cultural friendships, namely lack of a common language, is being removed. New motivations and organizational structures for work are being discovered on the Internet, notably the ``open source'' initiative associated with Linus Torvalds, Eric Raymond, and a legion of true hackers, showing how psychic rewards can replace monetary ones in high-quality software development within the Internet milieu; if work is understood as paid employment, contributions to such software development is not work, whereas if it is understood as activity that is instrumental to some further end, such as a new Linux kernel, it is work calling for a high level of skill.

This raises the question whether the suffusion of IT into work and leisure will eventually lead to their transcendance in ``meaningful work'' that is pursued because of its intrinsic motivations, not extrinsic ones such as money. Is there something about information technology that makes it inherently amenable to meaningful work? The case could be made that will do so by following a negative and a positive path. The via negativa is the elimination of ``agonistic work,'' work that one would gladly avoid if it weren't necessary. The via positiva is the creation of attractive environments in which one is always able to work ``just as one has a mind.'' Marx had such an environment in mind when he speculated about the higher stages of communism, in which the division of labor characteristic of capitalism has been overcome and one's distinctively human powers are fully realized, without the compulsion of necessity. In ``The German Ideology'' he made the point like this.

> For as soon as the distribution of labor comes into being, each man has a particular, exclusive sphere of activity which is forced upon him and from which he cannot escape. He is a hunter, a fisherman, a shepherd, or a critical critic, and must remain so if he does not want to lose his means of livelihood; while in communist society, where nobody has one exclusive sphere of activity but each can become accomplished in any branch he wishes, society regulates the general production and thus makes it possible for me to do one thing today and another tomorrow, to hunt in the morning, fish in the afternoon, rear cattle in the evening, criticize after dinner, just as I have a mind, without ever becoming hunter, fisherman, shepherd, or critic.[19, 124]

Add to Marx's flight of fancy the thought that information technology will be the means by which ``society regulates the general production,'' and you have a form of inherence utopianism about IT. However, given the failure of command economies in real-world tests such as the USSR, Heideggerian inherence dystopianism may

recommend itself instead. IT will have taught us, on this account, to view nature as so much ``standing reserve'' and not even the overcoming of the division of labor will protect us from a mental architecture that we should want to avoid. Another inherenence-dystopian option argues that a core value of our civilization, to which our self-respect is inexorably tied, is agonistic work; IT, by showing us how to eliminate such work, will have the unintended consequence of removing the bases of our self-esteem. The aspect of technological determinism is noticeable in these three options. An alternative is the outlook that Karl Popper advocated in The Open Society and its Enemies[15] and elsewhere, which views with suspicion ideas about the necessity of history's unfolding and recommends instead that opportunities for change be monitored for unintended consequences, so that choices can be made that reflect knowledge of where change is going wrong. The current debate about genetically modified foods is an example of such monitoring; it also illustrates a tendency for inherence voices to emerge at the dystopian and utopian extremes.

The Popperian outlook may be viewed as contributing to an inherence instrumentalist interpretation of Internet culture, wherein the meta-tool character of the technology acknowledges dystopian fears and utopian hopes with respect to particular content. At the meta-level, however, the Internet is neither good nor bad nor inbetween; at the level of specific content, it may be any of these things. The Popperian contribution theorizes the Internet, not as historical inevitability to be deplored or valorized holus-bolus, but rather as a locus of possibilities, to be monitored carefully in order to make practically wise choices about its use.

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