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COMMUNICATION RESEARCH AND THE STUDY OF SURVEILLANCE

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This paper outlines some of the productive points of intersection between communications research and the study of surveillance. It highlights some of the contributions that the field of communications has made to the emerging interdisciplinary field of surveillance studies, and suggests some possible lines of research in the areas of consumer surveillance and interactive media, police communications and surveillance, closed-circuit television, media representations of surveillance, surveillance and the ritual model of communication, and surveillance and social inequality. The unique contributions made by the authors included in this special issue are also noted. It is by no means an exhaustive overview.

The issue of surveillance has become the subject of intensified public and scholarly concern. Journalists, civil libertarians, and scholars in a number of fields have offered critical assessments of the ubiquitous nature of surveillance in modern societies. Theoretical and empirical work on surveillance techniques, practices, and institutions can be found in sociology, criminology, geography, urban studies, legal and policy studies, and other fields, and collaborative, interdisciplinary research is common. The idea behind this special issue of *The Communication Review* is to highlight the

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contributions that the field of communications has made, and can continue to make, to our understanding of surveillance as a set of cultural and institutional practices, and especially as an instrument of social control. In what ways are surveillance practices also communicative practices? How are surveillance functions built into communications media, new and old? What does communications research and theory bring to the study of surveillance, in addition to those insights offered by other disciplines? From consumer research, copyright enforcement, and the surveillance capacity of information networks, to closed-circuit television, interactive media, and the new “rhetorics of surveillance” in television and film (Levin, 2002), communication and media studies have productive interventions to make into the debates about the “surveillance society” (Lyon, 2001).

Of course, the study of surveillance is of necessity an interdisciplinary undertaking, not least because surveillance takes so many different forms. Luckily, the field of communication is one with porous boundaries, and its contributions to the study of surveillance are not confined to communication’s scholarship. A recent collection of essays edited by the sociologist Kevin Haggerty and the criminologist Richard Ericson provides ample evidence of this point. The book entitled, *The New Politics of Surveillance and Visibility* (2006), contains a number of articles by scholars outside the field of communication that examine intersections between surveillance and the media, including Aaron Doyle’s essay on the broadcasting of surveillance footage of crimes, and Serra Tinic’s essay on audience research and interactive television. (Both Doyle and Tinic work in sociology departments.) In addition, David Lyon’s (2006) contribution to the volume examines the role of the mass media, especially television and cinema, in legitimizing ubiquitous surveillance practices and encouraging a culture of voyeurism.

As these examples of surveillance research suggest, the relationship between surveillance and communication—especially the media of communication—is an established and growing object of interdisciplinary concern. The relevance of the field of communication to the study of surveillance stems to a considerable extent from its conventional concerns with media and media technologies. In many respects, surveillance technologies *are* media technologies, and in that sense all forms of surveillance beyond direct supervision involve the use of media, from writing and paper to digital video and audio-recording devices. There are other productive points of intersection as well. The relationship between the intensification of surveillance and the rise of neoliberalism bears further analysis, and communication’s scholarship has much to contribute to this debate. The transition to “informationalized capitalism” (Schiller, 2007) has depended centrally on the development of new practices of combined state and corporate scrutiny, enlisting new communication technologies

born out of the digital convergence of a number of information media—including television, video, and the Internet.

CONSUMER SURVEILLANCE AND NEW INTERACTIVE MEDIA

One recognized contribution that communication research has made to the study of surveillance is the wealth of critical scholarship on market research and consumer monitoring. Communication research has offered important insights into the relationship between marketing techniques and the drive for more intensified forms of consumer surveillance, focusing on the role of information technologies in the market segmentation process. In *The Panoptic Sort* (1993), Oscar Gandy identified the dispersed and decentralized technological sorting apparatus taking shape along with computerization, using transaction-generated data about individuals in order to classify them according to their presumed economic and political value. His study established the undeniable fact that consumer profiling techniques were functioning in deeply discriminatory ways, structuring the range of choices available to individuals according to the dictates of commodity consumption and corporate profit. Although less critical of corporate profit *per se*, Gandy's colleague Joseph Turow similarly has focused on the forms of discrimination underlying the market research machine. His two major books in this area, *Breaking Up America* (1997) and *Niche Envy* (2006), have taken aim at the fragmentation of U.S. society at the hands of target-marketers and the destructive social consequences of classifying and assigning differential value to consumer groups (and increasingly, to individuals).

