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2004

Introduction

Monroe E. Price
University of Pennsylvania, monroe.price@gmail.com

Helen Nissenbaum

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Recommended Citation
Price, M. E., & Nissenbaum, H. (2004). Introduction. In H. Nissenbaum & M. E. Price (Eds.), *Academy and the internet* (pp. ix-xxi). New York, NY: Lang Publishing. Retrieved from http://repository.upenn.edu/asc_papers/148

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Introduction

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Introduction

Helen Nissenbaum and Monroe E. Price

In all the attention given to the Internet as a phenomenon affecting society, there is precious little that looks at the way in which the organization and implementation of research, itself, is potentially altered or even transformed. Yet the impact of the Internet on the creation and recreation of research agendas in the social sciences is a rich area for study; it is a subject worthy of attention, especially when external circumstances lead to changing demands, changing needs, and a changing policy environment. Groups of scholars act within a network of influences that shape zones of inquiry and research styles. One can look, across disciplines, at the influence of funding sources, at the brilliant and flashing influence of imaginative scholars, at the influence of altered modes of evaluating academic departments and changing standards for tenure. Scholarship is affected by fashion, by the assumptions of publishers about markets, and about the changed agendas of editors of scholarly journals. In academic life as well as in Wall Street, the Internet has inspired trends, but out of these some longer lasting insights emerge. The Internet has shifted publishing priorities, altered strategies of funding, and, as a result, been a substantial factor in its impact on the academy in ways that are largely unexamined.

The essays in this book arise from the phenomenon of adaptability of the scholarly project. The Internet and its impact on society has been a matter, quite appropriately, of focus by scholars across disciplines. We are not here assessing *whether* the Internet has had impact; it is a starting assumption of this book *that* it has had a substantial impact and has already affected people, societies, and institutions. We confine ourselves to a much narrower inquiry: how scholars report and conceptualize that impact. First a subject for science fiction, then a subject for engineering and computer science, the Internet inspired a cohort of talented popular writers such as Steven Levy and Katie Hafner, futurists, such as the Tofflers and Nicholas Negroponte (wearing a different hat), and countercultural visionaries, such as Howard Reingold and John Perry Barlow. Finally, it entered the realms of the academic social sciences themselves, where theories and methods were brought to bear not

always on questions grand and overarching, but, as time passed, on issues that were more fine grained and qualitatively varied. Scholarship is hardly independent of modes of cooperation. And, the idea of the Internet would give rise—in conjunction with other new information technologies—to new organizations, new departments, new collaborative enterprises that played with the notion of the interdisciplinary. Throughout, however, accommodation and change occurred within traditional disciplines, and research concerning the Internet and its impact on society was established, to a greater or lesser extent, within existing debates, existing structures, and existing thematic approaches.

In conceiving this book, then, our observation was that the last decade has been a period when many fields and disciplines are driven to adjust to the intellectual consequences of the coming of the Internet and new information technologies. Sociologists, lawyers, anthropologists—scholars in a vast variety of fields—are determining how transformations in information technology alter questions historically asked or pose new policy issues that require scholarly analysis to resolve. It is useful to draw back, to consider how the Internet alters the agenda of scholarship across many disciplines.

The function of this book, then, is to explore, across and beyond the social sciences, the impact of the Internet (as a subject, not as a technique) on what scholars are doing. We sought to gather together a wide range of authors, recognized in their fields, geographically diverse, engaged in the spectrum of disciplines, involved in various schools of research concerning the pressures new technology place on existing work. The goal, unreachable, was to provide as close to a comprehensive view of Internet-related research and scholarship as can now exist. The aspiration was for a series of essays that would assist in evaluating new departures in research.

Such studies are useful to those funding research both within and without government and to those seeking to determine the relationship of research to the ethical, social, and political challenges the new information technology presents.

Research is a social enterprise, and it manifests the sharing of observations and insights. These essays cast light on how the process of defining and shaping areas of inquiry occur with a discipline, how scholarship socializes concerning an important question such as the impact of the Internet on society. There are other aspects of scholarship as a social enterprise where far more needs to be said. We know too little about the specific relationship between funding sources and scholarly output. Foundations, private corporations, government agencies—each have agendas reflected in their sponsorship of work.

