

**Darin Barney, *Prometheus Wired: The Hope for Democracy in the Age of Network Technology* (Chicago: University of Chicago Press, 2000).**

**Beth E. Kolko, Lisa Nakamura, and Gilbert B. Rodman, eds. *Race in Cyberspace* (New York: Routledge, 2000).**

**David R. Koepsell, *The Ontology of Cyberspace: Law, Philosophy, and the Future of Intellectual Property* (Chicago: Open Court, 2000).**

1. In the fourth chapter of his book, *Prometheus Wired*, Darin Barney advances a bold thesis. He observes that students of the relationship between Information Technology and politics miss the transformational effects of the Internet on political institutions. What is argued in the literature on politics, law, and communications technology is that the global character of the Internet defies national attempts to regulate transactions and other activities. The solution advanced most often is an international agency or world confederation with a mandate to control Internet activities and products like child pornography, hate speech, or gambling. Barney asserts, to the contrary, that such images of the relations between government and networks miss the point: The Internet is itself the new form of political authority in the world. There has been a transfer of power, heretofore unnoticed, and any thought that national sovereignties can combine to regulate cyberspace is hopelessly anachronistic and illusory.
2. This provocative assertion is not the thesis that Barney pursues ultimately. Indeed, his main claim in *Prometheus Wired* is that the radical promises of the Internet -- the idea that all old knowledge and political categories like national sovereignty, pluralism, and citizenship have been rendered otiose -- are inflated, empty, and hide the truth that traditional political theory has much to offer an analysis of this technology and its social consequences. Underlying this explicit thesis is the question I wish to explore in this essay: How different is cyberspace from "real-time" space? That is, should cyberspace be perceived as entailing an ontological, epistemological, and political sea change? Or should it be seen in a continuum with our traditional notions of a physical and political world? There are differences between real time and cyberspace, to be sure; but do these differences add up to a dividable world?
3. The projections of those technophiles who see the Internet as a liberation from all strictures imposed by the frictional world are part of a larger culture of metaphysical escapism that is as understandable as it is untenable. Whether we are discussing Plato's form world or the various attempts by mathematicians and logicians to fashion a symbolic language that is detached from the imprecision and prejudices of natural languages, escapism has been a consistent theme across human cultures.<sup>1</sup> Cyberspace does afford users a variety of "Ring of Gyges"-type escapes from the world of real time. I can, for example, participate in a variety of role-playing fantasy games where my avatar's character -- an alter ego of my own design -- can accumulate all sorts of prestige, weapons, and powers. If I wish, I can leave my gender, age, ethnicity, sexuality, physical infirmities, social status, and reticence at the threshold of cyberspace and thrill in expressing myself as a completely different identity. Through chat rooms I can become a member of different communities, confess intimate secrets and desires to anonymous

"friends," have cybersex, or perpetrate virtual acts of violence.

4. But just how different are these activities from the real time world? Could I not commit my imaginative flights from my true life to paper and write stories and novels? Would a relationship with a pen pal be as fulfilling as a chatroom conversation? Is cybersex anything more than mutual masturbation (at this point in the technology)? We move between these realms with relative ease. And there are areas of imbrication. For instance, I have a student who made almost twenty thousand dollars last year by playing fantasy games, acquiring weapons and powers in these games, and then selling these virtual properties on e-Bay. Real cash for a fantasy wizard's wand! Viewed differently, all this student has done is trade time -- the time it takes him to find these desirable game tools -- for money paid by people who have the means and enjoy the role-playing, but do not have the enormous amounts of leisure required to rise in the game's social hierarchy. How different are these worlds if old-fashioned capitalism can traverse their boundaries?
5. Part of the hype surrounding cyberspace and virtual reality technologies is that they promise an ontological shift. "As soon as we enter the world of virtual reality," writes Philip Zhai in this vein, "virtual reality technology functions to reconfigure the framework of the whole empirical world, and our perception of the technology as a separate object -- or 'tool' -- disappears."<sup>2</sup> Network and virtual reality entail worlds that we are immersed in. Our reality is subsequently expanded, but this fabricated dimension is managed or tailored to enable us to live a "systematically meaningful life."
6. The escapism and naïve dualism underlying this sort of contention are as unmistakable as they are intertwined. The dualism is naïve because it starts with a view of our physical reality as unmediated by perception and language (described sometimes as "barefoot empiricism"). That is, the contrast between reality and virtual reality, according to this view, is that one is apprehended directly, while the other is constructed with tools. The constructed reality is fashioned from raw materials of physical reality, but it is different and largely autonomous because of its malleability and its frictionless capacity to translate information into bits (computerese for "binary digits"). As in any dualism, there is an asymmetry between the poles. What this means in this particular binary arrangement is that we will gravitate naturally toward immersion in the freedoms of cyberspace, while denigrating the pains and limitations of an escapable physical world.
7. Uniting the works considered in this essay are their respective confrontations with this cyber/real line of demarcation and the political implications of perceiving network technology and cyberspace as the tools and products of transcendence and a wish to live a life free of restrictive physical laws. The authors treated here tend to see the continuity between reality and virtual reality as predicated upon the social and linguistic construction of both.
8. Darin Barney's *Prometheus Bound* sets out to demystify network technology in order to deflate the hopes of those commentators and prospective users who see cyberspace as liberation from physical laws and government regulation. Barney responds to these boundless hopes in language reminiscent of Edmund Burke's cautionary response to the revolutionary fervor of the *philosophes* and Jacobins. "Just as hope causes us to regard ourselves as *more* than we are," admonishes Barney, "it also thrusts us into the future as irrational, that is, as *less* deliberative and reasonable than we are capable of being. . . . We *hope* for the best when we are unable or unwilling to *think* about what is best." [p.5] For Barney, technological advancement is occurring at a speed that far outpaces ethical and political deliberation. If, by definition, deliberation cannot be accelerated, then to expose network technology's incipient anti-democratic character must function to show its development to be regulable.
9. Barney's target is only partially the effects of digital media on political thought and communication; his main point of attack is on the postmodern ideology of progress that presents network technology as "*inherently* revolutionary" -- a democratic enemy of contemporary structures of power. In buying into this ideology, Barney warns us that we are in

