

Surveillance as governance

Social inequality and the pursuit of democratic surveillance

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Technological surveillance is often criticized as being antithetical to democratic principles, and with good reason. At its core, surveillance is about control; it tends to produce conditions of constraint, wherein human and technical action is regulated and limited. The degree and kind of constraint vary according to the values and assumptions that are embedded in respective surveillance apparatuses and generated by surveillance practices. Although control could be exercised with surveillance systems for purposes of care or protection, such systems are most often characterized by coercion and repression, and offer few avenues for accountability or oversight. Airport security systems, for example, require people to submit to elaborate surveillance rituals of conformity and exposure, making people more open to external scrutiny and manipulation even while the rights of citizens and others are left intentionally vague. Commercial surveillance of people for marketing purposes betrays a similar trend: it encourages (or requires) people to reveal their shopping preferences and habits so that companies can target their products more profitably or sell their customer data to others; meanwhile, individuals know little about what data are being collected about them, by whom, or for what purposes. Similarly, state surveillance of those accessing social services, such as welfare, has become much more fine-grained since automated data systems have been implemented to distribute and manage “benefits;” at the same time, the disclosure of information to welfare recipients about how their data are used or even about policies for disciplining or rewarding recipients based on their spending habits has been restricted.

These disparate examples, which represent commonplace rather than exceptional surveillance practices, share a set of characteristics that are clearly non-democratic. They each open people up to examination and control, while constraining individual autonomy. They each rely upon opacity instead of transparency; most people under surveillance have little knowledge of the inner workings of the systems or their rights as citizens, consumers, or others. Finally, because these systems are closed, they resist opportunities for democratic participation in how they are designed, used, critiqued or regulated.

In this paper, I argue that the underlying conditions of most contemporary surveillance systems run counter to principles of democratic governance. First, I draw upon writings from the field of technology studies that deal with democracy and technology to frame technologies, including those of surveillance, as political in their own right, apart from how they are used by government agencies, corporations, or others. Second, I analyze the dominant functions of surveillance today with regard to the differential treatment and automated control of populations, functions which both produce marginal identities and resist democratic participation or oversight. Finally, to avoid deterministic conclusions about surveillance, I explore several examples of democratically empowering surveillance systems that encourage openness, transparency, accountability, participation, and power equalization among social groups and institutions.

Technology and democracy

Inquiry into the relationship between surveillance and democracy can fruitfully begin by recognizing the non-democratic character of most technological systems. Following from John Dewey, I understand democracy to be much “more than a form of government”—as a mode of associated living predicated upon conditions of *social equality*, along lines of race, class, gender, and other categories of difference (Dewey, 1916:87). At least since the Enlightenment, technologies have been wrapped up in a mythology of social progress, which frames any new advancement as an unqualified good (Adas, 1989). Seldom have people stopped to ask the crucial question of what *kind* of progress is being achieved by new technological systems (Marx, 1997). Social progress *could* be measured in terms of personal satisfaction, educational achievement, environmental sustainability, access to health care, strong community ties, reduced economic inequality, and so on. Instead, in most circles progress has come to be synonymous with greater technical efficiency or economic gain.

Science and technology studies (STS) scholars, at least those in the normative branch of this field, have argued that democratic design processes and outcomes should be the primary criteria for evaluating technological systems and deciding upon their social worth (Winner, 1986; Sclove, 1995; Martin, 1999; Woodhouse et al., 2002). The rationale for this position is that because of the exclusionary nature of the design of most technologies, technological systems tend to overlook the needs of diverse populations, force homogenization and adaptation, and produce a series of so-called externalities—from toxic waste to energy dependency—for which people and institutions must take responsibility. By increasing public participation in the process of technology design and evaluation, we could at the very least circumvent some of the most destructive outcomes of new systems. Even better, such systems could empower citizens by including them in the process, recognizing their tacit expertise, and cultivating new knowledge about the merits of some technologies

over others. Finally, involving more people in what is typically seen as the domain of technical experts could speed up feedback loops so that problems could be identified and corrected sooner, preferably before large-scale infrastructural investments have been made (Woodhouse and Nieusma, 2001).

