

## AFTERWORD: CRITICAL INFORMATION STUDIES

### A bibliographic manifesto

*This paper takes measure of an emerging scholarly field that sits at the intersection of many important areas of study. Critical Information Studies (CIS) considers the ways in which culture and information are regulated by their relationship to commerce, creativity, and other human affairs. CIS captures the variety of approaches and bodies of knowledge needed to make sense of important phenomena such as copyright policy, electronic voting, encryption, the state of libraries, the preservation of ancient cultural traditions, and markets for cultural production. It necessarily stretches to a wide array of scholarly subjects, employs multiple complementary methodologies, and influences conversations far beyond the gates of the university. Economists, sociologists, linguists, anthropologists, ethnomusicologists, communication scholars, lawyers, computer scientists, philosophers, and librarians have all contributed to this field, and thus it can serve as a model for how engaged, relevant scholarship might be carried out. CIS interrogates the structures, functions, habits, norms, and practices that guide global flows of information and cultural elements. Instead of being concerned merely with one's right to speak (or sing or publish), CIS asks questions about access, costs, and chilling effects on, within, and among audiences, citizens, emerging cultural creators, indigenous cultural groups, teachers, and students. Central to these issues is the idea of 'semiotic democracy', or the ability of citizens to employ the signs and symbols ubiquitous in their environments in manners that they determine.*

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Contrary to some reports, Cultural Studies is not in 'crisis'. In fact, as Jan Baetens recently has argued in these pages, some of the most insightful and interesting work in the field bears the marks of concern with cultural policy, intellectual property, and technologically mediated social movements (Baetens 2005). It is not as politically impotent as Todd Gitlin has argued (Gitlin 1997). It no longer eschews consideration of economics, traditional power politics,

labor questions, and real-world impediments to justice and human dignity, if it ever did (Kellner 1997, Garnham 1997, Ross 2003, Ross 2004). And thus it certainly need not serve the interests of political conservatism or market fundamentalism, as Thomas Frank has asserted (Frank 2002). In fact, as Baetans explains, the great potential of Cultural Studies lies in its political commitment and its interdisciplinarity – two features that can yield influential work if and when it makes the appropriate connections to other fields of discourse. After decades of stifling and ultimately boring battles between political economists and Cultural Studies scholars, and between quantitative and qualitative analysts of the cultural industries and their audiences, it's clear that the best work on culture and communication has moved beyond these arbitrary boundaries.

Cultural Studies has further demonstrated its relevance and importance in the ways it has informed another emerging multi- and interdisciplinary field: what I want to call Critical Information Studies (CIS). Critical Information Studies constitutes an inchoate field that considers the ways in which culture and information are regulated, and thus the relationships among regulation and commerce, creativity, science, technology, politics, and other human affairs. CIS captures the variety of approaches and bodies of knowledge needed to make sense of important phenomena such as electronic voting, the state of libraries, the preservation of ancient cultural traditions, or markets for sheet music. It necessarily stretches to a wide array of scholarly subjects, employs multiple complementary methodologies, and pokes its influence far beyond the gates of the university.

Critical Information Studies investigates four dynamic fields of scholarly analysis and debate:

- the abilities and liberties to use, revise, criticize, and manipulate cultural texts, images, ideas, and information;
- the rights and abilities of users (or consumers or citizens) to alter the means and techniques through which cultural texts and information are rendered, displayed, and distributed;
- the relationship among information control, property rights, technologies, and social norms; and
- the cultural, political, social, and economic ramifications of global flows of culture and information.

CIS is not a subfield of Cultural Studies, nor of communication. It is a 'transfield' that both cuts across and gathers together scholars in many fields and disciplines. The pages that follow attempt to give shape, substance, direction, and character to this emerging transfield by constructing a synoptic, narrative bibliography of CIS's key works and commitments.

This Afterword thus is an exercise in taxonomy. As such it is slight of what usually passes for scholarly merit. It makes no grand claims or arguments that

advance knowledge or enhance understanding. This is an attempt at ‘canon formation’, with all the troublesome political and intellectual trappings that accompany an effort like that (Gates 1992, Tompkins 1985). To limit the negative externalities of canon formation, I have included many works I dislike and have made the list of works as broad as possible. I am sure I have omitted many important and excellent works. This Afterword is merely, then, an attempt to make sense of a phenomenon within scholarship that may serve as a model for or an inspiration to others.<sup>1</sup>

## Engaged scholarship

Some time in early 2003 an enterprising cyber snoop found a collection of memos from employees of Diebold Election Systems, Inc. that had been left exposed on an Internet server. That person downloaded the memos and found a rich array of information that indicts the quality and security of the electronic voting machines that Diebold had rented to states and counties across the United States. A community of critics of electronic voting soon took notice of the memos and distributed them among interested parties. Several critics posted copies of the memos on their Websites. Among these critics were several academics and a group of students at Swarthmore College in Pennsylvania.