The various chapter authors have been asked to suggest, in each of their disciplines, how fields of inquiry are being redefined, and what issues of social change are looming as the most important from their perspectives on the academy. They have been asked to render a conceptual photograph of their fields and explore how their discipline is coping with the impact of information technology. The essays highlight significant zones of inquiry and provide a critical perspective on the direction each discipline is traveling. Policy approaches, empirical research, and theoretical questions are part of these essays.

Paul DiMaggio et al. set the stage with a discussion of the general issue:

> [T]he medium's rapid growth offers a once-in-a-lifetime opportunity for scholars to test theories of technology diffusion and media effects *during the early stages of a new medium's diffusion and institutionalization*. . . . [T]he Internet is unique because it integrates both different modalities of communication (reciprocal interaction, broadcasting, individual reference-searching, group discussion, person/machine interaction) and different kinds of content (text, video, visual images, audio) in a single medium. This versatility renders plausible claims that the technology will be implicated in many kinds of social change, perhaps more deeply than television or radio. Finally, choices are being made—systems developed, money invested, laws passed, regulations promulgated—that will shape the system's technical and normative structure for decades to come. Many of these choices are based on behavioral assumptions about how people and the Internet interact. We believe such assumptions should represent more than guesswork.

Finally, these essays mark a transition. In the heady days of the mid-1980s to mid-1990s, populists, futurists, visionaries, idealists, academic scholars, and researchers in the humanities, social sciences, law, and technology forgot the walls that separated them, drawn together by a common fascination with a potent, new, social, and technological phenomenon—the Internet and related digital electronic technologies. Enraptured, as they were, with these technological marvels and their social possibilities, researchers and scholars willingly marginalized themselves, defying strictures of established disciplines that had not yet come around to absorbing the Internet as legitimate subject matter. The upshot was a great mingling, not only among academics from multiple disciplines but also between thinkers and writers within the academy and thinkers, activists, and professionals outside the academy with whom they sometimes shared more in common than with colleagues in their home fields.

Over time, established social sciences and humanities demonstrated their capaciousness, moving—sometimes eagerly—to embrace within their realms the study of the Internet. Positive results flowed: departments sought to hire relevant experts, changes took root at basic institutional layers (e.g., schools and departments of "information," departments and schools of "communication" and "new media"), and countless new subspecialty journals sprung up. Furthermore, as the essays in this book admirably demonstrate, research and scholarship, engaging the full spectrum of academic hierarchy from graduate students to full professors, burgeoned. But tolerant embrace *within* disciplines also has resulted in a retreat back into disciplinary folds and increasing disciplinary insularity. Many researchers are unable or unwilling to stay abreast of significant work outside their boundaries, they gather at discipline-based conferences, and, perhaps saddest of all, they have allowed walls of disapproval to grow, particularly regarding fundamental results and varying methodologies. If the brief interlude when the Internet (and information technology, generally) served as a preemptive organizing theme has passed, how far have we or will we go toward business as usual?

In structuring most essays in this volume around disciplinary themes, we have capitulated partly to the notion that established disciplines have absorbed the study of Internet within their boundaries. Nevertheless, in bringing the essays together in a single volume, we are seeking to further cross disciplinary curiosity. We are betting, and also hoping, that our project is not anachronistic, that Balkanization is not complete, that the Tower of Babel has not progressed far enough to make the effort irrelevant. And, indeed, we nourish a hope that the volume itself will contribute to keeping the walls porous so all may continue to benefit from the good works of others, no matter its origin—sociologists from philosophers, lawyers from aestheticians, economists from communications scholars, anthropologists from policy researchers, and vice versa.

The Chapters

We turn, then, to our authors. Roy Rosenzweig documents the early scholarship among historians about the foundation and development of the Internet. According to Rosenzweig, the Internet has not yet gained prominence in the mainstream academic study of history, perhaps, he speculates, because it is still too new. Historical works of high quality have, however, been produced for broad readership, on the one hand, and, on the

other, within the specialized field of history of technology. Works for general audiences, such as those by Bruce Sterling, John Naughton, and Katie Hafner and Matthew Lyon, well researched and engaging as they are, tend to be what Rosenzweig calls "great man" histories, emphasizing biographies of key characters involved in the process of envisioning, planning, funding, and, finally, building the Internet's technical elements. This approach downplays other crucial contextual dimensions. Although other works have paid greater attention to institutional factors, some have been biased in emphasis probably by sources of funding. Many also lack attention to the larger political and economic context.