The democratization of technology sounds radical, in part, because of the presumed impracticality of public involvement. It is probably not a coincidence that as the scale and scope of technological mediation increases, meaningful democratic participation in most aspects of governance decreases (Winner, 1977). There are productive counter-examples to this trend, of course, as with the formation of new social movements (Juris, 2008; Hess, 2007) or participation in formal politics over the internet (Ratcliffe and Lebkowsky, 2005). Nonetheless, the public is generally excluded from active participation in *most* matters considered technical, from transportation to city planning, from energy resources to military weaponry, from food production to communication networks. At least in the United States, public involvement in decisions about technological systems has been restricted to consumer choices, occasional ballot measures, and infrequent—and largely symbolic—public meetings. The infeasibility of public involvement has been partially conditioned by the closed technological systems upon which people depend. If democratic participation is an unfamiliar and unsupported activity throughout most aspects of people's everyday lives, it should not be surprising that the prospect of greater participation in decisions about technology might sound absurd.

An important analytical step toward democratizing technology is recognizing the political nature and social agency of all technologies. As Langdon Winner writes: "Far from being merely neutral, our technologies provide a positive content to the arena of life in which they are applied, enhancing certain ends, denying or even destroying others" (Winner, 1977: 29). Much like legislation, technological systems provide a set of rules, or scripts, encouraging certain uses or interactions and discouraging others (Winner, 1986; Akrich, 1992; Lessig, 1999). For example, video cameras lend themselves to the remote observation of others; highways lend themselves to vehicular transportation; walls and gates lend themselves to the regulation of belonging. The scripts of technological systems *partially* determine social practices by exerting agential force upon people and contexts. Moreover, technological systems introduce a series of dependencies—such as those upon electricity, data networks, or security systems—that require institutional commitments for the systems to continue to operate. Because technologies frame what is possible and practical for people and organizations, they can be said to be "political," even though decisions about them are seldom made through democratic processes. This neither denies the agency of people nor depends upon a simplistic belief in technological determinism. Instead, it sets the stage for a critical reading of technology in society, including an analysis of the role of technology in instituting and maintaining non-democratic practices and social inequalities.

By pulling technologies into the realm of the political, one can subject them to critical analysis and debate. Richard Sclove proposes, for example, that all technological systems be assessed with strong democratic principles in mind in order to mitigate the dominant non-democratic trajectory of most systems. He explains this position with a simple but persuasive syllogism:

Insofar as (1) citizens ought to be empowered to participate in shaping their society's basic circumstances and (2) technologies profoundly affect and partly constitute those circumstances, it follows that (3) technological design and practice should be democratized.

(Sclove, 1995:ix)

To the extent that people value ideals of democratic governance, it is logical that they should embrace the democratization of the technological systems that increasingly shape all aspects of life and act as social structures in their own right. It is important to note, however, that this does not imply eliminating technical experts or political representatives but instead further including technological decisions in policy-making processes. Sclove elaborates:

The strong democratic ideal envisions extensive opportunities for citizens to participate in important decisions that affect them. A decision qualifies as important particularly insofar as it bears on a society's basic organization or structure. The commitment to egalitarian participation does not preclude continued reliance on some representative institutions, but these should be designed to support and incorporate, rather than to replace, participatory processes.

(Sclove, 1995: 26)

The mechanisms for such participation can vary, from full-scale participatory design processes—where citizens collectively decide what kind of technologies they need and involve themselves in their production—to citizen consensus conferences or review panels for evaluating proposed or existing technologies. These processes can accommodate either direct or representative forms of democratic participation. Participatory design has proven to be a successful approach for designing spaces, technologies, and systems in meaningful collaboration with occupants or users (Schuler and Namioka, 1993). A key tenet of participatory design is that all users are experts in what they do, and designers can tap this expertise to generate better and more democratic outcomes (Howard, 2004). A less robust but more prevalent form of public involvement in technology design is the practice of “user-centered design” (Nieuwsma, 2004; Norman, 1988), which focuses on the needs or preferences of users and can be seen, for instance, with the widespread practice of beta-testing for computer software. At the very least, regulatory boards or government agencies could be established to investigate the social, environmental, and economic impacts

(or implications) of new technologies and make those findings available to policy-makers and the public. The United States Office of Technology Assessment, which was dissolved in 1995, serves as an important precedent and a possible form for establishing future governmental bodies devoted to technology assessment.

Apart from this focus on the largely absent but necessary democratic *processes* for technology production and evaluation, there remains the question of what kinds of technological systems are inherently more democratic by design. Ivan Illich (1973) introduces the generative concept of *conviviality* to describe technologies of community and self-empowerment that exist in opposition to the hegemony of industrial modes of production, which he perceives to be anti-democratic in nature. Convivial technologies are those that encourage self-sufficiency, local autonomy, community building, and self-actualization. Possible examples might be community-based solar power systems (Nieusma, 2007) or water pumps that are easy to install, operate, and fix (de Laet and Mol, 2000). By definition, convivial technologies are small-scale, transparent, accessible, and easy to use and/or modify.