Diebold already had been stung by negative accounts of their voting machines. They had been implicated in suspicious results in races for the US Senate and governor in Georgia in 2002 (Zetter 2003). And they were the subjects of much rancor after Diebold CEO Wally O'Dell wrote in a Republican fund-raising letter, ‘I am committed to helping Ohio deliver its electoral votes to the president next year’. Many large counties in the important swing state of Ohio were planning on using Diebold electronic voting machines in the 2004 election (Vaidhyanathan 2003).

So when the students at Swarthmore realized the Diebold memos were essential to public debate about the effectiveness, fairness, and security of the American electoral system, they decided to post the memos on their Website, which was sponsored by the college. Diebold responded to the Swarthmore students and hundreds of other activists by sending ‘cease and desist’ letters to Internet Service Providers (ISPs).

Under the US's Digital Millennium Copyright Act of 1998 (DMCA), ISPs are not responsible for the copyright infringements that their users might commit as long as they abide by the law's ‘notice and takedown’ or ‘safe harbor’ provisions (1998). If an ISP receives a letter from a copyright holder accusing a user of hosting copyrighted material without permission, the ISP must immediately remove the offending site if it wants to remain a ‘safe harbor’ and thus shift liability downstream. Although the law offers an

opportunity for Website producers to contest the claim, the ISP need not take a protest seriously. More often than not, the site suddenly disappears (Chillingeffects.org 2003, Vaidhyanathan 2003, Vaidhyanathan 2002b).

After Diebold attacked the Swarthmore students, two significant things happened: First, the Swarthmore administration failed to defend its own students, despite having a Quaker-inspired tradition of principled civil disobedience to unjust laws that stretched back to the abolitionist movement. Second, students, academics, and activists around the world rallied to the students' support. Many offered to host the memos on their own university sites to make a political point: you can't send cease-and-desist letters fast enough to stop a widely distributed online protest movement. Soon, public interest groups such as the Electronic Frontier Foundation (EFF) and the Stanford Center for Internet and Society at Stanford Law School offered to defend the students and launch a counter suit.

The same law that forced the Swarthmore students to lose their Website also allows for those accused of copyright infringement in the digital world one way to fight back: to file a suit accusing the accuser of misrepresenting their copyright claims. Until the Swarthmore students decided to fight back, no one had tested the misrepresentation provision in court. No one was sure how courts would look upon such a conflict. As it turned out, a federal judge ruled in September 2004 that Diebold was liable for copyright misrepresentation and fined the company \$125,000 in damages and fees (2004c). The judge was convinced that these memos are so clearly matters of important public debate that he could not allow copyright claims to shut down their distribution. So the memos once again flowed freely and the public debate about electronic voting machines continues.

The broader political implications of the Diebold-Swarthmore story are clear. Because of the courage and fortitude of these undergraduates, more people learned about the problems with Diebold systems and electronic voting in general. And ultimately, these students provided those who are harassed by flimsy yet censorious copyright lawsuits a potent weapon with which to fight back.

There are also academic issues in play here as well. They may be academic, but they are not *merely* academic. Consider the areas of study that this account flows through: law, computer science, political science, communication, ethics, sociology, and academic administration, to name only a few. Each of these areas would have something to contribute to an analysis of the Swarthmore students' efforts and experiences. The lawyers and activists who helped the students, meanwhile, could use the work of interested scholars so that next time, when a controversy arises over the technologies of democracy, the players have sufficient knowledge to make it a decent – and perhaps more fair – fight.