danger of succumbing to the image of the network as accessible to everyone (as the price of personal computers decrease and the equipment proliferates across classes and hemispheres), by failing to recognize that technology is rooted etymologically in the human desire for mastery over nature and others. The postmodern image of the Internet as intrinsically democratizing serves to hide the reality: Network technology perpetuates the social and political status quo by streamlining administration, disenfranchising those who are not technologically savvy or who lack access, and, finally, by enhancing the surveillance and manipulative techniques of governments and marketers.

10. Perhaps the most appealing aspect of *Prometheus Bound* is that the conservatism undergirding Barney's argument does not degenerate into a neo-Luddism. It is not beneath him, for example, to notice the dialogical enhancements offered by e-mail, instant messaging, and other modem-driven avenues of communication. But he wants to contend, rightly, that there is more to democratization than an increased capacity for conversation and national plebiscites. In substantiating this criticism, Barney explores the democratic potential of the network. This exploration is thwarted, I think, by an overly homogeneous conception of cyberspace. This homogeneous depiction of the Internet rests, oddly, in a homogeneous conception of language that Barney inherits from Heidegger.
11. For Heidegger, language was described famously as "the house of being." We humans reside within this house. We therefore cannot use language as we would a tool; rather, we are tools of the language we use. Following this ontotheological conception of language, Barney provides etymologies of the vocabulary of network technology (*techne*, cybernetics, etc.) to expose their correct or true meaning about their purpose. Words can be used for different reasons, but contemporary uses serve to hide correct interpretations that, in turn, are forgotten or have to be uncovered. In uncovering the true meaning of a constellation of network-related words, Barney hopes to disclose the inherent anti-democratic, "impious" character of our use of technology. In the end, through technology's new autonomy in relation to politics, we manage only to increase the distance and further obscure our relation to truth in the name of efficiency.
12. Enframing this idea that we are moving away from truth is a broader sense in which there is a natural order of things that is being corrupted. In this natural order, categorized by Aristotle, humans have means to express truth. *Technai* was one such mode of expression along with practical wisdom (*phronesis*), mathematically provable knowledge (*episteme*), intellectual intuition (*nous*), and wisdom (*sophia*) [p.237]. In a happy order, for Aristotle, political science governs these expressions. "Consequently, all genuine *technai* (i.e., techniques that are rational means to good ends) are subject to the sovereignty of political deliberation about the goodness of their ends and their integrity as means to these ends." [p. 237] In the contemporary age, the sovereignty and regulative authority of political science has been challenged and the just order between political deliberation and technology has been distorted. If technology has, either by force of innovation or by sabotaging the sovereignty of politics, become ungovernable, then truth will remain buried (forgotten or inexpressible). If, however, the line between real-time space and cyberspace is not as impermeable as some would lead us to believe, then this technology can be reined in, governed, and used to embellish our memory of the correct order of things.
13. I feel I should admire such a bold defense of relevance of political theory for contemporary society, but what Barney provides is less a political critique of anti-democratic trends in our society and more a retreat into a metatheoretical discourse about the ethical categories of Aristotle, Marx, Heidegger, George Grant, and others. At times Barney is more interested in defending Heidegger's conception of language and truth as *aletheia* from postmodern challenges than addressing the political issues engendered by network technology. This retreat is necessitated, it appears, by a monolithic conception of network technology that is inaccurate and misses emancipatory opportunities within the technology itself.
14. What the current state of the global Internet presents is closer to the thesis Barney articulates, but chooses not to explore: the Internet is a new form of governance; it is not an agent of globalization, but the embodiment of global homogeneity and administrative