As this work suggests, market research and consumer surveillance have been special concerns in communication's scholarship, not least because they combine the field's longstanding interest in persuasive techniques with a legacy of treating communication as form of information processing.¹ It is the increasingly cybernetic quality of surveillance—the capacity to feed personal data about individuals back into the mechanisms of social control—that distinguishes newer techniques from earlier, less interactive forms of monitoring. Of course, the mass media have long played a role in the feedback loops of surveillance and social control, and the commercial media have always been most concerned with monitoring their own markets—or at least part of that market. As Eileen Meehan (1990) has shown, the only audience that counted during the network and cable eras of television was the “commodity audience”—that is, the audience most saleable to advertisers. To be sure, things are changing considerably in the field of audience research, thanks to new “interactive” media technologies. Digital video recording (DVR) technology in particular is threatening established models of audience measurement, although not so

much because it empowers television viewers to defy highly orchestrated program schedules or to skip over commercials, but because it provides a vehicle for gathering much more precise data on our viewing behaviors—giving programmers a whole new level of information about exactly what we do with the television set, down to when we adjust the volume (Carlson, 2006). Thus despite the changes, there is not much evidence to suggest that the new forms of audience measurement are any less focused on commercial media's most valuable commodities: people with buying power.

The Internet has also introduced new challenges and new opportunities for market research and audience measurement, and the new online surveillance techniques have raised important questions for communication research. As the Internet became a popular medium in the 1990s, the prevailing argument held that it represented an entirely new playing field, requiring different rules than those that governed the established media. Yet, while cyber-libertarians insisted that the Internet should be free of the regulatory oversight under which broadcasters had long suffered, private companies established their own regulatory mechanisms by securing control over the Internet “backbone” and domain name system, effectively “ruling the root” as it were (Mueller, 2004). The privatization of the Internet was accompanied by its thorough incorporation into the market system, down to the level of code. The new medium of the web browser, with its “cookies” technology, was specifically designed to automate the collection of personal information (Elmer, 2004), and new Internet tracking companies like DoubleClick and Bluestreak devised ways to turn our online activities into valuable market research data, effectively redefining privacy as a tradable commodity (Campbell & Carlson, 2002).

Without a doubt, the Internet and new ICTs are bringing together persuasive strategies with previously unheard of consumer tracking techniques. New technologies are enabling the rationalization of social life well beyond the workplace into the spheres of leisure and consumption, as Robins and Webster (1999) have argued. Mark Andrejevic (2007) develops this argument further in his new book, *iSpy: Surveillance and Power in the Interactive Era* (2007). Andrejevic demonstrates how the new culture of media “interactivity” invites us to willingly participate in our own manipulation by freely offering up detailed information about ourselves to marketers—a marketing strategy greatly facilitated by the Internet, mobile phones, and interactive DVR technologies like TiVo. In stark contrast to the utopian promise of “interactive” media technologies for participatory democracy, the reality of this so-called interactivity appears to be nothing more than intensified forms of monitoring aimed at helping marketers develop more effective and efficient forms of consumer persuasion. Serra Tinic (2006) similarly argues that the potential of

interactive TV falters in the light of the political-economic reality. Corporate mergers have granted companies unprecedented abilities to use this technology to penetrate the domestic sphere in order to digitally record the actions of audience members as they surf, screen, and shop. Interactive TV helps advertisers to further fragment the market—sorting out desirable individuals for participation in this new medium while ignoring the rest.