## What's the point?

I call the field that would best engage controversies like this 'Critical Information Studies'. I do so almost by default. It's a literal derivation of both 'Critical Theory' and 'Information Theory' (Shannon and Weaver 1949), and bears the influence of both, yet is much more than the sum of those parts.<sup>2</sup> There are not three ideal words in the English language that capture the diversity of activity in this field, but these will have to suffice for now. The field is 'critical' because it follows in the tradition and inspiration of Critical Theory (Calhoun 1995, Adorno and Bernstein 1991, Carey 1989). Critical Theory, as developed at the Institute of Social Research in Frankfurt in the 1930s, is explicitly and proudly interdisciplinary. Critical Theory resists naked empiricism and positivism, and favors considerations of 'flows', 'flux', and 'process' to explain human phenomena. However, CIS goes beyond the Hegelian and Marxian roots of early Critical Theory. Its interdisciplinarity demands an engagement with the empirical, specifically the commercial, technical, and scientific. Many of the legacies of Critical Theory – an allergy to technology, disdain of the popular, impatience with the commercial, and cynicism about Enlightenment values – do not correspond to the values expressed in the major works of CIS (Bettig 1996, Boyle 1996, Brown 2003, Coombe 1998, Crews 1993, Drahos 1996, 1999, Drahos and Braithwaite 2003, Fisher 2004, Jenkins 1992, Katz 2004, Lessig 1999, Lessig 2001, 2004, May 2000, McGill 2003, McLeod 2001, 2005, Mosco 1989, Rose 1993, Sell 1998, 2003, Sulston and Ferry 2002, Vaidhyanathan 2001, 2004, Wark 2004, Weber 2004, Woodmansee and Jaszi 1994). Some CIS work (Bettig 1996, Boyle 1996, Benkler 2005, May 2000, Mosco 1989, 1996, Mosco and Wasko 1988, Ryan 1998, Sell 1998, 2003, Wang 2003, Correa 2000, Drahos and Braithwaite 2003, Jaffe and Lerner 2004, Hunter 2004, May 2003, Rimmer 2002) is clearly situated within the practices and assumptions of Political Economy scholarship (Mosco 1989, 1996, Mosco and Wasko 1988). Other works (Benkler 2002, Lemley 2005) bear the influence of the 'Law and Economics' approach to studying regulation (Landes and Posner 2003, 2004, Posner 2001). And some of the most provocative work in CIS emanates from feminist perspectives (Meltzer 1994, Homestead 2005, Bartow 2001, 2005). Some influential work (Rose 1994, Vaidhyanathan 2001) started with questions inspired by Africana Studies and ethnic studies. And much of CIS work that comes out of Anthropology (Brown 2003, Coombe 1998, Golub 2004, Hafstein 2004, Kelty 2004, Larkin 2003, Leach 2005), Communication (Howard-Spink 2004, Galloway 2004, Logie 1999), Library Science (Lipinski 2003, Crews 2000, Crews *et al.* 1987), Literary Studies (Galloway 2004, Homestead 2005, Jenkins 1992, McGill 2003, Rose 1993, Loewenstein 2002a, 2002b, Gaines 1991), Music (Katz 2004), American Studies (Vaidhyanathan 2001), or History (Rose and Anderson 1991) owes much to

work in Cultural Studies (Grossberg 1997, Grossberg *et al.* 1992). The association between traditional Critical Theory and CIS is merely inspirational, in other words, and not definitive.

Regardless of its political goals, scholarship within CIS often engages in 'imminent critique', or critique from within, of copyright and other systems of information and cultural policy, largely because it's virtually impossible for a scholar to work outside the system of copyright and commercial distribution systems (Habermas 1989, Benhabib 1986, Calhoun 1995). As a result, scholars who criticize the status quo often face questions like 'why do you copyright your own work?' and 'why don't you just give everything away for free?' The tensions of imminent critique have motivated some to generate models of ownership and distribution that allow for more flexibility and contribute to a more ethical information ecosystem (Lessig 2004, McLeod 2005). The field is also 'critical' in the common usage of the term: it identifies problems with current trends, common assumptions, and the status quo, and at times suggests reforms and solutions.

'Information' is just as unsatisfying a term. Much of the subject matter of CIS would not qualify as mere 'information'. One may write volumes about modes of creative ownership in Papua New Guinea (Leach 2005), pirate video bazaars in Northern Nigeria (Larkin 2003), the profound effects of cassette tapes on popular music in India (Manuel 1993), or the effects of global technological change and regulation on Kente weavers in Ghana (Ross *et al.* 1998) without ever delving into a discussion of 'information flows' (Dretske 1999, Castells 2000), 'memetics' (Balkin 1998), 'information science' (Von Baeyer 2004), the politics of Internet protocols (Galloway 2004), or a consideration of the mathematical notions that underlie communication (Wiener 1961). But other terms such as 'culture', 'copyright', 'intellectual property', and 'communication', let alone any combination of the many other over-arching concerns that CIS encompasses, would fail to cover the breadth of the field. 'Information' is a bad fit. But, like an ill-fitting suit, at least it's big enough to cover everything, even if it's generally ugly.