Whereas most large-scale technological systems, including those for surveillance, are relatively closed and difficult to alter, convivial technologies possess a property that might be called *structural flexibility*, meaning that they not only afford but also invite modification on the part of users, support diverse modes of expression, and enable power equalization among people (Monahan, 2005). For instance, elements of structural flexibility can be seen with internet sites such as Indymedia, which allows users to post their own news stories, or with certain decentralized educational settings that support student exploration and collaboration on inquiry-driven projects (Monahan, 2005). Structural flexibility, as an ideal, does not deny the value of standardization but instead encourages continually revisiting categories and standards to determine which are most appropriate and least exclusionary for any given situation. Although such technological systems are all too rare, their presence provides a valuable alternative position from which to probe the democratic potentials and threats of contemporary technological surveillance.

Surveillance as control

It is now widely recognized that the emergence of information systems and shifts in modes of capital accumulation, especially since the 1970s, have brought about an increasingly globalized information or network society (Harvey, 1990; Castells, 1996; Hardt and Negri, 2000). Information and communication technologies now mediate and govern most domains of life, especially in industrialized countries. What is seldom noted, however, is that information societies are perforce surveillance societies (Giddens, 1990; Lyon, 2001). The orientation of information systems is toward data creation, collection, and analysis for the purposes of intervention and control. Surveillance

societies have deep roots in the modern bureaucratic project of rational, scientific management of organizations and populations, which is itself a powerful iteration of the Enlightenment belief in scientific and technological progress (Porter 1995). The popular motif of Big Brother, or state-run surveillance operations, however, fails to account for the almost complete integration of information systems, and therefore surveillance functions. David Lyon elucidates:

surveillance societies are such in the sense that surveillance is pervasive in every sector of societal life, courtesy of an integrated information infrastructure. Far from state surveillance being predominate, surveillance activities may now be found in work situations and consumer contexts as well. ... Moreover, surveillance data is networked between these different sectors, to create degrees of integration of surveillance systems undreamed of in the worst Orwellian nightmare, but with actual social effects that are far more ambiguous and complex.

(Lyon, 2001:34–35)

Concern for democracy, therefore, must attend to the state but also extend beyond it to question all the modes of information-facilitated control—it must look to the extreme and the mundane, from state spying programs to targeted consumer marketing, for instance. Whereas the previous section of this paper stressed non-democratic trends in relation to technologies more generally, this section concentrates on surveillance systems in particular, with specific attention paid to the types of control they exercise and enable.

As a starting point, I define surveillance systems as those that enable control of people through the identification, tracking, monitoring, and/or analysis of individuals, data, or systems. Although surveillance hinges upon control, it must be recognized that control is a loaded term that deserves to be unpacked. The term *control* stands in, usually, as shorthand for “social control,” meaning the mechanisms for ordering society through the regulation of individual and group behavior. Manifestations of social control can be informal, such as cultural norms and sanctions for improper behavior, or formal, such as laws and state policing of deviance. Social control is usually perceived unfavorably by critical social scientists because of the negative connotations associated with hard forms of coercion and police discipline, which have been applied in highly particularistic and discriminatory ways. Nonetheless, some form of social control is necessary, and indeed inevitable, in societies, so the question should be about what forms of control are more equitable, just, and democratic. With surveillance, such analysis should begin by identifying the de facto control regimes enforced by surveillance systems, whether intentionally or not, and then move toward recommendations for control systems that are more democratic in their design and effect.

Two types of surveillance in particular directly challenge ideals of democratic governance. These are systems of *differential control* and *automated control*, the effects of which are most egregious when the systems coexist or are one and the same. Differential control can be witnessed first with the “social sorting” functions of surveillance systems (Lyon, 2003, 2007). Surveillance, in this regard, operates as a mechanism for societal differentiation; it assists with discerning or actively constructing differences among populations and then regulating those populations according to their assigned status (Gandy, 2006; Haggerty and Ericson, 2006). The most obvious example of this might be airport screening systems or “watchlists” for targeting people who are thought to represent a higher risk of being terrorists and then subjecting them to additional searches and interrogation, or simply precluding them from flying altogether.