efficiency. To achieve this global size, however, the Internet had to first embrace a frontier mentality. To govern and to gain the trust necessary to invite commerce, the Internet had to create zones of regulability through encryption and coding. This security-oriented ideology remains secondary to the primary, anarchic spirit of coding to create open spaces for free communication. These are countervailing forces within the technology that result in a structural heterogeneity that Barney does not see. This internal heterogeneity underscores the most significant difference between cyber- and real-time space: There are no spatial limitations to the Internet. For every incursion of encryption and surveillance technology, there is space and opportunity to expand the Internet with code that is open-sourced or, to put it differently, intrinsically democratic. There are both illicit and licit antidotes to the closed-sourced imperialism of Microsoft-type codes, and invasive government Clipper-type chips and e-mail scanning devices.<sup>3</sup>

15. This depiction of the network as a multi-tiered mosaic of (near) infinite proportions runs counter to Barney's stated desire to ensure there will always be a place for national governments as regulative forces in relation to the Internet. "The stakes here are considerable," he writes. "[T]he possibility of public, political governance is a necessary and minimum condition for realizing the democratic hopes pinned to network technology." [p. 245] Conceived in this way, we need to pin our hopes on one undemocratic and centralized institution of government regulating the Internet in the name of the public good. This is as unlikely as it is undesirable.
16. A stronger argument for a democratic network technology turns on a transition from syntactic-based coding languages like Basic, Pascal, C, and C++ and toward natural language programming. Already there are democratic (at least for trained programmers) open-sourced codes like GNU/Linux and Netscape. Now we need to re-think citizenship to include computer literacy and the ability to contribute to the democratic architecture of the Internet. Unlike real-time space, the Internet can be expressed as a permanently revolutionary technology where anti-democratic architectures like those constructed for e-commerce sites can be answered with open sourced sites for information, political discussions, and other forms of expression.
17. Examining the relationship between real-time space and cyberspace takes the form of pendulum swings. From one perspective, the difference can be likened to the epistemological division between noumenal and phenomenal spheres posited by Kant. From another point of view the continuum is strong enough to render differences imperceptible. The essays in the second volume considered here, *Race in Cyberspace*, tend to emphasize continuity over structural difference (although it is contended that cyberspace is "whiter" than the physical world). "Cyberspace and race are both constructed cultural phenomena, not products of "nature"; they are made up of ongoing processes of definition, performance, enactment, and identity creation." [p. 10] This emphasis is stated as a critical response to the "invisibility" of race and discourse about race online, and the corresponding emphasis on the liquidity of identity/anonymity by most philosophers and social scientists who study the technology's social implications.
18. For Lisa Nakamura, advertising in cyberspace does not involve a mere avoidance of race; these ads promise a homogeneous world that actively eschews diversity while promoting Western hegemony. At the same time the ads try to present real-world diversity as unthreatened by this technology. Nakamura looks at a number of television and print ads for IBM, Compaq, and MCI that play on the contrast between ethnic and natural diversity in the real world -- rain forests, desert mesas, a Bedouin on a camel, a Japanese surgeon, an Italian nun, and so on -- and the boundless global village offered by the Internet. "The message is that cybertechnology . . . will magically strip users down to 'just minds,' all singing the same corporate anthem." [p.25] The investigation provided by Jennifer Gonzalez covers the same conceptual ground as Nakamura, but her focus is on artists' sites and collaborative textual game sites called "MUD"s (Multi-User Dungeons) or "MOO"s (virtual worlds). One of the draws to these game sites is the freedom to "morph" or construct and act through an identity or avatar that departs from your "real" self. Gonzalez describes this constructed identity as an "appended subject." We should think of these avatars not as autonomous agents in a virtual reality, but

rather as "an extension of [ourselves]. . . in an artificial but nevertheless inhabited world." [28] The assemblages of bodies at these cybersites are not escapes from colonialism and racial stereotypes, nor are they examples of imaginations liberated from the constraints known in the physical world. Instead, these virtual bodies are "marked" by old power relations that occur now "on the level of symbolic exchange."