I first noticed that I was involved in something radically interdisciplinary when I was compiling the index to my first book, *Copyrights and Copywrongs: The Rise of Intellectual Property and How it Threatens Creativity* (Vaidhyathan 2001). The book was a blast to write. I was able to tell stories about Groucho Marx and Pac-Man. I considered the English Revolution of the seventeenth century and the hip-hop revolution of the twentieth century. But the fun stopped when the writing stopped. The revisions and proof reading were tedious, but tolerable. Building an index, however, is a deeply boring and time-consuming job, easily the dreariest part of the book-creation process. In my giddy, exhausted state of marathon indexing, I started to giggle when I saw that the order dictated by the Roman alphabet had juxtaposed 'James, Rick' to 'James, William'. Besides enjoying visions of strange dinner party

conversations involving the neurasthenic Harvard philosopher and the composer of 'Super Freak', I was tickled by the thought that studying the history of American copyright afforded me the chance to read, think, and write about both pragmatism and funk. Some years later, milling about at a conference discussing the politics and economics of digital rights management with one of America's foremost computer scientists and a law professor from the University of Chicago, I realized that my areas of interest went even beyond the funk. Each of us had to know how to communicate the intricacies of our respective areas of expertise to the other two. And each of us took great interest in the other two's points of view and wells of knowledge. Over the past five years I have had similar experiences with groups of philosophers and poets, musicians and mathematicians, and literature and law scholars. CIS was our common ground.

## The roots

Copyright used to be boring. Rather, for more than two centuries, copyright operated as a lightly structured regulatory system that subtly yet significantly affected both the production and distribution of texts, images, sounds, and code. It was so subtle that the public rarely if ever voiced concern over copyright. It was a well-regarded system, mostly. When reformers emerged to call for an expansion of copyright, a fervent and generally informed debate would ensue in legislatures of Europe and the United States. But these debates rarely punctured the membrane of public concern. Nonetheless, writers such as Charles Dickens, Victor Hugo, Thomas Babington Macaulay, Harriet Beecher Stowe, and Mark Twain took significant interest in copyright and spoke and wrote publicly about it. US jurists such as Joseph Story, Oliver Wendell Holmes, Jr, and Learned Hand wrote stirring and clear dissertations on the role and scope of copyright and its relationship to creativity, culture and democracy (Vaidhyanathan 2001). Still, copyright remained opaque and irrelevant to most scholars outside of law (and many within law). Then, in the 1950s, historians of the book began contributing significantly to the understanding of the relationship among the law, publishing, reading, and authorship. Harry Ransom produced a treatise on the Statute of Anne of 1710, which he described as the 'first modern copyright law' (Ransom 1956).

A decade later a distinguished legal scholar named Benjamin Kaplan delivered a series of lectures at Columbia University School of Law that became a short, pithy, and enjoyable book called *An Unhurried View of Copyright* (Kaplan 1967, Kaplan 2005). And in 1968 University of Georgia law professor L. Ray Patterson published the first users'-rights-inspired history of copyright, *Copyright in Historical Perspective* (Patterson 1968). Meanwhile, literary and social theorists such as Roland Barthes and Michel Foucault began considering

and debating the role of the 'legal person' and its relationship to author and audience (Barthes and Heath 1977, Foucault and Rabinow 1984). As the battle between structuralism and post-structuralism raged on through the 1970s, those influenced by such theories began pondering the 'givenness' of authorship, originality, and the legal structures that both dignify and reify such values.

Anticipating the conflicts that sat poised on the technological horizon, Patterson followed his 1968 contribution with another important work, *The Nature of Copyright: A Law of Users' Rights* (Patterson and Lindberg 1991). Throughout the 1990s the Clinton-Blair neoliberal agenda mixed synergistically with the 'information technology' revolution and the stock market bubble to create the ideal atmosphere for radical changes in copyright and trade law. In a classic example of what law-and-economics scholars call 'regulatory capture' (Posner 2001), the copyright industries – film, broadcasting, music, print, software, etc – lobbied both national legislatures and multilateral regulatory agencies to expand the scope and duration of copyright. The results, after years of lobbying and almost no public deliberation, were embodied in the United States in two laws passed in 1998: the aforementioned Digital Millennium Copyright Act and the Sonny Bono Copyright Term Extension Act. Both acts undermined many of the basic principles of balance and public interest that had kept copyright from being an effective instrument of censorship for most of American history (Litman 2001, Vaidhyanathan 2001).

Alarmed by these radical changes in the law yet inspired both by Patterson (1968) and the radical new work coming from literary and cultural theory, Peter Jaszi of American University's College of Law and Martha Woodmansee of Case Western Reserve's Department of English decided to solicit articles for a conference that would bring together scholars from the legal world and the humanities to discuss these confluences. The results were impressive. Later published in book form as *The Construction of Authorship: Textual Appropriation in Law and Literature*, the collection showed that there were rich troves of work on intellectual property to be mined and cited in many places in the academy (Woodmansee and Jaszi 1994).

