

Article

Understanding resistance to digital surveillance Towards a multi-disciplinary, multi-actor framework

Aaron K. Martin

London School of Economics and Political Science, UK. <mailto:a.k.martin@lse.ac.uk>

Rosamunde E. van Brakel

University of Sheffield, UK. <mailto:lwp06rev@sheffield.ac.uk>

Daniel J. Bernhard

London School of Economics and Political Science, UK. <mailto:d.bernhard@lse.ac.uk>

Abstract

Despite being central to the dynamics of surveillance, the concept of resistance remains underdeveloped within the surveillance studies corpus. We review theoretical work on surveillance before summarising the main treatments of resistance from within surveillance studies. We find that the majority of resistance literature in surveillance studies is focussed on resistance relations between the surveyor and the surveilled, and neglects other relevant actors. To expand the list of relevant actors, we look to what other disciplines have to say about the *who* and the *how* of resistance. Using these lessons, we then elaborate a multi-actor framework to better understand complex resistance relationships. Beyond the surveyor and the surveilled, surveillance authorities, commercial enterprises, international governmental and non-governmental agencies, and the surveillance technologies themselves form a complex resistance nexus, capable of resisting and being resisted in a diversity of ways. Further, we conclude that these distinctive roles produce unique methods, directions and opportunities for resistance. The roles of these additional actors will be demonstrated through a discussion of the United Kingdom National Identity Scheme, where we believe they are presently engaged in a series of multi-level, multi-actor resistance relationships at various stages of the scheme's development.

Introduction

Resistance to surveillance is an increasingly topical issue in the media, policy circles and academe. UK graffiti artist, Banksy, has given popular expression to a growing anti-surveillance movement that is emerging in response to expanding surveillance programmes in that country. His famous London mural (see Appendix) portrays a stereotypically Soviet font with a police officer, dog in tow, collecting evidence of one lone crusader brave enough to speak truth to power. Banksy's piece resonates with citizens' discomfort over the creeping expansion of government surveillance, the intentions of which are unclear. A recent report from the House of Lords (2009) helps to reinforce this understanding of surveillance. Speaking on national television (BBC News 2009), Lord Norton described surveillance in the UK as "Orwellian", criticising the Home Office for proposing expansions to the government's surveillance powers. Norton, in partnership with advocacy groups and civil society, is resisting surveillance. Likewise,

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October 2008 saw globally coordinated public protests against government surveillance led by concerned citizens, campaigners and civil society organisations. Their global scope and high attendance made these gatherings remarkable, but do they fully capture the nature of resistance to surveillance? To simply equate resistance with public protest is to severely understate what resistance is all about, who participates and how. Though surely important, the relationship between a domineering government and a hapless citizenry is but one part of what must be a more complex, multi-directional and multi-actor resistance process.

Resistance is a central theme in surveillance studies, though the concept has yet to receive a thorough, systematic and focused elaboration in the academic literature. Where resistance has been treated in the literature, scholarship has largely centred around the resistance relationship between the surveyor and the surveilled, neglecting other possible actors who resist surveillance processes in various ways. We seek to conceptualise resistance for surveillance studies scholars by drawing from and building on theories of resistance from other relevant fields and disciplines to increase the scope of analysis to include the resistance relationships of actors beyond the surveyor and the surveilled.

Resistance can take many forms. In their review of the social science literature on resistance, Hollander and Einwohner (2004) note a lack of academic consensus on the definition of resistance. While almost all the articles they reviewed include (either explicitly or implicitly) some notions of *action* and *opposition* in their treatments of resistance, the issues of *intention* and *recognition* received varying attention and emphasis in the literature. Taking into account “the consensual core elements and the most significant dimensions of variation in the scholarly uses of the term resistance” (Hollander and Einwohner 2004, 534), they identify four consistent properties of resistance: its *interactional* nature, the central role of *power*, how the concept of resistance is *socially constructed*, and the *complex* nature of resistance (Hollander and Einwohner 2004, 548-549).