19. Boundaries can be places for play, as Donna Haraway has observed in her various explorations of "cyborgs," defined as hybrids of humans and machines.<sup>4</sup> Cyborgs are constructed denizens of the boundary between the physical and cyber- worlds. In Haraway's cyborg world, these new beings are gendered (though racially-neutral): female cyborgs are oppositional creatures who rail against phallogocentrism, while "the 'male' cyborg continues to march on preestablished pathways of colonization, domination, and destruction through his militarized versions of video games and Nintendo wars." [p.53] Jeffrey Ow continues down this playful path by constructing a male, Asian cyborg (himself) who enters the game *Shadow Warrior* to expose its underlying racist stereotypes. In this game -- described by its creators as "a 'fun' game that didn't take itself too seriously" -- the gamer, typically an adolescent male, takes on the role of Lo Wang (the "Yellowfaced Cyborg Terminator"), a kung-fu fighter. In taking on the perspective of this avatar, "the constraints of the game force the gamer into the role of the cold blooded colonizer who rapes, pillages and kills like a digitized reenactment of the My Lai massacre." [p.60] But Ow's cyborg plays a different game. First, he unmasks the Yellowfaced Cyborg Terminator and reveals it to be "a white male, middle-class, cultural colonizer" -- the game creators George Broussard and Scott Miller. Next, he exposes the game itself as a racist response to perceived threats to the Western video game market emanating from the Pacific Rim "within the arena of global capitalism." [p.55] A game like *Shadow Warrior* is an admittedly small and ephemeral feature in a large, competitive technological landscape. Where Jeffrey Ow took note of this moment of overt racism in cyberspace, Rajani Sudan and David Crane seek to explain the invisibility of race in the larger academic discourse on science and technology and this discourse's various visual representations in popular culture.
20. The invisibility of racial heterogeneity in science is a function of the cultural authority of white, male heterosexuality, according to Sudan. This cultural authority is expressed even in "objective" fields like medical testing and automobile crash testing where the white male body is taken as representative of the species. When applied to cyberspace visuals, the archetypal body with its white, male markings is reinforced by the ocularcentrism of the culture that defines truth in terms of accuracy in representation. This trust in representation is now extended to virtual simulations of cyberspace and films. At the same time, the dynamic of this technology promises to efface the traditional boundaries found in the physical world -- boundaries demarcating race, nation, sexuality, and gender. The response to this challenge to identity is a marked anxiety expressed in films like *Rising Sun*, *Videodrome*, *Strange Days*, and *The Net*. As one medium illuminates the malleable quality of boundaries traditionally conceived as natural and rigid, the second becomes the conduit for "constructions and contestations of gendered and racialized identity." [p.73] This interaction between cyberspace and film, argues Sudan, becomes the site for ideological investigation and the re-expression of old power relations -- the otherness of blackness in David Crane's analysis of various films set in cyberspace -- in new hegemonic guises.
21. In the most wide-ranging and thankfully jargon-free article in this volume, Tara McPherson juxtaposes the fear (articulated by many social commentators on network technology) that the Internet is destroying our sense of place<sup>5</sup>, our rootedness in our local communities, against websites in cyberspace like the one that recreates the Confederate Embassy in Washington D.C. On this site, white homogeneity and the invisibility of race and racism are achieved by "the creation of new regional identities that refigure white Southern masculinity by borrowing from the language of the civil rights struggle." [pp.119-20] The lesson McPherson draws from her investigation of this virtual Dixie site neatly encapsulates the overarching theme uniting this anthology. She observes, "when theories of the multiple-selved, unrooted inhabitants of cyberspace do not directly and explicitly engage with issues of race, racism, and racial representation, they help to construct a raceless fantasy space, free of the contradictions of life at the end of the millennium, that shares many traits with cyber-Dixie. Whether this space is

filled with MUDers happily swapping gender, freed from the constraints of embodied identity and geographic origin, or neorebels dreaming of cybersecession and new visions of old places, the default setting is still all too white." [p.120] This particular "raceless fantasy space" is the product of a neo-Confederate defense of the purity of white femininity and the valor of the Southern gentleman. The defense succeeds by eliminating blackness, particularly the implied sexual threat posed by black masculinity, from the scene while it asserts "a new visibility for whiteness as an injured, wronged, violated" party. [127] Nostalgia and technology combine to re-tether those disenfranchised white Southerners who visit this and related websites to a romanticized Old South. If rootedness can be engendered technologically, then it can be embellished similarly. David Silver looks at the cyberculture of Blacksburg Virginia as a case study in the way a community bulletin board (the Blacksburg Electronic Village) can become a site where issues of race, gender, and sexuality, marginalized in traditional community settings, become more visible through discussion. The diversity of the e-village matches that of Blacksburg, argues Silver, despite the unleashing of vitriol and racist expression apparently welcomed by the anonymity of participants in on-line threads devoted to questions and issues pertaining to race, gay rights, and feminism.