POLICE COMMUNICATIONS AND SURVEILLANCE

If communication research has an established record of examining consumer surveillance and audience measurement techniques, what of its record of research on those forms of surveillance developed for other, noncommercial purposes? In what ways are state and police surveillance practices also communicative practices, involving the use of “interactive” media technologies?

Police use of surveillance technologies is an area of obvious concern to criminologists, and much of the work shares important and underexplored connections to communication research. The history and political economy of telecommunication and computerization has much to offer current debates about warrantless wiretapping, police use of biometrics and other information technologies, and policies like the Communications Assistance for Law Enforcement Act (CALEA), which requires telecommunication carriers to design their equipment, facilities, and services to enable electronic surveillance. In order to understand what is new (and not so new) about new forms of electronic surveillance, it helps to consider the historical record. A rich body of literature addresses the historical development of identification systems, including the incorporation of photography into criminal identification techniques and the corresponding development of archival systems for the organizing criminal files.² These archival systems are important predecessors to the database and networking technologies that now underwrite and shape police surveillance practices.

Another contribution to this historical record comes from James Rule’s (1973) landmark study of five bureaucratic surveillance systems in the early seventies. Rule’s study provides an invaluable description of the criminal files kept by the British police—and their techniques of information organization and retrieval—just before computerization. Rule also offers a rare glimpse into police use of telecommunications at a particular historical moment. Thanks to new radios in police cars, officers no longer had to find telephone boxes to call in criminal background inquiries when conducting “stop checks.” Back at the criminal records office, Rule describes “the steady ringing of telephones and the movement of staff

plying back and forth between the phones and the files,” although in some cases the teleprinter or telex served as a substitute for the telephone (p. 62). Rule’s descriptive account provides an important point of reference for understanding transformations in police surveillance practices, especially the translation of human labor into automated, technical systems.³

The labor of surveillance is the heart of policing, and it represents an underexplored area of research.⁴ In stark contrast to this dearth of scholarship, the problem of surveillance labor has received an enormous amount of attention from state agencies and other institutions involved in the construction of surveillance architectures, from Bentham to post-9/11 U.S. (Maxwell, 2005). As highlighted in recent films like *The Lives of Others* (2007) and *Red Road* (2007), surveillance involves considerable work, and special kinds of skills on the part of its workforce. The labor of surveillance often requires an inhuman level of discipline and detachment, as Richard Maxwell (2005) has shown. Adding an important dimension to this debate, Ericson and Haggerty (1997) have argued that the modern police are best understood as “knowledge workers” within risk management systems, doing the labor of collecting and processing information well beyond the realm of criminal investigations to support the risk management needs of other institutions, especially the insurance industry. In the process, police officers and other surveillance workers are subject to regimes of scientific management much like other workers, perhaps more so because of the nature of the work they do: “the computer terminal in the patrol car is a time-and-motion study that never ends” (Ericson & Haggerty, p. 432). Research on policing has neglected “how communication rules, formats, and technologies make officers more visible to police supervisors and managers and to external institutions for whom relevant knowledge is routinely produced” (Ericson & Haggerty, p. 438).

In addition to examining how new surveillance technologies enable an intensification of police surveillance, more research is needed into how the labor of surveillance has changed along with technological change, and how police officers and other surveillance workers themselves are disciplined through their use of surveillance apparatus.

CLOSED-CIRCUIT TELEVISION

In his analysis of the surveillance practices of the modern nation state, Anthony Giddens (1987) makes the important distinction between surveillance as the accumulation of coded information (i.e., “dataveillance” to use Roger Clarke’s [1994] term) and surveillance as direct supervision (of which panopticism is a particular form). If new information technologies have been developed to augment the accumulation of data, closed-circuit television (CCTV) and other audio-visual technologies have been