Works that have attended to these broader contextual themes usually are found in the specialized area of history of technology. Examples include Michael and Ronda Haubens's book on "Netizens," Janet Abbate's history of the Internet, and Paul Edwards's book on the essential role of the military establishment in developing computing applications more generally, including the Internet. In a short space, Rosenzweig covers significant ground; highlighting the contextual themes that each of these works (and others) brings to our general historical appreciation of the development of the Internet. Thus, Edwards argues that the Cold War and Cold War values fostered and were engineered into digital computers and the Internet. The Haubens develop the theme of user or consumer (Netizen) contribution to the ultimate shaping of the Net, highlighting the contribution of countercultural values and antiwar sentiments. Although Abbatte acknowledges military influences in some of the values embodied in the Net—survivability, flexibility, and high performance—she traces important bottom-up influences of users, graduate students, and hackers, who emphasized openness and open access, values that are embodied in the hugely significant TCP/IP open standard.

Despite these rich contributions, Rosenzweig contends that historical understanding of the Internet needs the marriage of existing approaches with fully contextualized social and cultural history, locating the story of the Internet within its multiple social, political, and cultural contexts. "Such a profound and complex development cannot be divorced from the idiosyncratic and personal visions of some scientists and bureaucrats whose sweat and dedication got the project up and running, from the social history of the field of computer science, from the Cold Warriors who provided massive government funding of computers and networking as tools for fighting nuclear and conventional war, and from the countercultural radicalism that sought to redirect technology toward a more decentralized and nonhierarchical vision of society." But, if Rosenzweig is right, we may

need to wait a little longer, until the Internet gathers more dust and mainstream historians fix their sights on it.

In the essay on sociology and research on social uses of the Internet, by DiMaggio et al., the authors summarize research that reflects on the Internet's potential contributions to social change, focusing on five domains: inequality (the "digital divide"); community and social capital; political participation; organizations and other economic institutions; and cultural institutions. They trace how, in each domain, utopian claims and dystopic warnings based on extrapolations from technical possibilities have given way to more nuanced and circumscribed understandings of how Internet use adapts to existing patterns, permits certain innovations, and reinforces particular kinds of change. They indicate how Internet-related research is connected with the great scholarly themes that preexist in the social sciences and suggest a range of empirical questions one must answer to understand the Internet's influence on society. As they pursue this research, they find that from the Marxian and Weberian traditions come concerns about power and inequality in the access to the new technology. From a Durkheimian perspective arises sensitivity to the new media's impact on community and social capital. A strain relating to Habermas and Calhoun leads to asking how the Internet may alter the practice of politics. And the Weberian tradition raises the question of the effect of Internet technology on bureaucracy and economic institutions. Critical theory raises important questions of how the Internet may affect the arts and entertainment media.

The authors conclude by asking what results there are of research undertaken by social scientists and suggest that the nature of that impact will vary depending on how economic actors, government regulation, and users collectively organize the evolving Internet technology. The essay concludes that "sociology has been slow to take advantage of the unique opportunity to study the emergence of a potentially transformative technology in situ. Too much of the basic research has been undertaken by nonacademic survey organizations, yielding theoretically unmotivated description at best, and technically flawed and/or proprietarily-held data at worst."

The essay on anthropology builds on Miller and Slater's work on the ethnography of web sites, but broadens it to include other studies including the cultural adaptation by corporations of new technologies, and the extensive work concerning gender-related patterns of adaptation to the new information technologies. In their essay, Miller, Slater, and Suchman locate two groups of studies by anthropologists (and related social scientists), one that emphasizes aspects of new technology creation, including both the ethnographic study of technology research and development, and

possibilities for the incorporation of ethnographic approaches into practices of design; and a second group that comprises ethnographies of new media consumption and use within everyday communicative practices. They also ask whether this kind of dualism is useful and explore ways of breaking it down. A division between production and consumption, they conclude, belie the realities of information technology design and use. "Ethnographic projects open up the possibility of replacing the simple designer/user opposition with a rich, densely structured landscape of sites and practices within which new information technologies are generated, and through which they have their profound and particular effects."