One of the articles in that collection served as the inspiration for many who would later consider hip-hop music as a prime site of investigation for the effects of copyright on culture: David Sanjek's 'Don't Have to DJ No More: Sampling and the Autonomous Creator' (Sanjek 1994). That same year cultural scholar Tricia Rose was the among the first to systematically consider the language of digital sampling in hip-hop music and the effects of increased legal enforcement on the political economy of African-American youth in *Black Noise: Rap Music and Black Culture in Contemporary America* (Rose 1994). Soon after, legal scholar James Boyle produced his seminal work, *Shamans, Software, and Spleens: Law and the Construction of the Information Society*, which



demonstrated how powerful interests were 'enclosing' the information commons in areas from language to biotechnology (Boyle 1996).

Rosemary Coombe from York University is both an anthropologist and a legal scholar, so she was ideally placed to consider the complex relationship among systems of legal regulation, the global political economy, and specific modes of cultural production and distribution for her important book, *The Cultural Life of Intellectual Properties: Authorship, Appropriation, and the Law* (Coombe 1998). And in 1999 Lawrence Lessig published the first of what would become three essential works on the corporate takeover of the digital world and the cultural commons: *Code and Other Laws of Cyberspace* (Lessig 1999). By the dawn of the 'digital millennium' Patterson, Woodmansee, Jaszi, Sanjek, Rose, Boyle, Coombe, and Lessig offered scholars a more-than-adequate foundation for exploring the global and techno-cultural issues that soon exploded onto front pages and reached into classrooms, libraries, and living rooms around the world.

## The urgency

My interactions with such a broad array of works and scholars has convinced me of the urgency of making sense of these conversations, of generating a sense of a field (Bourdieu and Johnson 1993) that might unify the work coming out of a set of common concerns and uncommon scholarly enterprises. I concluded that CIS could not have come at a more important time. Throughout the 1980s and 1990s academic intellectual life in the United States was under attack. Academics in the humanities were accused of producing specialized, jargon-filled work that failed to reveal its value and meaning, while raising suspicions that tortured prose concealed weaknesses and worthlessness instead (Culler and Lamb 2003). Conservative critics of the academy accused humanists and social scientists of living in a rarified world warped by political uniformity, constrained by 'speech codes', and twisted by nihilistic French theory (D'Souza 1991). These critics accused 'tenured radicals' of producing inept and inscrutable work that was somehow capable of corrupting the youth of America (Kimball 1998). Many pined for the brief and over-rated period in the middle of the twentieth century, when the United States supported a tiny class of freelance leftist intellectuals who could write spirited, relevant criticism without finding their souls crushed by the demands of academic careerism (Pells 1985, Jacoby 1987). And the academy itself was engaged in mean-spirited debate over the history, culture, and truth-telling power of the natural sciences (Lee *et al.* 2004, Parsons 2003, Ross 1996, Snow 1959, 1969, Sokal and Bricmont 1998, Sokal 2000). Meanwhile, the market value of elite university degrees climbed (Kirk 2003), but not as fast as the cost of acquiring those degrees (Ehrenberg 2000). And the American academy has been accused

of being captured by industry and bending its curriculum and research to the short-term demands of market players, rather than responding to a higher calling of truth and exploration (Washburn 2004).

While some of these arguments are exaggerated or dismissively polemical, each of these diagnoses of illness within the academy carries some kernel of truth. Academic writing in the humanities is needlessly burdened by bad writing about what might otherwise be fascinating subjects. Although market demand for university degrees increases at a stunning clip, despite the remarkable increase in cost (thus leaping off of any textbook demand curve), Americans of various persuasions have registered frustration with the academy's perceived distance from their concerns. Many US-based academics do a poor job of reaching beyond their journals and seminar rooms to convince their patrons (taxpayers, mostly) of their relevance and importance. Humanities and Social Science departments at many major research institutions can seem politically uniform when matched against the narrow definitions of dissent within the American political sphere (then again, for every Berkeley there is a Texas A&M, and for every Harvard there is a Baylor). Those in the natural sciences often fail to 'get' those in the human sciences and vice-versa. Jargon in every field inhibits cross-disciplinary exploration. There is certainly a dearth of cross-disciplinary scholarly work that might expose each side of campus to the most interesting minds on the other. And there is a constant competition for resources among areas of study that the humanities continue to lose. After surviving the 'culture wars' and the 'science wars', academics should be exploring ways to do things better.<sup>3</sup>

### **Code switching: activism and Hacktivism**

Because scholars in CIS hope to reach beyond their immediate cohorts to influence the broader conversation, they have an incentive to write jargon-light prose, or at least to 'code-switch' in a way that finds purchase with a wide scholarly audience. Economists write so that lawyers and engineers can understand them (Liebowitz 2005). Computer scientists write so that English professors can understand them (Felten 2004). This demands not only employing inclusive diction, but making the work accessible to people beyond the specific discursive community from which it comes. CIS scholars from the sciences cite and seek out work from the humanities and social sciences. And humanities scholars take inspiration from the powerful arguments about openness and access to knowledge that scientists make so well. The politics of CIS do not map comfortably along standard American left/right axes. CIS contributors include conservatives, libertarians, liberals, socialists, social democrats, and anarchists. Christians and atheists have a stake on the issues raised by CIS. And controversies over copyright, technology, corporate

control over information, and access to knowledge easily flow across newspaper pages, generating widespread curiosity about these issues. As a result, even the most high-level, advanced work within CIS can find its way into surprising and exciting places.