designed to enhance and extend techniques of direct supervision. The 80s and 90s saw an exponential increase in the use of CCTV by police and private security firms in both the U.S. and Europe for monitoring urban spaces, gated communities, workplaces, and capital-intensive spaces such as banks, malls, and casinos. The intensity of CCTV expansion in the UK in particular caught the attention of sociologists, legal scholars, and civil libertarians, who began to investigate the reasons for this proliferation and its social and political implications. Rather than focusing narrowly on criminological concerns with its effectiveness in reducing crime rates, critical research instead has explored the broader social causes and consequences of the widespread use of video surveillance.⁵ Explanations that have avoided the pitfalls of technological determinism have focused on the social factors governing the speed and scale of CCTV deployments, linking the rise of video surveillance to political-economic priorities (especially of neoliberalism) (see Monahan, 2006), governmental strategies (especially risk management) (see McCahill, 2002; Yesil, 2006), and the pathological culture of fear that pervades late modern societies (see Davis, 1992; Bannister, Fyfe, & Kearns, 1998; Graham, 1998).⁶

Building on a strong tradition of research, from the work of Raymond Williams (1975) to more recent work by scholars like Anna McCarthy (2001), television studies has important insights to offer the analysis of CCTV as both a technology and a cultural form. Closed-circuit television is an “ambient” form of television, with relevance to issues of media production and reception. Although its status as a “closed circuit” distinguishes CCTV from broadcast television, the images it furnishes lend themselves occasionally to the program formats of television news, documentaries, and voyeuristic, reality-based crime shows (see Doyle, 2006). But even in its most banal, everyday uses, CCTV is a special kind of media technology in that it mediates direct supervision, enabling the “disembedding” of social relations beyond their immediate context, to use Giddens’ terminology. Closed-circuit television is central to both crime control and “crime culture TV,” as Nic Groombridge (2002) has argued, and the “separation between the rational/bureaucratic elements of CCTV and the affective/aesthetic/entertainment can no longer be sustained” (Groombridge, 2002, p. 37). As a cultural form, CCTV now constitutes a part of the visual repertoire of modern life, embodying a compulsive desire to record time and space, in all its banality, in pursuit of something of interest, while simultaneously overburdening the monitoring institutions with information and threatening to produce what Baudrillard (1980) has called an “implosion of meaning.” The questions CCTV raises about the production and manipulation of space and time closely relate to issues examined in communication’s scholarship at least since Harold Innis’s *The Bias of Communication* (1951). Film theorist Thomas Levin

(2002) has offered a noteworthy contribution to this discussion in his analysis of the “temporal indexicality” of real-time surveillance video, especially as CCTV becomes part of the language of contemporary cinema.

MEDIA REPRESENTATIONS OF SURVEILLANCE⁷

The interplay of CCTV with film and other media forms raises an issue of growing concern to both communication and surveillance studies: the convergence between media representations of surveillance and actual surveillance practices. David Lyon’s most recent book, *Surveillance Studies* (2007), points to the dialectical relationship between the two, arguing that media representations of surveillance are central to understandings of observation, supervision, and inspection. Lyon’s analysis of the comic strip *Spiderman*, which he demonstrates is the inspiration for the electronic tagging of criminalized individuals, is one among many of the ways in which media texts inform contemporary surveillance strategies. Media texts offer both critiques of new surveillance technologies while simultaneously naturalizing their expansion. For example, films like *Gattaca* (Niccol, 1997) and *Minority Report* (Spielberg, 2002) dramatize dystopian societies caught in the grips of police surveillance, while depicting new surveillance technologies as seamlessly functioning systems. In this way, these films paradoxically raise critical questions about surveillance, even as they present authoritative and seemingly nonnegotiable visions of the technological future.

Surveillant scopophilia is also the hallmark of reality TV, a program genre that offers surveillance itself as mediated spectacle (Andrejevic, 2003). Although the genre has historical precedents, it was the debut of *The Real World* in 1991 that ushered in the reality TV boom—a veritable revolution in television production—as broadcast and cable networks remade their schedules around the cheap-to-produce programming and spun off a slew of specialized subgenres (Oullette & Murray, 2004). Like many program genres, reality TV includes a broad range of textual material, much of which shares affinities with other forms of reality documentation, including news and documentary programming. However, reality TV is decidedly different than these other realist modes of representation. Oullette and Murray distinguish reality TV as “an unabashedly commercial genre united less by aesthetic rules or certainties than by the fusion of popular entertainment with a self-conscious claim to the discourse of the real” (p. 2).