In the article by Doris Graber, Bruce Bimber, Lance Bennett, Richard Davis, and Pippa Norris, we see at least two ways in which the Internet has entered the realm of research and scholarship in politics. One is in the body of work dedicated to uncovering the impacts of the Internet and World Wide Web on politically significant social phenomena. Here, Graber et al. have focused their review on the considerable body of work studying causes and consequences of varying but *specific* politically significant effects, paying particular attention to three: (1) the digital divide; (2) civic organization and political mobilization; and (3) electoral politics.

Their review finds that in the arena of electoral politics, where great impacts had been predicted, we have yet to experience systematic change, even though in some areas, such as how much voters know about candidates' positions, the Web does seem to have caused notable change. The digital divide, which refers to the increasing gap between rich and poor people and nations caused by differential access to information technology, remains a complex story. Accounts of the digital divide, based on a combination of speculation, theoretically driven analysis, and relatively sparse data suggest that technology does, in some ways, further disadvantage poor people and nations as access to information becomes increasingly important to thriving. But at the same time there is hope that poor people and nations can use digital connectedness to make contacts or seek relevant information that was not previously available to them (e.g., in job seeking) and can spread word about themselves (e.g., villagers seeking a wider customer base for their crafts). But the most robust effects can be seen in the arena of civic organization and political mobilization, where the Internet and Web, with their capacity to support robust, fluid network structures, have facilitated waves of immensely successful, highly publicized antiestablishment activism. Research also has focused on uses of the Internet that help mediate and activate locally based or interest-based communities.

The second way in which the Internet enters the realm of academic research in politics is less direct. The focus is not on social and political impacts themselves but on what the Internet might be able to teach researchers and scholars about their field of inquiry, its theories and methodologies. The Internet can be seen as a test bed. How well have existing organizational theories dealt with Internet-mediated political mobilization? Do theories of media effects make sense in the context of new media? Does citizen involvement in politics increase as access to "voice" increases? Because the Internet introduces new variability, it has the capacity to test or challenge long-held truisms and, in turn, to offer new insights.

Paul David raises a problem that applies across disciplines. What the first economists to enter the field understood well, he writes, was the pre-Internet world of telecommunications. The question is how far it is possible to go on the basis of understandings gained in contexts that have some similarities, but within which the subject of interest appears quite anomalous. Economists working in this area have tended—for rather too long—either to avoid focusing on the points of divergence between connection-oriented and connection-less communications system, or, to propose "solutions" for perceived "inefficiencies" that would have the effect of bringing the economics of the Internet more closely into line with that of the class of telecommunications systems with which they were already familiar. He calls on economists to work more closely with members of other disciplines in assessing the societal implications of specific proposals to modify the technology and governance institutions of the Internet. He seeks a transformation of "Internet economics" into a more policy-relevant area of inquiry; a "subdiscipline effectively defined by its recognition of the distinctive technical constraints and potentialities of the existing technology, as well as by the regulatory issues posed for the Internet industry by its coexistence with industries and institutions that originally were formed on the basis of quite different communication facilities." In reviewing the literature, David notes an early thrust of "naturalizing" the subject matter by "focusing on those generic features that were common to broader categories of economic activity and public policy, particularly that affecting the telecommunications sector." Another area involved challenges for the design of resource allocation mechanisms that would render the Internet more efficient as a system of communications, including pricing, blocking, and protection of users from denial of service attacks. According to David, as to many of these "problematic" aspects of the Internet, the technical specifications responsible for the performance capabilities of the Internet

also were characteristics that its users perceived to be its uniquely beneficial properties.

Deborah G. Johnson, the author of the definitive textbook *Computer Ethics,* discusses the influences on ethical thinking in philosophy not only of the Internet but of digital computing in general. This broader frame reflects Johnson's preference for organizing her subject area around ethical concepts and themes. Here she departs from approaches that have organized content around particular developments in computing, such as databases, control systems, games, artificial intelligence, as well as the Internet, and identify one or a constellation of ethical themes or values associated with them. And her approach also differs from those that deal with issues as they emerge within specific sectors, such as workplace, military, or health care.