For example, Yochai Benkler of the Yale University School of Law has written an influential article called 'Coase's Penguin, or, Linux and The Nature of the Firm' (Benkler 2002). The article is not an easy read. It reaches into economic theory and history. It contains many references to specific modes of computer software production. It is steeped in legal references. It's not likely to fit in *Harper's Magazine* or *The New Republic*. Benkler published it in the *Yale Law Journal*, so it is chiefly accessible via the standard sources of legal scholarship – paper journals in law libraries and in electronic text from Lexis. Legal scholars and law students were certain to make use of the paper, simply because it appeared in a prestigious journal and because Benkler enjoys much cultural capital within the technology, communication, and intellectual property areas of legal scholarship. Yet Benkler's article has been cited in more than 6,000 Websites and more than 40 scholarly works. It is one of the most influential law review articles in the emerging field of CIS. Despite the depth and profundity of Benkler's paper, it reached a broad and diverse audience in part because he made it available in electronic form on his own open Website.

Another telling example of this phenomenon concerns a paper called 'Property, Intellectual Property, and Free Riding' by Mark Lemley (2004) of Stanford Law School. Soon after Lemley posted a version of the paper on the Social Science Research Network (SSRN), which any Internet user can search and access, the popular computer hacker Website Slashdot carried a brief notice of the paper (2004a). Within hours, thousands of people downloaded Lemley's paper from SSRN, making it one of the most popular papers in the history of SSRN. Many non-scholars offered comments about the paper on Slashdot. And Lemley credits the Slashdot publicity for the conversations he subsequently had with economists and others. These conversations improved the final, revised article (Lemley 2005).<sup>4</sup>

Many CIS contributors translate their more rarified scholarly work via blogs and other open Websites. The best example of this is Edward Felten of Princeton University. Felten, a computer scientist, is an expert in encryption research. He also has testified in hearings and submitted legal briefs in some high-profile copyright and technology cases in recent years. While his scholarly work conforms to the standards of computer science literature, he explains his work and his papers on his popular Weblog, 'Freedom to Tinker' (Felten 2004). The list of CIS scholars with Weblogs is long and impressive. It includes notables such as Lawrence Lessig of Stanford Law School and Federal Judge Richard Posner (Becker 2005). Often scholars announce the publication of drafts of their work and invite feedback through their Weblogs.

CIS scholars necessarily engage with matters of public interest. Questions about the cultural, social, legal, and political effects of information and communication technologies have become central matters of global public concern. As the sets of cultural producers and consumers intersect, the marginal price of distribution of information and cultural products drops to zero, and global communication networks link disparate bodies of work and people who engage with that work (Appadurai 1996, Castells 2000, Vaidhyanathan 2004), more people take an interest in the policies that govern how information and information technology get distributed and used (Vaidhyanathan 2005b). Therefore, many CIS scholars have reached beyond spheres of scholarly discourse to influence both general public perceptions and specific policy matters. Public interest organizations such as the Electronic Frontier Foundation, Public Knowledge, and Creative Commons employ CIS scholarship when pursuing their agendas in courts, legislatures, international governing bodies, and the public sphere. Lawyers working for the public interest side of recent landmark copyright decisions (2001, 2003, 2004b) have cited CIS work in their briefs submitted to Federal Courts. By all indications, CIS has succeeded in changing the terms of the conversation about issues such as copyright, cultural policy, and the relationships among democracy, culture, and technology. More practically, CIS has helped generate the 'open content' and 'open journals' movement, which allows authors and artists to retain more control over the ways that publishers exploit their work and enables authors to 'lock content open'. CIS not only has made its arguments, it has lived its arguments.