Unlike Hollander and Einwohner, we are not frustrated by the diversity and perceived imprecision of the term “resistance” in the many sociological studies on the topic. Rather, we embrace this diversity. Surveillance studies is an explicitly multi-disciplinary enterprise (Lyon 2006) and thus our review summarises what we see to be the most relevant theories of resistance from other fields and disciplines, synthesising these into a working framework for a more sophisticated understanding of multiple resistance relationships pertaining to surveillance. These ‘reference disciplines’ include international relations, social psychology, information systems and education studies. Understanding resistance in such a multi-layered way allows us to capture the different aspects of resistance within surveilled worlds, along with its multiple ontologies, and offer an interdisciplinary treatment of resistance that accounts for a wide array of actors and resistance relationships. Whilst this list is far from exhaustive, it does provide an initial set of ideas with which to more fully conceptualise resistance for surveillance studies scholarship. As this is a working framework, we hope that it will be further developed by scholars familiar with additional aspects of resistance that fit the surveillance context.

Theorizing technological surveillance

Lyon defines surveillance as “any collection and processing of personal data, whether identifiable or not, for the purposes of influencing or managing those whose data have been garnered” (2001, 2). While this definition suffices as a general characterisation of surveillance, in this paper we are particularly interested in digital surveillance. Graham and Wood (2003) distinguish between analogue (i.e., bureaucratic and electromechanical) and digital surveillance, arguing that digital methods facilitate more pervasive surveillance in real time (Graham and Wood 2003, 228). They further argue that digitisation trends towards automation and thus shifts the role of human operators during the surveillance work. Through this process of automation, human discretion is displaced by operators who merely program, supervise and

maintain systems. This newfound role for human operators introduces interesting possibilities for resistance.

The changes brought about by the digitisation of surveillance technologies are not merely quantitative (in terms of size, coverage, speed, intensity, etc), but also qualitative. With digitisation comes information that is more amenable to storage, transmission and computation, as well as algorithmic surveillance (Introna and Wood 2004). This ability to easily and efficiently store, sort, classify, retrieve and match information in digital systems becomes increasingly significant, amplifying the capacities of the surveyor and the effect on the surveilled far beyond the potential of analogue methods (Norris and Armstrong 1999).

In their paper, Graham and Wood ask whether these qualitative changes that surveillance practices undergo through digitisation merit a new theory of surveillance (2003, 229). They first point to Poster's critique of Foucault's Panopticon. Poster proposes a Super-Panopticon: "a system of surveillance without walls, windows, towers or guards" (Poster 1990, 93). They also recall Gandy's work on information age capitalism (1993), and various research on data selves and identity to support this re-theorisation (Graham and Wood 2003, 230-231). While not discussed explicitly in their paper, another part of this re-theorisation comes in work on the *surveillant assemblage* (Haggerty and Ericson 2000).

Haggerty considers the dominance of the Panopticon in contemporary surveillance theory to be a problem. He argues that it has been overextended to domains where it seems ill-suited, and that important characteristics of surveillance that do not fit the model are neglected. Haggerty concludes that surveillance studies now mirrors the situation of a normal science on the brink of a paradigm shift, as scholars come to realise the limited relevance of the Panopticon model to the contemporary dynamics of surveillance (Haggerty 2006, 23). The main questions that have been raised pertain to whether the architecture of control has been superseded, whether the mechanisms of control have changed and whether the direction of the gaze has shifted elsewhere.

According to Haggerty and Ericson (2000), surveillance is one of the main institutional components of late modernity. They prefer the concept of an emerging *surveillant assemblage* over the Panopticon. The assemblage operates by abstracting human bodies from their territorial settings and separates them into a series of discrete flows, which can be reassembled into distinct 'data doubles', analysed, and targeted for intervention. A rhizomatic levelling of the hierarchy of surveillance occurs; groups which were previously exempt from routine surveillance are now increasingly being monitored (Haggerty and Ericson 2000, 606). Theories of resistance within surveillance studies must thus take into account these digital, algorithmic and rhizomatic aspects of new surveillance practices.

Traditional ways of understanding surveillance, by focussing on the increasing capabilities of the surveyors and the expansion of surveillance to include previously exempt groups, reinforce the conception that surveillance is a party for two: an exclusive relationship between the surveyor and her subjects. Looking at the world this way not only ignores some of the actors who resist surveillance, but also excludes the assemblages that conduct the surveillance. We seek to bring these other actors to the fore. To this end, the remainder of this paper is structured as follows. In the next section we review how resistance has been discussed to date by authors normally associated with surveillance studies. Then, after briefly introducing our case study, we review resistance discourses from other academic fields and disciplines. We then return to the case study to apply lessons learned from these other fields and disciplines. This allows us to better understand current and emerging resistance between the various actors. Finally, we ask: how might we generalise a new framework for understanding resistance in surveillance studies that takes into account these additional actors and their multi-dimensional interactions?