Because information technologies imbricate with most aspects of life and all information technologies possess a surveillance modality, such practices of social sorting manifest in many less obvious ways as well. For example, surveillance-facilitated social sorting occurs with all kinds of status assignments for access to basic services or needs, including transportation systems that provide dedicated automobile lanes for those who can afford to pay while the commuting needs of others are neglected (Graham and Marvin, 2001); energy-provision services that offer convenient budget plans for “low-risk” groups while others must contend with unforgiving pay-as-you-go plans with hefty surcharges and penalties (Drakeford, 1995; Graham and Marvin, 2001); preferred-shopper programs that give elite shoppers handsome discounts based on past purchases or preferences while intentionally overcharging for basic staple goods more likely to be consumed by the poor (Albrecht and McIntyre, 2006; Turow, 2006); and so on. As Minas Samatas aptly observes:

Political surveillance is not only that which is conducted by the state for directly sociopolitical control purposes, but also the private, commercial, consumer surveillance, which can sort individuals accordingly, by including or excluding them, and affecting their life chances.

(Samatas, 2004:150)

If social equality and equal participation (or representation) in governance processes are necessary conditions for strong democracy, then systems that perpetuate social inequalities are antidemocratic. Whereas social sorting typically works through the differential application of *the same* technological systems to the governance of different populations, there are other ways that surveillance can produce unequal outcomes. What I refer to as “marginalizing surveillance” entails unequal exposure to *different* surveillance systems based on one’s social address. More often than not, this means that some of the most invasive systems of scrutiny and control are disproportionately applied to the poor, to ethnic minorities, or to women. Mandatory drug testing for

minimum-wage service employees or welfare recipients are particularly egregious examples of marginalizing surveillance (Staples, 2000; Campbell, 2006). Another example might be the surveillance of low-level employees with keystroke-tracking software, global positioning systems, or radio-frequency identification badges (EPIC and PI, 2000; Lyon, 2006). Rituals of extreme technological and police surveillance of public-school students, especially in lower-class minority neighborhoods, could be interpreted as another example of marginalizing surveillance (Monahan and Torres, 2010). Those with alternative social addresses, especially the relatively affluent, are largely insulated from the degree and kind of surveillance represented by these cases. Such surveillance does not simply regulate marginalized groups—it actively produces both identities and conditions of marginality. These marginalizing effects might be more pronounced, in the eyes of subjects and objects of surveillance, given the universalist and objective mythology surrounding all technological systems, because discrimination can be masked behind the supposedly impartial functions of “the system.”

The forms of differential control engendered by social sorting and marginalizing surveillance are both compounded and insulated by the automation of surveillance functions. Automated control depends predominately upon algorithmic surveillance systems, which take empirical phenomena—translated into data—as their raw material, ranging from commercial purchases to mobility flows to crime rates to insurance claims to personal identifiers. Spaces, activities, people, and systems are then managed through automated analysis of data and socio-technical intervention (Norris, Moran, and Armstrong, 1998; Thrift and French, 2002; Graham and Wood, 2003). Examples could include real-time management of traffic flows through the identification and prioritization (and/or penalization) of some drivers, or modes of transport, over others; integration of face-recognition software with video surveillance systems so that positive “matches” with faces of suspected terrorists, for instance, generate automatic alerts for security personnel; geo-demographic mapping of reported crime incidents by neighborhood to create risk-based response protocols for police; or automatic exclusion of individuals from medical insurance coverage based on their genetic predisposition to acquiring debilitating diseases.

Automated control systems share a predictive orientation toward people; individual or group dispositions are rendered into statistical probabilities that can be acted on in advance or in real time, usually for the sake of institutional efficiency and commercial profit rather than social wellbeing. The systems seek to fix identities in advance for more effective control, regardless of the questionable ethics associated with acting on predictions, or actualizing such predictions. Thus, an important ontological shift accompanies the transition to automated surveillance practices. Whereas non-automated systems of social control seek to identify and *eliminate exceptions* (i.e. to keep everyone in line to ensure social cohesion), automated systems seek to *verify conformity*

through processes of anticipatory inspection (Lianos and Douglas, 2000:269). Everyone is presumed guilty, in a sense, until they pass preprogrammed expectations for acceptable data. Of course, one should bear in mind that such systems can be differentially applied as well; an added layer of automated control can exist for “high risk” groups while “low risk” groups might bypass such verification tests altogether.