Johnson considers most profound among the works taking traditional ethical approaches those that deal with meta-theoretical and methodological issues. In them, philosophers reflect on the nature of the ethical questions raised by use and development of information technology in society, whether it is merely another branch of applied or professional ethics, or whether "computer ethics" is sui generis, demanding novel philosophical thinking. Johnson's answer seems to fall somewhere in between the extremes. Because information technology mediates and "instruments" novel types of actions, traditional philosophical concepts and theories may not be immediately applicable. In this category, she includes cybercrime, virtual reality, special duties of computer professionals, and digitally mediated invasions of privacy. These newly instrumented action-types demand creative insights to draw them into the orbit of mainstream philosophical approaches. While straightforward application of existing theories is not productive, Johnson contends that useful insights have emerged from the body of great philosophical works on ethics and human values, including utilitarian, deontological, virtue-based, contract theoretic, existentialist, and phenomenological. Philosophers also have begun to draw on crucial insights from inquiries in the neighboring field of science and technology studies.

Nicholas Jankowski, Steve Jones, Kirsten Foot, Phil Howard, Robin Mansell, Steve Schneider, and Roger Silverstone explore how communication studies (journalism, broadcasting, telecommunication, speech, and rhetoric) has been affected by the Internet, including not only the substance and methods of scholarship but also institutional and educational contexts that house it. Instead of itemizing these changes directly, their chapter tracks the impacts of the Internet on communications research and scholarship through three avenues: (1) how universities are responding with new educational programs; (2) how scholars are pursuing conventional

concerns of the diffusion and adoption of new communication technologies in light of the Internet; and (3) how the Internet has stimulated new research approaches that relate data collected about producers, users, and content.

They have not, however, charted these changes in general, but have developed individual case studies, each illustrating one avenue of response. Through a detailed description of one university's response, the London School of Economics, we learn of the challenges of building a program that acknowledges the importance and novelty of the Internet as an object of study, without "fetishizing" its newness; benefiting from the strengths of traditional social sciences (sociology, political science, economics, etc.) without succumbing to cynicism of some of its leading proponents. In the example of the Pew Internet Project, we learn, in detail, about one effort to track diffusion and adoption of new communications technologies. And, finally, in perhaps the most substantively rich segment of the chapter, we learn about research initiatives focusing on the World Wide Web, forms of communicative actions inscribed in it, how web design constrains and facilitates such actions, the kinds of user experiences it facilitates, and relationships engendered in Web text and linkages. Of particular interest is the way this work pushes the boundaries of existing research methods and approaches, which communications studies typically "borrows" from the more established social sciences. Thus, scholars of Internet-mediated and online communities find their research questions demand striking modifications of traditional research design, modes of data collection and analysis (e.g., specifically tailored for web-based surveys and ethnographies and web sphere analysis), and even a newly drawn moral relationship with their research subjects.

Focusing on the capacity of the Internet to serve as a vehicle for creative and artistic expression, Mette Hjort has produced a wide-ranging account of aesthetic approaches to it. While acknowledging that innovations in digital technologies (e.g., formats such as JPEG or GIF files) have allowed for expressive artworks to be transferred to the World Wide Web, Hjort, reviewing the scholarly field, emphasizes the range of aesthetic properties and aesthetic experiences of the new digital media. One reason for this extensive realm of the aesthetic online is diverseness in the concept of the aesthetic. Hjort allows for the aesthetic to capture, among other things, appreciation of political and moral ideology, the presence of Zeitgeist, apt uses of technology (e.g., appreciating creative genius in the Linux project as an aesthetic experience), laudable uses of the Net's unique qualities such as interactivity and hypertextuality (e.g., in MUDs and MOOs). And, finally,

the aesthetic will also encompasses art criticism of more traditional works of art that have been rendered digitally.

By incorporating such a broad scope within the scholarship of the "aesthetic" Hjort shows how a great deal more of digital expression, modalities, and communication can be appreciated. Web and interface design are among the digital artifacts that that exhibit aesthetic properties in a more traditional sense, though not strictly in the category of art. Developments here are occurring not so much in traditional academic circles but in commercial contexts. Hypertext, a form of expression characteristically associated with the Net, also calls for novel forms of aesthetic appreciation as does the virtual, a mode of experience that has emerged with the capacity of the digital media to provide perceptual inputs that depart radically from objects with actual dimension.