Resistance in surveillance studies

In many respects surveillance is constitutive of modern society. While this is especially the case in today's information society (Lyon 1995) – in which our 'data doubles' grow increasingly large and surveillable – surveillance and resistance thereto have long been common. For example, many 17th century Parisians resisted the installation of fixed street lighting in their city, viewing it as an unacceptable form of visibility and surveillance (Schivelbusch 1987). Further, Gilliom (2001) links *fin de siècle* American welfare programmes to state surveillance of the poor. While new information technologies change surveillance in significant ways, the basic motivations for and practices of surveillance are anything but new. Just as surveillance has become a normalised part of everyday life, resistance to surveillance is equally 'normal' (De Certeau 2002). Yet resistance is not merely an epiphenomenon of surveillance – it is a basic and necessary co-development of surveillance, existing in many forms that often go unrecognised.

Interpretations of the Panopticon often assume inmates without agency. Foucault's subjects are seen as limited agents overwhelmed by surrounding structural pressures (Butin 2001). In this Panoptic setting it is expected that the deviants condition themselves into normal individuals. For Foucault (1977), individuals only accept surveillance as normal whilst it remains hidden. But it can never be hidden completely; the Panopticon can only be a conditioning force when inmates are aware of the guard's – perhaps invisible - existence.

Though this is an attempt at absolute control by the surveyor, the inmate's consciousness of omnipresent surveillance engenders resistance to both the surveillance and its self-normalising objectives (Krueger 2005, 441). "These power relations are thus mobile, reversible, and unstable" (Foucault 1997, 292). Giddens's 'dialectic of control' elaborates this inter-relational conception of power, emphasising the roles of both dominant and subjected actors to the normalisation of control. For Giddens, "all forms of dependence offer some resources whereby those who are subordinate can influence the activities of their superiors" (Giddens 1984, 16). Surveillance is not just a matter of the gaze of the powerful, anymore than it is technologically determined. Data subjects *interact* with surveillance systems.

These arguments by Foucault and Giddens further reinforce the two-actor paradigm in thinking about surveillance. Even critiques of Giddens by Bogard (1996), who argues that resistance does not overcome surveillance but rather strengthens its power dynamics, assume a two-actor model.

Newer theories of resistance to surveillance imply an awareness of the inter-relational nature of resistance and the agency of the less-dominant actor while remaining comfortably situated in the two-actor paradigm. Building on work by organisational theorists such as Prasad and Prasad (2001), Ball (2005) focuses on biometric surveillance in the workplace. Ball locates resistance at the nexus where the body and technology intersect. She offers strategies of resistance to bodily surveillance, including "disrupting flows of information from the body to the information system, disrupting the time it takes to encode the body, coding the body in an alternative way, and moving the interface/boundary between the body and surveillance system" (2005, 104). With her suggestions, Ball reveals two inherent assumptions: (a) the subordinate actor is an autonomous agent capable of interacting with both technologies and observers, and (b) resistance emerges because surveillance is recognised and rejected as abnormal and unnatural. Still, the surveyor-surveilled relationship is her prime concern. Mann, Nolan and Wellman (2003) perpetuate this binary focus, proposing 'sousveillance' as a counter to surveillance. Sousveillance uses technology to confront bureaucratic organisations by mimicking the behaviour of the surveillance authority, holding a mirror to surveyors and asking: "Do you like what you see?" Sousveillance resonates with Marx's (2003) proposal to resist surveillance through non-compliance and interference; blocking, distorting, masking, refusing, and counter-surveilling.

As Ball and Mann *et al* have shown, resisting surveillance need not be an organised affair. In his work on welfare surveillance, Gilliom (2001) argues that poor and underprivileged people often lack the resources to organise formal protests and resistance campaigns. Instead, they resort to *ad-hoc* resistance techniques, including food stamp fraud and withholding information from the welfare administration. Gilliom draws on Scott's (1987) work on peasant resistance to describe the phenomenon. What emerges is a "widespread pattern of complaint, evasion and resistance, as welfare mothers struggle with the system that defines their condition" (2001, 112). By Gilliom's account, even these powerless actors can successfully undermine the surveillance mission. Moving away from the surveyor-surveilled fixation, Gilliom identifies resisters other than the subjects of surveillance. In some instances, morally conflicted welfare administrators resist authorities by coaching recipients on ways to game the system. Gilliom's broader conceptualisation of the actors and processes involved in resisting surveillance expose a vast and largely unexplored theoretical space that we seek to develop here. His contributions go beyond the general portrayal of resistance by the bulk of surveillance studies scholarship reviewed above.