It may be tempting to ascribe a totalizing force to automated systems and make radical claims about the gradual elimination of trust relations, ethics, and even culture under such systems (see, e.g., Lianos and Douglas, 2000). Taking a cue from other STS scholars (e.g. Bijker and Law, 1992; Bowker and Star, 1999), I find it more productive—and empirically accurate—to see such systems as socially constructed, as embodying the values and cultural logics of their contexts of production, as being thoroughly social even in their cold technical rigidity. Moreover, while the systems may be increasingly automated, that does not preclude the necessity of their ongoing maintenance by engineers, operators, programmers, and others; nor does it preclude active negotiation, appropriation, and resistance by the targets of such surveillance. Nonetheless, automated systems do resist participation, challenges, or alteration. As with other non-democratic technological systems, exclusionary politics are encoded in their design, enforced by bureaucratic structures of technical experts, and propagated through the application of such systems to social settings.

These surveillance systems absorb and reproduce the dominant cultural values of the contemporary political economy, most especially those associated with neoliberalism. Neoliberalism is generally understood as an orientation toward governance that emphasizes the privatization of public institutions and the deregulation of industry (Harvey, 2005). Beyond that, however, neoliberalism is a market rationale that colonizes most spheres of public life and transforms their functions to prioritize economic gain over all other measures of quality or success. From education, to health care, to transportation, to public safety, neoliberal policies and practices have come to dominate public institutions over the past few decades, in the United States and beyond (Duggan, 2003; Giroux, 2004). This shift in governance predictably pushes responsibility onto individuals for what used to be the purview of the state, effectively depoliticizing social problems and normalizing social inequalities (Brown, 2006). For example, if access to health care is seen as something that can be chosen and purchased on the open market, instead of something that is a right, then this relieves the state of responsibility for providing health care and legitimates conditions of unequal access (Fisher, 2009). Moreover, there is a disciplinary dimension to neoliberalism, whereby those who fail—or are unable—to comply with the now-pervasive market logics are excluded or criminalized in Darwinian fashion (Bourdieu, 1998; Garland, 2001; Simon, 2007). Therefore, existing social services, such as welfare programs, adopt policing functions to spy on, punish, and exclude those who are already presumed guilty because they are poor (Gilliom, 2001; Eubanks, 2006). Conditions

of economic insecurity, or the inability to meet one's needs through consumption, are suspect in this brave new neoliberal world.

Differential and automated control systems fuse with neoliberal rationalities to further normalize conditions of social inequality and civic passivity, both of which are antithetical to democratic principles. Social-sorting surveillance systems may have begun by separating out those who could pay for augmented services from those receiving basic services, but they have quickly mutated into schemes to reduce or eliminate basic services altogether, as evinced by the reduction in staffed airport screening stations for non-elite travelers, the reduction in lanes for cash-paying travelers at toll-road stations, or the reduction of public spaces and services more generally in lieu of surveillance-controlled private zones for housing, commerce, education, health care, and so on. If social sorting lends the appearance of providing *incentives* for differential treatment based on economic or other status or risk indicators, marginalizing surveillance threatens with disciplinary *disincentives* for those unable or unwilling to compete in the neoliberal world. This helps to explain why the most invasive and discriminatory forms of marginalizing surveillance focus almost exclusively on the economically or politically disenfranchised, including those who depend on state-supported health care, welfare, public education, public transportation, and even those trying to access polling places in communities with a preponderance of ethnic minorities. The automation of these, and other, forms of differential surveillance depersonalizes instances of discrimination and masks the exclusionary trends of neoliberalism more generally. Most concerning, perhaps, for this discussion about democracy is how these systems might be contributing to the production of neoliberal subjects who approach the world through the eyes of consumers rather than those of citizens entitled to rights (Rose, 1999; Brown, 2006). Because the marketization of public and private sectors eviscerates spaces for political debate, critique, or action, it should not be much of a stretch to say that it similarly deflects and delegitimizes any kind of critical democratic engagement with the mechanisms of neoliberal control, including those of surveillance.

This section has revealed some of the technological politics behind modern surveillance systems. Surveillance is predicated upon control. The dominant manifestations of surveillance-based control today are disturbingly anti-democratic because of the way they sort populations unequally, produce conditions and identities of marginality, impinge upon the life chances of marginalized populations, and normalize and fortify neoliberal world orders. There are two main reasons to perceive such surveillance systems as anti-democratic. First, surveillance technologies, like other technologies, act as forms of legislation without much—if any—democratic participation or representation. Second, perhaps as a direct result of the absence of democratic processes with technology design and evaluation, social inequalities are aggravated rather than ameliorated, which hinders the actualization of democratic modes of associated living. Given the structural forces and constraints

commented on in this section, even the apparent decentralization and diffusion of surveillance systems, such as peer-to-peer surveillance, cannot be viewed as democratizing because they do not in any way challenge structural inequalities (Andrejevic, 2005). As with most technological systems, surveillance resists public participation or critique by means of its opaque design and management by technical experts, people who often prefer to hide or deny the surveillance functions of the systems they oversee (Monahan, 2007). The question remains as to whether surveillance could foster democracy rather than undermine it.