## Interrogations

From the above list of works, which is far from comprehensive, we can derive a rough definition of CIS: *Critical Information Studies interrogates the structures, functions, habits, norms, and practices that guide global flows of information and cultural elements. Instead of being concerned merely with one's right to speak (or sing or publish), Critical Information Studies asks questions about access, costs, and chilling effects on, within, and among audiences, citizens, emerging cultural creators, Indigenous cultural groups, teachers, and students. Central to these issues is the idea of 'semiotic democracy', or the ability of citizens to employ the signs and symbols ubiquitous in their environments in manners that they determine.*

There are two key points within this definition that deserve elaboration: the commitment to moving beyond negative liberty and to promotion of semiotic democracy. A focus on 'negative liberty' alone rests on a presumption that only classically liberal choices are valid and proper (Berlin 1958, 1979, Ryan and Berlin 1979). In other words, the negative liberty of speech implies that the state should do little or nothing to impede free speech, but need not

do anything to foster more, or more diverse, speech. A position advocating a 'positive' speech right would focus on the quality of speech and its function in democratic culture or a democratic republic. Positive liberties thus demand that the state foster spaces, technologies, norms, and processes that maximize certain kinds of speech (Sunstein 1993, Sunstein 2001, 2003).

Applied to CIS, an emphasis on negative liberty would mean scholars would be primarily – perhaps exclusively – concerned with 'users' rights': the legal space to use and re-use cultural material and information. The American 'fair use' provisions are one example of a negative liberty within copyright law. Fair use is a defense one can use against an accusation of infringement. It's a limit on the rights of copyright holders, and thus it limits what the state may do to enforce copyrights (Vaidhyanathan 2001). Concerns about copyright enforcement increasingly serving as a threat to personal privacy through widespread electronic surveillance technologies concerns negative liberties as well (Katyal 2004). Privacy, in fact, has emerged as one of the most contested and interesting areas of information regulation. Questions about whether one does or should have the 'right to read anonymously' (Cohen 1996), the prevalence of 'digital dossiers' (Solove 2004), and to what extent the state- and corporate-run 'panopticons' limit personal expression (Gandy 1993) should concern anyone who observes the dynamics among technology, democracy, and culture. Any state sanction or regulation that restricted users' rights would be suspect as an encroachment of negative liberty.

But a concern with positive liberty within CIS is potentially richer and more interesting. CIS scholars who: advocate for the proliferation of 'open source' software (Vaidhyanathan 2005a); champion 'open systems' and 'open standards' of publication and communication (Benkler 2002); believe that 'code is law' (Lessig 1999); or campaign for widespread availability of cultural products and information at low cost (Fisher, 2004) all are concerned with positive liberties as well.

Beyond the text of the scholarship, the commitment to positive liberty comes through most clearly in the projects and experiments that facilitate access to and use of scholarship and information: chiefly the development and proliferation of open access journals, open courseware, open curricula, and open archives (Lerman 2002, Abelson 2002). In addition, revolutionary experiments like Creative Commons and its cousin, Science Commons, derived directly from the work and concerns of CIS scholars such as Lawrence Lessig, James Boyle, and Hal Abelson. They in turn had been inspired by the tremendous success of Free and Open Source Software (Weber 2004), and presumed that similar rules and norms could be applied to other forms of creativity such as music, video, animation, and text (Lessig 2004).

The commitment to 'semiotic democracy' unites computer scientists who are concerned with the ability to use computer code freely with cultural

scholars who celebrate culture jamming. Semiotic democracy and its broader relation, cultural democracy, are values that respect an audience's (or a citizenry's) rights and abilities to manipulate, comment on, criticize, and play with the signs that their culture makes available (Fiske 1987, Gans 1999, Doss 1995). The most radical forms of cultural democracy would undermine or prohibit cultural regulatory structures such as content regulations, trademark, or copyright laws (Vaidhyanathan 2004). Within CIS, the emphasis on semiotic democracy and cultural democracy is so overt and central (Fisher 2004, Lessig 2004) that it easily moves the locus of discussion from the terms of copyright restrictions to questions of information access (Vaidhyanathan 2004), the meaning and regulation of celebrity (Doss 1999), and critical reactions to mass branding (Dreyfuss 1990, McLeod 2005, Klein 2000, Fahimian 2004).

Recently, Fordham University Law professor Sonia Katyal proposed that 'semiotic disobedience' has arisen as a global form of resistance against the privatization of culture and civic space and as a vital assertion of the values of cultural democracy (Katyal 2005). So by paying particular attention to the dynamics of cultural and semiotic democracy, CIS scholars are revising and extending the work that Cultural Studies outlined and championed in recent decades. Cultural studies inspired scholars to pay close attention to how meaning is made on the ground and in the streets. It produced a flexible paradigm that urged scholars to listen to those who found ways to re-use and re-read the cultural materials forced upon them by corporate producers (Baetens 2005). Thus, by linking these observations of public meaning-making to questions of regulation and control, CIS has helped move semiotic democracy to the forefront of concern for individuals groups both inside and outside the academy.