22. My partner in life came to the United States from Korea when she was about twenty two. English is her second language and she acquired it through immersion and an extraordinary ear for regional nuance. This aural sensitivity is, she observed when we were reading Don DeLillo's *White Noise*, far less useful than it once was because of the emergence of a national dialect promoted overtly by the global marketing of American capitalist culture and various conservative arguments and measures against bilingual education, and covertly by the pervasiveness of television. Across the United States, regional idioms have diminished in number and quality, and Americans are sounding increasingly like Tom Brokaw and Martha Stewart. Intuitively, then, we should expect cybertechnology's effect on linguistic variability to be similarly homogenizing. To a certain extent this is true. However, Mark Warschauer offers an interesting analysis of "the experiences of native Hawaiians' use of the Internet as a tool for promoting language revitalization." [p.151] This revitalization effort, contends Warschauer, is part of a larger movement on the Internet toward localized forms of resistance against the globalization of the American tongue. The thrust of Joe Lockard's argument on "techno-universalism" acknowledges the oppositional posture of local "racialized and ethnic communities" in relation to the emerging "electronic nation," but he is far less sanguine than Warschauer about the ability of these particularized voices to rise above the din of on-line nationalism. The digital divide instituted in the school systems of America further weakens their ability to be heard, Jonathan Sterne argues. Traditional economic, social, and racial inequalities are re-instituted in cyberspace by limiting access to the technology in the classroom. In recent years the presence of non-white users has been growing, but gross disparities remain both in the United States and between the Northern and Southern hemispheres. The second step toward equal access to this growing center of political power is heavy federal and corporate investment in computer literacy programs. Recognition of the continuum between "the social space of schooling" and cyberspace is step one. "The politics of region return as the repressed: the topology of cyberspace mimics the racial and economic topology of housing and schooling." [p.193]
23. Once this mimicry is acknowledged then "cyberspace" no longer has its beginning in the modem. Now access to a computer terminal and knowledge of how to jack into the Internet are the starting points. Sterne's main point here is that reform of the Internet's whiteness and the racial voluntarism -- an on-line idea that race is "something that can simply be chosen or forgotten at will" -- is combatable only from the off-line outside. This is the logical and political consequence of all of the essays in this book.
24. The final article, by co-editor Beth Kolko, deals with the anti-democratic character of the network's exclusion of voices of race and what this exclusionary domain reveals about life off-line. There are two main points here: There is a self-governing dimension to the Internet, particularly with MUDs and other collaborative sites. Second, built into this self-governance is a collective desire among participants to escape race and racial issues. However, this is not innocent escapism from socially constructed differences and conflict. It is a conscious desire to escape into a white-only realm by designing a technological apartheid. How this negation of

race is perpetuated is by code: The architecture of the site begins with an entryway where the user puts together her or his avatar. There is no category for race. To add a dimension of race requires knowledge of coding on the part of the user. Coding is a new site of political power. If you do not see this, if you do not know how to code or the code itself is closed (protected), then you must conform to the categories preconstituted by the site owners. Kolko underscores this point: "The mediation of these virtual worlds is scripted in the image of the designer, and the coder really does become god, delimiting the various kinds of representations and interactions the universe will acknowledge." [p.222] We must therefore re-think that sense of liberation associated with identity creation at the entrance of the Internet. For Kolko, the inclusion of race in cyberspace begins at that sublevel of coding space. She has embarked on an interesting project of creating a MUD -- called "MOOScape" -- that includes an @race function at the entry.