Democratic surveillance

What manifestations of surveillance support democracy? Control may be a necessary and inevitable function of social regulation, but how can its enforcement by surveillance technologies be more democratic and empowering for more people? For the purpose of this inquiry, urban theorist Kevin Lynch provides an instructive view of spatial control, which he posits as one of the key criteria for good city design:

Control will sometimes enter a self-destructive spiral: perhaps downward—as when behavior begins to escape any regulation and control groups lose their confidence—or perhaps upward—as when a threatened control progressively rigidifies, prescribing actions and rights more and more minutely. These instabilities will also require intervention. Once again, the ideal state of congruence must be balanced by external regulation.

(Lynch, 1984: 212)

Critical social scientists, who usually write about the negative dimensions of surveillance (and I include myself in this camp), may be doing a disservice to progressive social change when they quickly equate social control with disempowerment or oppression. What Kevin Lynch reminds us is that social and spatial control require constant monitoring and regulation in order to minimize oppressive tendencies and maximize empowering ones.

Perhaps it is obvious, but individually empowering, participatory, community-based control mechanisms—the likes of which might be called strongly democratic—flourish in small decentralized societies but are suppressed in large centralized ones (Lynch, 1984:234; Illich, 1973). The same might be said of technological systems: those that are locally based, small-scale, open-ended, transparent, and participatory will be inherently more democratic and less prone to abuse. Elsewhere I developed a parallel argument that surveillance systems should be designed and regulated along these lines, to cultivate local expertise and minimize problematic uses through transparent design, public involvement, and local accountability (Monahan, 2006). Several problems introduce themselves at this point, however. The first is that even strong

democratic processes do not always produce democratic outcomes, so firm criteria for evaluating new technological systems and preserving future democratic involvement must be included in any deliberation about or evaluation of technology (Sclove, 1995). Legal scholar Lawrence Lessig compares such criteria for technology infrastructure design to a constitutional framework. A constitution—or information architecture, as the case may be—cannot hope to stipulate all the rules for preserving democratic governance or predict in advance the host of future threats it might face. What a constitution can do is provide a set of guiding principles against which cases can be evaluated and decisions can be made. Lessig writes:

We build a world where freedom can flourish not by removing society from any self-conscious control; we build a world where freedom can flourish by setting it in a place where a particular kind of self-conscious control survives ... I mean an *architecture*—not just a legal text but a way of life—that structures and constrains social and legal power, to the end of protecting fundamental *values*—principles and ideals that reach beyond the compromises of ordinary politics.

(Lessig, 1999:5)

Because technology is most often perceived as political in its application but apolitical in its design, and because technology production is most firmly rooted in capitalist, free-market systems, the self-conscious establishment and preservation of such democratic architectures will probably continue to encounter serious resistance until such time as justice arguments can be merged with capitalist imperatives. That said, the current popularity of open-source software and growing interest in universal design may be harbingers of a phase shift, or at least a moment of opportunity to move in this direction.

The second problem that must be addressed, or at least acknowledged, concerns the influence of neoliberal structures and cultural logics upon the social field for technological development and engagement. In this context, even if transparency were achieved with the operation of surveillance systems, it could easily be appropriated to support a highly limited, consumerist orientation toward market “choices” instead of socially beneficial or community empowering outcomes. One can see this clearly in the domain of pharmaceutical drug marketing, for instance. A certain form of transparency is actualized through direct-to-consumer advertising, allowing consumers to obtain knowledge about drugs without having that information mediated by medical professionals (Fisher and Ronald, forthcoming). In such situations, transparency can actually reinforce a consumerist and individualist logic, which has little room for democratic control, by implying that with adequate information, consumers can make choices and vote with their dollars. A related problem can be seen with the provision of information in the name of transparency without accountability or any obvious mechanism to alter what is

transparently extractive, exploitative, or otherwise problematic. Physician conflict-of-interest statements or bank privacy statements (which might be more accurately called “lack of privacy statements”) function in this way by disclosing something that is unsavory without offering effective steps to mitigate it or real options to choose something different. In sum, transparency is no substitute for deeper structural changes that include real power equalization and serious accountability mechanisms.