It is this claim to the real that gives reality TV its particular affinity with the surveillance culture, instructing viewers in the work of watching, while simultaneously making them accustomed to the work of being

watched (another form of surveillance labor) (Andrejevic, 2002a). The “video verité” style of reality crime dramas like *COPS* encourages viewer identification with police surveillance and voyeuristic pleasure in other people’s misery, accompanying officers as they hunt down petty drug users and prostitutes and perform for the camera (Rapping, 2004). If viewers are encouraged to keep a safe psychic distance from the unfortunate folks getting arrested on *COPS*, the same is not true of their relationship to the participants in shows like *The Real World*, *The Apprentice*, *Judge Judy*, and *The Bachelor*. Media studies scholars have argued that reality TV encourages viewers to identify closely with the shows’ participants—in fact, to envision themselves *as* the participants—articulating new modes of subjectivity more appropriate to an intensively monitored society (Andrejevic, 2002b, 2003; Dubrofsky, 2007). In her work on *The Bachelor*, Dubrofsky (2007) has found that the surveillance practices of reality TV signal a shift in therapeutic narratives from those that stress self-improvement to those that emphasize self-sameness, where being perpetually watched becomes central to establishing one’s consistent identity and sense of self across a range of social spaces. Shows like *The Real World* and *Road Rules* “equate submission to comprehensive surveillance with self-expression and self-knowledge,” offering a “kinder, gentler” version of Big Brother and an acceptance of being watched so important to consumer participation in the online economy, as Andrejevic argues (2002b, p. 253).

SURVEILLANCE AS A RITUAL OF COMMUNICATION

If communication is a “symbolic process whereby reality is produced, maintained, repaired, and transformed,” as James Carey theorized (1989), then reality TV is surely doing much more than providing the viewing public with trivial entertainment. Carey’s ritual model of communication emphasized its role in the formation and maintenance of community, a theory that has important insights to offer the study of surveillance. Surveillance practices, in all of their technological forms, are part of the cultural rituals of modern societies. Surveillance practices are rituals central to modern statecraft in particular, as the authors writing in this special issue demonstrate—see, for example, Torin Monahan’s examination of intelligent transportation systems and Andrejevic’s analysis of ubiquitous computing. State agencies routinely compile information about individuals and groups for the purposes of governance, and surveillance practices are among the central ways in which the states engage with members of the national body. The state’s surveillance rituals work to render citizens and aliens “legible” (Scott, 1998) and “verifiable” (Robertson, 2004) to state apparatus. State

surveillance practices are ritual forms of communication aimed at the maintenance of society across space and time.

Yet, like Foucault's conceptualization of power (1977), Carey's ritual model (1989) forces us to look beyond state-centered practices of social control to understand the many other ways in which rituals of observation work not only to maintain the established order, but also at times to disrupt or challenge it. In their analysis of U.S. network television news coverage of the "war on drugs," Reeves and Campbell (1994) argue that surveillance practices are an inherent part of the communicative processes that underlie the struggle over "meaning, order, control, and freedom," i.e., part of competing social forces of domination and resistance (p. 33). Network television news embodies these dualistic tendencies. Although generally aligned with those social forces struggling to impose conformity, television news on rare occasions inadvertently becomes "a platform for dissent, an ally of civil disobedience, a whistle-blowing advocate of the disenfranchised, an enemy of tradition" (Reeves & Campbell, 1994, p. 34). Here we are reminded of television news coverage in New Orleans after Katrina, as reporters visibly contradicted the bright public pronouncements of the Bush Administration with horrific, real-time footage of the unfolding chaos.⁸ There are also instances when ordinary citizens and activists use video and other forms of "countersurveillance" in order to "police the police," from the chance-encounter videotape of the Rodney King beating to more organized forms of "cop watching" (Huey, Walby, and Doyle, 2006).