## Challenges and limitations

Within this broad category of scholarship we can find many flaws and faults. The most glaring is the Anglophonic monopoly over influential scholarship in the area. With some notable exceptions (Correa 1995, 2000, Correa and Yusuf 1998, Hugenholtz and Koelman 2000, Hugenholtz *et al.* 1996, Vieira 2003, Elkin-Koren *et al.* 2002, Elkin-Koren and Salzberger 2004), the work that dominates the citations in CIS work comes from English-speaking scholars or appears in English. And most of the remainder is of European origin. Scholarly voices from India, China, Brazil, Egypt, South Africa, Indonesia, and Russia rarely find their way into bibliographies. This is major challenge for CIS, chiefly because those countries are the sites of the most interesting and intense battles over information technology and the globalization of cultural products and texts.

In addition, because much of the most influential work is both American and philosophically liberal (Lessig 2004, Vaidhyanathan 2001), it rings flat in parts of the world where liberalism is not taken for granted. The fight to expand and maintain the 'public domain', that body of works that lies outside of regulatory control such as copyright, does not appeal strongly to those who see the public domain as a threat rather than an opportunity (Brown 2003). For instance, many ethnic groups that have been denied cultural autonomy under authoritarian colonial or post-colonial regimes see the lack of regulation over cultural signs and symbols as a danger to their religious values and cultural vibrancy (Coombe 1998, 2004). It's clear that CIS must get beyond its American roots and consider how every change in the information ecosystem is global. Its effects will be widespread and largely unpredictable. And many more voices deserve to be heard in the debate. It will take an active curiosity and program on behalf of scholars and editors to ensure that the conversation is more inclusive.

The second serious challenge to CIS is its institutional dependence. CIS scholars work chiefly for university administrators, many of whom consider the mission of the institution to be that of both 'content provider' and 'content consumer'. Often the very policies of the university work against efforts to freely distribute essential information at low cost (Washburn 2004, see also Striphas and McLeod's introduction to this issue). Too often, academic leaders forget their ethical duty to the community of scholars and world citizens at large. They rabidly protect their 'intellectual property' to the detriment of the scholarly world (and the species) as a whole, and as such many suffer from what I call the 'Content Provider Paradox' (Vaidhyanathan 2002a). In addition, scholars themselves often overreact to perceived 'threats' that someone is teaching 'their' course or relying too heavily on 'their' data. This is an unhealthy and anti-intellectual disposition magnified by the general tenor of the times. Foolishly, however, scholars continue to sign away all their rights to their scholarly work to commercial publishers, who then sell their work back to their libraries at great cost. Recognizing this absurdity, some scholars have insisted on publishing their work with Creative Commons licenses, ensuring that the general public and not just patrons of expensive research libraries may read, quote, and improve on their work. And the Open Journals movement, led by the Public Library of Science and the Science Commons, also promises to let scholars contribute to the greater good while ensuring effective peer review and distribution of work (Harnad 2004). Still, many tenure committees outside of the sciences have yet to learn that open journals are better and that the commercial journal publishing process as it now stands is unethical. Indeed, it will take many years to wake scholars from the false consciousness of the academic-publishing industrial complex.

Meanwhile, every scholar committed to CIS should insist on retaining some of her or his rights to publications and making them available as widely

and cheaply as possible. Demanding that a publisher allow the use of a Creative Commons license is a start. If a few senior scholars withhold publication from unethical journals, then the publishing world will have to negotiate and concede that Creative Commons offers no threat to their business but greater opportunity to attract consumers. And if they do not, then scholars should found their own open journals through scholarly associations and sever ties with commercial publishers. In this way, CIS scholars can change more than the conversation about culture, control, commerce, and copyright. They can affect the workings of an industry in flux and better serve their mission to educate and illuminate the remarkable times in which we live.

## Notes

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- 2 The initials CIS also sometimes describe 'Computer and Information Studies'. Alas, I was limited to 26 letters of the modern Roman alphabet. I hope that the other CIS scholars forgive my trespassing on their mark.
- 3 More Americans believe in UFOs, angels, and ghosts than believe in evolution by natural selection (Angier 2004). And oddly, higher levels of education do not significantly deflate pseudoscientific beliefs nor bolster belief in solid scientific concepts (Massimo 2004). So we are all failing in our efforts to train students to think critically.
- 4 In the case of my own work, a hacker who uses the handle 'Beale Screamer' cracked the digital rights management (DRM) scheme that was to protect music distributed by Microsoft. In the notes appended to the program that cracks the DRM code, distributed widely on hacker bulletin boards, Beale Screamer quotes several sentences of *Copyrights and Copywrongs* (Screamer 2001).



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