Viktor Mayer-Schoenberger investigates ways in which existing zones of academic inquiry such as law and economics, law and civic republicanism, and law and critical race theory, for example, all have their Internet emanations. He alludes to the debate whether cyberlaw is more than the application of existing legal rules to cyberspace but, rather, a new legal domain to be explored, analyzed, and taught. He divides legal inquiries into three strands of cyberlaw discourse: (1) research on "cyber-structure," which focuses on the question of governance, of who creates the rules regulating interactions in cyberspace; (2) research on "worldwide information," which focuses on what is at the core of the move toward postindustrial societies; and (3) research on the challenges that cyberspace poses for the traditional legal system and the question of which entity should govern and thus regulate cyberspace. This last is much closer to conventional legal discourses in that it looks at the existing governance and enforcement entities and asking which one of them is best suited to create and enforce rules on a global network.

In her essay on the scholarship concerning copyright law and the Internet, Niva Elkin-Koren determines that in the law-related literature concerning regulation of information and the Internet, two competing models are emerging. One is the traditional property rule created by centralized institutions of the territorial state; the other is the emerging regime of standard contracts, namely, of rules generated via private ordering. For many writers, the potential shift to "private ordering" regimes in cyberspace is appealing. The idea that we may no longer need to rely on centralized regulatory institutions, and may individually make our own choices on the terms and conditions for using information, seems to be liberating. "Private ordering" is seen as a manifestation of central values such as autonomy and

freedom. Whereas some perceived copyright law as a "necessary evil" of the predigitized age, the prospects of replacing such property rules with a free and diverse "market for norms" is welcomed most favorably. Professor Elkin-Koren contends that arguments advocating a private ordering regime for managing access to information should come as no surprise. Advocates of private ordering argue that priority should be given to terms of access privately generated by the parties, even if they conflict with copyright policies. She contrasts an economic approach that holds that private ordering is superior to a centralized regulatory copyright regime to an approach coming from political theory that finds greater legitimacy in state deference to existing "private ordering" mechanisms instead of attempts to extend jurisdiction and further regulate the Internet. Copyright law and the Internet is an illustration, in the literature, of these contrasting approaches.

Two essays are not discipline based. Jack Linchuan Qiu and Joseph Man Chan, in their essay on research concerning the Internet in China, search for the emergence of unique approaches and questions that are not observed in other fields given the idiosyncrasies of the socialist polity, transitional economy, and cultural complexity of the environment there. For the authors, the first set of questions confronting China Internet researchers pertains to the agents, that is, who are the actors and what are their characteristics? They find that researchers also approach implications of state control not only in the context of the market but also as tantamount to the redistribution of political power. They locate two broad areas strands of research: one that would conceive Chinese policy makers as an integral elite group collectively pursuing certain goals, which are, however, often described as inconsistent or even paradoxical and a growing number of scholars who do not assume the solidarity of the Internet policy circle, but see, rather, the decision-making processes as full of competitions among the regulatory agencies and major players in the market.

In the last essay, Christian Sandvig and Stefaan Verhulst reflect on the relationship between Internet research and public policy. They observe that at this moment the boundaries between the academic disciplines represented in this book do remain porous, as several disciplines claim the same Internet-related social problems (such as the "digital divide") to be within their purlieu. They argue that there is some hope of acting to alleviate these problems (or seize these opportunities). To achieve this, scholarly research across disciplines needs to more directly interrogate the mechanisms of policy making that bear on the Internet using comparative research. In their view, we remain within the Internet's formative years, when it is possible for research to contribute to defining a political and organizational structure that

may persist. Given this opportunity for change, however, much of the research to date that overtly engages social problems and policy implications often wrongly views the Internet as unregulated and concludes at a call for either policy action or retreat: more regulation or less. Some research that claims to be about the Internet and public policy restricts itself so narrowly to a particular law or policy situation (policy evaluation research) that it may be self-marginalizing, while other social scientific research that claims to be about the Internet and society chooses not to engage in careful and specific policy advocacy derived from its implications.

Using a broad understanding of "regulation," they argue the Internet is already regulated, and they describe four domains where some countries are heavily involved in efforts to regulate the Internet, explicitly or not (as purchaser, as conduit, as content, as agent of development). They also highlight the role of nonstate actors and technology in this "regulation." They see increased attention to internationally comparative research as the way forward, and they explain that several different kinds of comparative questions need to be asked simultaneously (vertical versus horizontal comparison, macro versus microcomparison). They conclude by admitting that this research effort across national systems is messy and difficult, and tends to show up the assumptions of the national context where it is produced rather than itself being somehow transnational—but they claim that this process of both "imagining and investigating alternative structures" remains necessary. For the Internet, so far it has been largely neglected.