25. It is too early to tell the significance of this experiment on the overarching racial homogeneity of cyberspace. A project like Kolko's serves to illuminate the limitation of imagining cyberspace as a one-dimensional unified life-world. It is not, *pace* Barney. But what is it, then? What is the epistemological, ontological, and legal status of the network and its constituents? Once you have framed the question this way, you have assumed an ontological status: Cyberspace is something distinct (not separate, perhaps) from real-time space. Now the task is to examine its topography and the legal status of the various properties that give it shape or are retrievable in various locations on the space. This is the task of David R. Koepsell in his book, *The Ontology of Cyberspace*. Koepsell seems uniquely qualified to take on this task. In the book blurb about the author, Koepsell is described as the "Executive Director for the Center for Applied Ontology." (It does occur to me that this is how a corporate creationist might describe God.)
26. When considering the legal status of locations and intellectual properties on the Internet, a scholar must respond to the treatment of these issues offered by Lawrence Lessig in his book, *Code*. Lessig, a professor of constitutional law, challenged the various claims regarding the Internet as an "autonomous technology" (Langdon Winner's useful phrase) by examining levels of regulability within the architecture of the Internet and the current state of cyberlaw. Koepsell opens his own analysis with a quick acknowledgement of Lessig's contribution and an equally quick dismissal of *Code*'s legalistic orientation to cyberspace. According to Koepsell, Lessig's "calls for more legislation and increased regulation of the medium are not backed by a sound ontology which would distinguish the medium from any other." [p.17n] Koepsell's immediate concern then is to offer "a sound ontology" of cyberspace upon which he can build his own legal edifice. Why an ontological claim must precede a philosophy of law is not clear. If anything, Koepsell's philosophical assertions about ontology confuse this matter because they appear to work as rhetorical justifications for a unique legal status assigned to cyberspace rather than as foundations for this status. This point will be developed further.
27. To begin, Koepsell offers a quick historical overview of the substantive differences between the philosophical subdisciplines of ontology, metaphysics, and epistemology. The metaphysical and epistemological worlds are divided between realists and idealists. This fundamental disagreement over the essence of reality, in these arenas, is irreconcilable. However, there is no such impasse in the realm of "commonsense ontology." Idealists and realists may disagree over the essence of A and B, but there remains a basis upon which to compare these two things. This basis is experiential, and implied in this point of commonality is "an admission that we cannot satisfactorily answer the ultimate metaphysical questions regarding what may be real and what may not be real." [p.25] All that we are considering in commonsense ontology is common experiences. When considering rights, for example, we could follow the metaphysical course and question their universality. This is what philosophers do. In the commonsense ontology of law, conversely, there is acceptance that rights exist and we go directly to the study of "legal opinions or treatises provided by judges or lawyers regarding rights." [p.30] These treatises will offer categorizations of rights according to where they fit in the universe of other accepted legal objects.
28. How do we move from this commonsense ontology of the law to an ontology of

cyberspace? The answer provided by Koepsell is "the law of intellectual property," an accepted legal object, "embodies a crude ontology of cyberspace." The fit of objects in cyberspace into the categories of intellectual property (patents, copyrights, trademarks) is not perfect, however. This leads Koepsell into a critical, historical inquiry into legal ontology with the hope of discovering viable modifications. At the base of intellectual property law is the distinction between an idea and materializations of an idea such as inventions (products, machines, processes), names, and expressions. Ideas cannot be protected; they are intangible until written down, mechanized, or performed in some way. Expressions of ideas can be afforded patent, trademark, or copyright protections. The question that Koepsell sets out to answer is where do "computer mediated phenomena," particularly their software, fit into this intellectual property framework? The likely categories are "expressions" and "inventions," but the technology defies their established parameters. Software, defined as "a set of instructions to be used in a computer in order to bring about a certain result," can be "hardwired" into a microprocessor. [p.59] The Courts have categorized software both as a (potentially) patentable machine and as a copyrightable expression. This blurring of categories engendered by the unique qualities of software indicates a need to redraw the ontology of intellectual property. The Supreme Court has held out the possibility of granting patents to software, but until now the usual protection afforded to software designers is a copyright of their source code. The difference between these two forms of protection is more than a technical legal matter, as Koepsell observes. "Copyright protects for longer periods of time," he writes, "but patent protection is stronger, granting total monopoly to the protected art." [pp.94-5]

29. Koepsell's argument is less for a new ontology, and more for a philosophical justification of the application of "a single intellectual property regime" -- an embellishment of the copyright category -- to software innovations. This needs to be put starkly because Koepsell believes that by distinguishing ontology from metaphysics and epistemology, he has escaped the "metaphilosophical" *cul-de-sac*. [p.113] This is not the case. Koepsell argues for a new ontology that emerges in response to conceptual confusions found in the ordinary practices of jurisprudence. Perhaps this diagnosis is absolutely correct. Nevertheless, the ontology is not emerging from within; it is, rather, being imposed from outside the practice. Koepsell is engaged in a reflective enterprise that is second order in relation to legal practices pertaining to patent and copyright law. His main point is to use the authority of philosophy to persuade an audience of judges to redescribe copyright protections in relation to software. Ontology is being used for its rhetorical effect; it bolsters Koepsell's own claim to authority over the correct order of the legal objects found in reality. However, whatever might be gained in persuasive authority (and this is negligible) is lost because the strategy leads the argument away from the audience Koepsell wants to address. This is unfortunate because his argument for re-thinking the legal classification of software has merits.
30. Generally, Koepsell argues that software's paradoxical location between patents and copyrights leads to "inequity and injustice." Specifically, these undesirable consequences can be observed on two fronts: one that has immediacy and a second that is futuristic. Patents grant a limited monopoly for inventions in order to serve two interrelated purposes: they invite innovation by protecting the inventor's ability to make a profit, and they help make inventions available to the public. For software designers, the paradoxical nature of their inventions exposes them to extremely expensive and complicated patent searches. Moreover, what the designer is asked to produce in the patent application is not their unique code, but rather a description of the utility of this invention for prospective users. For a software designer working out of her or his home or small company, the tendency is to use the description to "specify their claims as broadly as possible to ensure the broadest possible protection." [p.100] Rather than invite innovation on the software market, however, this patent procedure has led to a proliferation of lawsuits by large companies with the resources available to drive smaller competitors out of business.
31. The future-oriented goal of re-categorization emanates from some observable current trends and a dose of science fiction. "Nanotechnology will make every conceivable type of object programmable," writes Koepsell. "Like genetic engineering, which involves programming of DNA to create new life-forms, nanotechnology promises to afford humans the ability to construct a possibly infinite variety of new objects. As everyday objects become the subject of