If the ritual model of communication requires us to consider alternative surveillance practices, we should not be fooled into thinking that all of the unintended uses of surveillance technologies amount to emancipatory forms of resistance. A more frightening example of a use of surveillance technology is the cyberstalking spyware used by abusers to stalk their targets.⁹ Such computer programs may be covertly installed. Once set up, the software gives the installer second-by-second screen shots of what is happening on the computer that carries the spyware, which in turn can be e-mailed to the stalker's computer or cell phone. Information transmitted may include e-mail messages or communication sent by an Internet phone. In this way, every moment of the target's day may be tracked—including, for example, e-mail sent to a domestic violence shelter or a call made to a crisis hotline.

COMMUNICATIONS, SURVEILLANCE, AND INEQUALITY

As the case of cyberstalking suggests, supervisory strategies and their attendant technologies encode systemic forms of inequality, including

violence against women. The ease with which new communications technologies may be used for cyberstalking underscores the close relationship between new technologies and their social context. Another major contribution of communication's scholarship to surveillance studies is the attention critical scholars have paid to this relationship, including connections between new information technologies and the reproduction of social inequalities.¹⁰

For example, Suren Lalvani (1996) has theorized the ways in which new technologies codify discriminatory practices of looking. Through his analysis of the production of photographic types—including the bourgeois subject, the criminal object, the primitive other, and the ideal worker—Lalvani documents the importance of photography to the growth of surveillance infrastructure. In particular, Lalvani's examination of the role of photography in the production of the laboring body demonstrates that the technology was essential to the development of Taylorism and the scientific management of workers. Photography made it possible to capture movement and simulate realism in ways that allowed for the production of a highly regulated, surveillant apparatus of employee control. Lalvani shows how the photographic medium built on existing inequalities to provide the conditions for the surveillance of working class subjects. The development of photography as a new communication's technology was aided by its adoption to surveillance practices in the service of capitalism.

While desirable patrons are targeted by marketing techniques that privilege good consumers, other surveillance techniques render marginalized communities disproportionately vulnerable to policing practices. New surveillance technologies are regularly tested on marginalized communities that are unable to resist their intrusion. A new form of surveillance technology known as a one-way voice intercom system recently made its U.S. debut in Faircliff, a low-income housing complex in Washington, DC. Planners hope that the securitization of this low-income community will encourage wealthy condominium owners to purchase property on the neighboring streets. Staffed by security personnel sitting behind surveillance cameras, the system allows monitors to speak to tenants but does not permit tenants to reply. The anonymous system has already been abused. In one case, a teenage girl who refused to move fast enough when ordered was told "Get [her] fat ass off the corner" (Jamieson, 2006). This new communication's technology is again used to police bodies deemed "out of place," even as those bodies are held static by income disparities and the difficulty of finding affordable housing. As the Faircliff case suggests, more research needs to be done on how surveillance practices encode and help reproduce existing forms of structural inequality.

THE CONTRIBUTORS TO THIS ISSUE

Not only can the field of communication contribute to the study of surveillance, but widespread rituals of surveillance themselves should raise questions about the established research agendas of communication studies. The contributors to this special issue build on strong traditions of communication's scholarship while also taking important new directions.

In his analysis of the possibilities for surveillance offered by ubiquitous computing, Andrejevic debunks the utopian rhetoric surrounding the promise of computing hyped to be "as free as the air you breathe." Rather than delivering on the promise of the digital sublime, Andrejevic demonstrates that ubiquitous computing promises to force free oxygen into a pipeline structured around the business model of the digital enclosure. Enclosures are spatial configurations that favor surveillance put to work in the service of capital, and Andrejevic reminds us that the digital enclosure "promises little more than the reproduction of the social relations it purports to overcome." Heather Murray's study of biometrics also reveals the ways in which this new communications technology codifies systemic forms of inequality. Grounding the development of biometrics in a specific historical and cultural context that privileges the white, male body as normative, Murray argues that this emerging information technology renders othered bodies invisible to the biometric scanner. Understanding that these bodies are made monstrous through their illegibility, Murray asserts that biometricized bodies tell us more about the means of measurement than they do about the truth of bodily identity.