At this stage, I would like to bracket these persistent (and important) structural problems in order to discuss some concrete possibilities for democratic surveillance. Thus far, the argument has been that we need democratic design processes and democratic criteria to regulate surveillance and other technological systems (e.g. egalitarian participation, conviviality, structural flexibility, and accountability). In addition to this, I would like to pursue the idea that the most democratic and socially empowering designs (of spaces, products, or technological systems) are those that work to correct power asymmetries. Often these are designs that are explicitly intended to include social groups that have been historically marginalized or discriminated against by the built world, including women, the elderly, the young, the visually impaired, the mobility impaired, and so on. It turns out that design for marginalized populations often produces designs that are better for most populations. For example, curb cuts in sidewalks or ramps up to buildings may be intended for people in wheelchairs, but most people benefit from them: people pushing strollers, people with canes or walkers, people on bicycles, and so on. The same insight could be applied to the design of surveillance infrastructures—to produce technological sensing and control devices that minimize power asymmetries to the benefit of individuals and the empowerment of a democratic citizenry.

The website Scorecard.org offers a compelling example of a surveillance system with impressive democratic potential. This site serves as a clearing house for information about releases of toxic chemicals and other contaminants in local neighborhoods (Fortun, 2004). It synthesizes “toxic release inventory” data compiled by the United States federal government, along with maps of “superfund sites,” lists of likely polluters in one’s neighborhood, comparisons with pollution in other cities, and action items for direct public involvement. It is a surveillance system in the sense that it manipulates data for purposes of control, meaning, ideally, the policing of potential and actual industrial polluters and the cleanup of toxic materials in one’s community. While this is not a completely transparent, open, or participatory form of surveillance, it is democratic in that it invites participation, fosters learning, and affords a degree of power equalization among local communities and institutions, be they industry or government.¹

Related surveillance systems might actively monitor air, water, or noise pollution and alert officials and communities to dangerous conditions. Artist Tad Hirsch, for example, has implemented a system called “Tripwire” for

sensing spikes in noise pollution in communities around airports and then generating automated (and individualized) complaint messages to local government hotlines.² The idea behind such complaint messages is that they must be accounted for as “data” in official government documents and that a preponderance of them may require some kind of regulatory action. While this system is even less participatory than Scorecard.org, it does represent another qualified form of democratic surveillance because of its attention to power equalization. It also points to opportunities for similar systems that could be more democratic in their design, such as ones that disseminated the data directly to the public or taught community members how to document environmental problems in a more scientific way (see, e.g., Ottinger, 2005).

In a different vein, the development of pervasive computing environments introduces other possibilities for democratic surveillance. For instance, in collaboration with design schools, companies like Intel are sponsoring experimental design projects for elderly care, with the idea of making older people less dependent on (and controlled by) caregivers. Pervasive sensing systems might assist with daily functions like food preparation, communication, entertainment, or health monitoring. Whereas most of today’s technologies for elderly care seem to stress disciplinary forms of surveillance, such as the use of wander guards and boundary alert units (which are systems designed to prevent movement by the elderly beyond certain perimeters), by shifting the user focus from caregivers to elderly populations, it is possible that more liberating and demarginalizing designs might emerge (Kenner, 2008). Designs *for* the elderly will likely be far more profitable for companies like Intel too, especially given the growth in senior populations in countries like the United States.

Obviously, such pervasive computing systems could be used by caregivers or others to further reduce the agency of the elderly by better controlling their daily activities, such as medication compliance or coffee consumption, for instance. Pervasive computing systems could also easily become information-extraction devices for marketing purposes. Therefore, in order for these systems to maintain their democratic orientation, safeguards would have to be implemented to protect the privacy of the elderly, and to place control of the technology in their hands. The risks for abuse may be high, but they do not erase the potential for empowerment, which may best be preserved through the active and ongoing negotiation of “shared protocols” by the primary stakeholders (Galloway, 2004; Murakami Wood, 2007). Additionally, reflexive design criteria could guide the design of pervasive environments to minimize their repressive qualities and maximize their empowering ones (Phillips, 2005). These might include basic tenets such as that the systems must be self-disclosing, default to harmlessness, preserve privacy, conserve time, and be deniable by users without any penalty (Greenfield, 2006).