programming via nanotechnology, the distinctions which the current law of intellectual property has drawn will further blur." [pp.103-4] At this point, we begin to appreciate the significance of this argument for re-classification for the democratization of the use of network technology and genetics. What happens to innovation when intellectual property rights do not protect it? There are two answers from the history of technology. One, innovation goes underground and is driven by clandestine operations. For Koepsell, "secretiveness works in opposition to the . . . major purpose of intellectual property law -- promoting the dissemination of new ideas." [p.105] Secretiveness, and here I am thinking of the lessons learned from the Manhattan Project, also works in opposition to political and ethical reflection on the consequences of scientific discovery. Second, innovation devoid of protections simply occurs anyway. The Internet supplies us with many examples of "freeware" and "shareware" that are improved by collaborative efforts. Koepsell cites the game "Doom" as one particularly successful open-sourced enterprise that remains a moneymaker for its company, Id Software, because the rapid innovations in the game's code keep it ahead of the competition on the game market. The erasure of intellectual property is the re-creation of laissez-faire economics. "Intellectual property protection is a form of state-sanctioned monopoly. In the absence of intellectual property protection, monopolies rise and fall naturally in accordance with their abilities to quickly innovate and predict market demands." [p.110]

32. Koepsell backs away from this "world without intellectual property" and argues for an expanded copyright "regime" that would protect software designers, invite innovation and competition, and, presumably, keep the improvements in programming that drive biotechnology and nanotechnology before the public. The larger effect of this expanded category of copyright, which Koepsell calls "the new ontology of cyberspace," is to expose the line between virtual and physical reality as pure fiction. Any "specialness" attributable to software design has been shown to be an effect of novelty and not an alteration in reality. Koepsell closes with a quote from the author who coined the term "cyberspace" in his novel *Neuromancer*, William Gibson. "It's not [a question of the line] between real and unreal -- it's between real and real. The only reason we see that dichotomy [between real and virtual] is because we are old." [p.130]
33. For younger people, it is true; the divide is all but invisible. In LamdaMoo, a collaborative, text-based virtual reality site studied by Beth Kolko, there was an event that underscores this. This event was widely reported, but I am using Lawrence Lessig's version.<sup>6</sup> The story centers on "Mr. Bungle," a character in LamdaMoo who was skillful enough at the game to acquire special "voodoo" power. As Lessig describes it, "he could take over the voices and actions of other characters and make them appear to do things they did not really do." [p.74] One night, 10 P.M. Pacific Standard Time, Mr. Bungle entered the site, invoked his voodoo power, and took control of several female and one sexually nonspecific avatars who were conversing in a LamdaMoo room. "Once they were in his control, Bungle 'raped' these women, violently and sadistically, and made them seem as if they enjoyed the rape." [p.75] This went on until an avatar with superior powers could be summoned to break the spell cast by Bungle. For Lessig, the story is told to illustrate his claim that such sites can be designed to be self-governing. Mr. Bungle was liquidated. My first reaction was anger at the use of the word "rape" to describe what happened here. Actually, this is still my strongest response. But the responses by the "victims" of this act should not escape us. These gamers invested so much of themselves into their avatars and into the construction of the game site that they were indeed injured. The safety they found in LamdaMoo was undermined. Real world violence had infiltrated their world.
34. At this point, then, the questions we ask about network technology should turn away from the task of demystifying its self-image as a unique enclosure and toward politics. Does this technology improve our lives? How might it be directed to enhance political discourse? What must a citizen know to act effectively? Do we individual citizens require new kinds of protections against an overly energetic government bent on employing the panoptical capacities of the technology? The language we use to describe cyberspace, artificial intelligence, robotics, cyborgs, nanotechnology, and so on, comes from science fiction. Isaac Asimov, William Gibson, H.R. Lovecraft, Neal Stephenson, Ursula LeGuinn, and many others, provided an inventive vocabulary for discussing the technological future. We might also look to fiction

written by scientists, then, to consider the more mundane reality of those born into this future. One example I find particularly affecting and effective is Alan Lightman's *The Diagnosis*.<sup>7</sup>