Torin Monahan further unpacks the relationship between communication and transportation in his study of intelligent transportation systems. Monahan's analysis of the ways that transportation control centers may be extended by function creep to discipline those suspect bodies who interrupt carefully managed mobilities reveals that digitized transportation architecture offers up new possibilities for blurred boundaries between traffic management, law enforcement, and security. These bodies out of place are then rendered vulnerable to discipline by transportation infrastructure as a result of their lack of vehicular mobility. Finally, Rachel Hall's analysis of the visual culture of surveillance demonstrates that an aesthetics of transparency dominates the U.S. approach to securing the nation. Using the visual culture methods pioneered by communication scholars, Hall reveals that total visibility is a key feature of the post-9/11 surveillance state. Understanding security in terms of visibility means that new technologies able to flatten interiority into two-dimensional space are required—making human bodies mappable, codeable, and transmissible through time and space.

In revisiting James Carey's study of the relationship between communication and transportation, Jeremy Packer (2006) argues for a rethinking of the objects of communication research. "As the means of exerting force, maintaining control, and enacting surveillance are increasingly done through mobile communication technologies," writes Packer, "we have to seriously ask why it is that communications as a field predominantly seems to investigate mass media" to the exclusion of some many other vital communicative forms (p. 94). The contributors to this special issue further this aim, moving beyond an exclusive concern with the mass media to consider important points of intersection between communication and surveillance, and examining surveillance practices as communicative practices in their own right.

NOTES

1. As Dan Schiller (2007) has noted, in its bid for legitimacy at the outset of the Cold War, communication studies incorporated the growing, all-inclusive paradigm of information theory, shifting its emphasis away from mass persuasion and propaganda toward "abstract, formalized discussions of information senders, receivers, and channels" (p. 18).
2. See, especially, the respective work of John Tagg (1987) and Alan Sekula (1986), and the volume *Documenting Individual Identity*, edited by Jane Caplan and John Torpey (2001).
3. Important work followed, including Kenneth Laudon (1986) and Gary Marx (1988).
4. In a study of police use of information technologies published in 1992, Peter Manning specifically does not include "a host of means of *enhancing the primary data-gathering capacity* of the police such as surveillance devices, miniaturized tape recording and transmitting machines, drug and alcohol testing kits, video cameras for recording traffic stops, and more systematic tools for crime-scene analysis and data storage and retrieval" (p. 351). His study was narrowly concerned with information processing within police organizations and the impact of IT on police organizational communications. Although he does not explicitly address it as such, the study was more closely related to workplace surveillance research—and Richard Maxwell's (2005) work on the labor of surveillance—than to the literature on police surveillance of the social. The subfield of organizational communication has much to offer the study of workplace surveillance.
5. For examples of research on the effectiveness of CCTV schemes for crime prevention and reduction, see the contributions in Part Four of Norris, Moran, and Armstrong (Eds.) (1998).
6. For a wide variety of different theoretical and methodological approaches to CCTV, see the special issue of *Surveillance and Society* on the topic (2/3), available online at <http://www/surveillance-and-society.org/cctv.htm>.
7. Gary Marx (1996) was one of the first to consider media representations of surveillance as an object of theoretical interest.

8. Mathiesen (1997) uses the term “synopticism” to refer to the role of the mass media, and especially television, in enabling the many to watch the few, in contrast to panopticism.
9. See Sullivan (2007 August 14).
10. Communications scholarship on the relationship between social context and the development of new technologies often focuses on the discursive dimensions of technological innovation and has not been limited to the study of social inequalities. For example, see David Phillips' (2004) analysis of the way that particular conceptualizations of privacy help to shape the development of privacy enhancing technologies or PETs.

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