It is important to recognize that in each of these examples democratic surveillance relies on the work of technical experts, even as in its ideal form

it encourages the development of technical literacy on the part of citizens. Technical expertise, however, is reoriented—or appropriated, as the case may be—away from instrumental logics of technical efficiency and toward broader social goals. According to the philosopher of technology Andrew Feenberg (1999), this reorientation is necessary in order to change the codes or architectures that shape technological practice over time, which is part of the process toward that he calls “deep democracy.” Feenberg writes:

I will call a movement for democratization “deep” where it includes a strategy combining the democratic rationalization of technical codes with electoral controls on technical institutions ... Deep democratization promises an alternative to technocracy. Instead of popular agency appearing as an anomaly and an interference, it would be normalized and incorporated into the standard procedures of technical design.

(Feenberg, 1999:147)

Whether one calls them codes, infrastructures, protocols, or something else, democratic technologies, including those of surveillance, hinge upon the intentional harnessing of control to structure environments for empowerment. Democratic codes are directed at achieving and preserving social goods beyond the technocratic or capitalistic ones of efficiency and profitability.

Conclusion

This paper has explored some of the democratic pitfalls and potentials of surveillance technologies. As a rule, contemporary surveillance systems are antithetical to democratic ideals both in their design and application. They individualize, objectify, and control people—often through their use of data—in ways that perpetuate social inequalities; they obfuscate social contexts through their lack of transparency; people are largely unaware of the functioning of their systems, or of their rights; and they resist intervention through their closed technical designs and management by technical experts or institutional agents. Especially by shutting down avenues for meaningful participation (or representation) in design processes that affect most people’s lives and by aggravating social inequalities, surveillance systems threaten democracy. That said, most large-scale technological systems are anti-democratic in their design and effects, so surveillance technologies should not necessarily be viewed as exceptional in this regard. What is important to note, however, is the pervasiveness of surveillance systems and the intensification of their social-control functions.

In theory, social control by technological means is desirable in advanced industrialized societies because it actively reproduces values and norms necessary for social cohesion but which are difficult to achieve in contexts of intense geographical dispersion, cultural diversity, and social stratification. In practice,

the surveillance functions of information systems tend to create and sustain conditions of inequality and identities of marginality through their differential application. For instance, surveillance as social sorting does not just discover and act upon differences; it manufactures *meaningful* differences based on particularistic indicators, such as wealth or skin color, and then excludes or includes populations accordingly, thereby shaping individual experiences and life-chances. David Lyon relates: "When people's life-chances depend upon what category they have been placed in, it is very important to know who designed the categories, who defines their significance and who decides the circumstances under which those categories will be decisive" (Lyon, 2007:186). In spite of the proliferation of social sorting and marginalizing technologies, most decisions about important categories or protocols are made by people far removed from any formal mechanisms of democratic control, ranging from city engineers to computer programmers to corporate managers.

What I call "marginalizing surveillance" takes social sorting to a more explicit level of discrimination by selectively targeting those of lower social status, usually the poor, for the most invasive forms of scrutiny and control. The converse of this holds true as well. For instance, whereas the spending habits of people on welfare might be tracked so that punitive measures can be taken for any deviation from the rules, the spending habits of the relatively affluent are tracked so that they can be rewarded for expensive purchases with further discounts or special offers. The automation of surveillance then serves to aggravate social inequalities by encoding into the systems neoliberal values of institutional efficiency and commercial profit, often to the exclusion of the social good. In addition to minimizing opportunities for democratic participation, or even inquiry into surveillance practices, automated surveillance destabilizes traditionally democratic beliefs in the possibility of achieving social status; instead one's value or risk is assigned in advance based on statistical probabilities.

Democratic surveillance implies intentionally harnessing the control functions of surveillance for social ends of fairness, justice, and equality. First, more than simply using surveillance systems in different ways, democratic surveillance involves reprogramming socio-technical codes to encourage transparency, openness, participation, and accountability to produce new systems and new configurations of experts and users, subjects and objects. Second, because neither participation nor transparency is enough (for example, one can willingly participate in one's disempowerment, and exploitation can be made transparent without allowing for change), democratic surveillance requires a set of protocols or criteria against which to measure social value. The shorthand that I offered is that democratic surveillance should lead to the correction of power asymmetries. Because surveillance societies appear to be here to stay, democratic ways of life may depend on tempering the growing hegemony of differential and automated control with alternative, power-equalizing forms of surveillance.

Notes

- 1 Similar systems for disseminating information and inviting action might not necessarily achieve democratic outcomes. For instance, one can imagine mapping systems that alerted residents to “undesirable” people, such as registered sex offenders, living in their neighborhoods. It is easy to imagine that such systems would be employed to further marginalize or harass those people considered undesirable rather than work to include them safely in community life.
- 2 <http://web.media.mit.edu> (accessed September 16, 2008).

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