35. At the center of this novel is a contrast between two forms of life: the circadian rhythms of a human life and the life of a human driven by technology. This is the theme of the novel's main narrative. There is a secondary narrative that serves to remind us that human life was altered by technology thousands of years before the so-called computer revolution. This inner story contrasts the life of Anytus, the successful tanner and war hero who argued for the death penalty for Socrates, and the philosopher himself. Lightman is ahead of us here. He has seen that once the virtual/real line has been erased, once we recognize that cyberspace does not happen in an elsewhere that can be turned on and off, we must consider from a position of immanence the consequences of a world accelerated by digital communication on human life and thought. Where we might succeed in effacing one divide, there are others, less visible, to be considered. This is illustrated in a series of communications between Chalmers and his son Alex. The love for one another is deep and genuine. You see this in their e-mails sent from two rooms in the same house. And herein lies the pain of ironic distance. The stories of Anytus and Bill Chalmers are most unhappy ones because of the corrosive effects of technological pace on intimacy, and on the very sources of trust that serve as the foundation of political society.
36. The respective psychologies of Anytus and Chalmers, despite all the differences in their cultures -- Anytus did not have a cell phone, e-mail, mass transit, etc. -- is fairly similar. This psychological simpatico is possible because of a deep underlying reason that we associate with the linearity of instrumental reason. In surrendering meandering, non-linear, critical self-reflection, both men also surrendered their autonomy. They appear well off financially and in possession of social status that translates into power. But they do not have the freedom to change their minds or their lives even when unhappiness overwhelms them and destroys their health. Neither produces anything that might be considered a significant contribution to their society. Instead, their relations to the forces of production are parasitic. Should the technological host alter its environment, these amphorae either adapt or die or grow to wish they were dead. In the contemporary era, Anytus and Chalmers become symbols. The technological host is capacious enough to support large communities of parasites whose location on the surface give the illusion that they are riding a great metaphysical force. The speed induces a narcosis that cannot support the thought to slow things down. This is Lightman's diagnosis of our era.

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## Notes

<sup>1</sup> See Yi-Fu Tuan, *Escapism* (Baltimore: Johns Hopkins University Press, 1998).

<sup>2</sup> Philip Zhai, *Get Real: A Philosophical Adventure in Virtual Reality* (Lanham, MD: Rowman & Littlefield, Pubs., 1998), p.xiii. See also, Mark Dery, *Escape Velocity: Cyberculture at the End of the Century* (New York: Grove Press, 1996); and Ray Kurzweil, *The Age of Spiritual Machines: How We Will Live, Work, and Think in the Age of Intelligent Machines* (London: Orion Business Books, 1999).

<sup>3</sup> This is the main argument put forth by Lawrence Lessig in *Code and Other Laws of Cyberspace* (N.Y.: Basic Books, 1999). To gain a sense of the various threats to privacy posed by government uses of network technology, see the fine set of articles in Philip E. Agre and Marc Rotenberg, eds. *Technology and Privacy: The New Landscape* (Cambridge, MA: The MIT Press, 1998).

<sup>4</sup> See Marcy Darnovsky, "Overhauling the Meaning Machines: An Interview With Donna Haraway," *Socialist Review* 21,2 (1991): pp. 65-84; Donna Haraway, "A Cyborg Manifesto:

Science, Technology and Socialist Feminism in the 1980s," in *Simians, Cyborgs, and Women* (New York: Routledge, 1991); "Cyborgs and Symionts: Living Together in the New World Order," in *The Cyborg Handbook* ed. Chris Hables Gray (New York: Routledge, 1995).

<sup>5</sup> This is a fairly broad literature. Two of the better such studies are: Joshua Meyrowitz, *No Sense of Place: The Impact of Electronic Media on Social Behavior* (New York: Oxford University Press, 1985); and Stephen Doheny-Farina, *The Wired Neighborhood* (New Haven: Yale University Press, 1996).

<sup>6</sup> The account is found on pages 74-78 of Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York: Basic Books, 1999).

<sup>7</sup> Alan Lightman, *The Diagnosis* (New York: Pantheon Books, 2000).

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letter to the editors

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search

contents

top