Moving away from the Panopticon's absolute dichotomy, Gilliom exposes more layers that separate the surveyor from the surveillance authority. Appreciating this trend, we seek to continue to identify other actors who resist surveillance and elaborate a framework through which to understand the interplay of the relational roles of different actors and the nature and direction of their resistance to surveillance. Completing this exercise requires that the following gaps in the surveillance studies literature be addressed:

- Who are these other actors and how do they relate to one another in resisting surveillance?
- How does a given relational or power role facilitate certain resistance possibilities and directions? Can the empirical identities and backgrounds of specific actors affect this role-based range of action?
- At what stages in a given surveillance development is resistance happening or possible?
- Can these findings contribute towards a generalised and parsimonious framework for understanding resistance to surveillance beyond the dyadic norm?

To do this, we propose to analyse the National Identity Scheme (NIS) currently being proposed in the UK. Because it is national in scope, and will eventually be compulsory, the NIS involves everyone in that country (as well as certain visitors), who can surely be classified in more detailed groups than simply surveyor and surveilled. Further, the digital nature of the programme facilitates easy access to information by many actors, but also requires broad enlistment of government, ministerial and corporate actors, as well as wide citizen participation, to be effective. In addition, successful implementation of this scheme will require a high degree of technological compliance which, as we will show, can be problematic. The makeup of the proposed NIS implies the existence of many functionally different actors, whose participation and resistance can be generalised into an initial working framework to better understand resistance to surveillance in our contemporary information society.

Introducing the case of the UK National Identity Scheme

The Identity Cards Act (2006) mandates a national, biometric-based identity system known as the National Identity Scheme. The Act authorises the creation of a National Identity Register (NIR) and the use of biometric identity documents including passports and ID cards. A number of features distinguish this scheme from other national identity schemes, including the planned use of biometrics - both for enrolment and verification - the proposed use of a single identification number across government and the private sector and a so-called 'audit trail' that records full details of every instance that an identity is verified against information stored on the NIR.

This scheme is only practicable on a national scale through the use of digital technology. The ability of multiple government agencies, service providers, corporations and foreign travel authorities to access a centralised identity database, in real-time if required, depends on digitisation. The widened participation facilitated by digital technology opens this development to other actors, whose roles have not been fully treated by surveillance studies. Their complex and multi-directional inter-relations will surely involve resistance. By reviewing all references to the NIS in Hansard along with an extensive review of media reportage of the scheme as part of a multi-year study, we have identified several actors who are normally not thought of as resisters that we feel are in fact engaged in a wide variety of resistance to surveillance. These include international governmental and multi-governmental bodies, surveillance authorities, the actual surveyors, commercial enterprises, the surveillance technologies themselves, and, obviously, surveilled populations. These actors are resisting one another in varying combinations and in diverse ways. To better conceptualise the resistance relations of these new actors, we have drawn upon literature from other disciplines, to see how they treat resistance. International relations, social psychology, information systems and education studies each offer a unique perspective on resistance, the actors involved and the ways that specific role and power relations condition the possibilities for resistance.

Resistance in other fields and disciplines

The content of our interdisciplinary review reflects the respective specialisations of each author. These fields were selected in the hope of contributing to a more holistic understanding of resistance that includes varying actors and unique methods of resistance which different resistance relationship dynamics make possible. Each of the following subsections begins with a more detailed explanation of its literature selection.

International relations

Resistance permeates the entirety of the international relations discourse, but scholarship can be divided into relatively easily distinguishable theoretical camps with seminal works and keystone contributors, a sampling of which is presented here. Special attention is given to the realist and constructivist schools, which remain engaged in ongoing debate, though a contribution from the sub-field of foreign policy analysis is included because this work is highly empirical.

Scholars in the realist school view states' principal function as resisting others, who by nature will constantly seek to restrict their independence of action for the present and future. Waltz's (1979) argument that the structure of the international system of states inherently engenders mistrust and therefore resistance has become the centrepiece of the discipline. In an anarchical system where no higher order exists above the sovereign state to mediate international relations, unequal material distribution frightens weaker states, who then 'balance' against stronger states by increasing their relative position through internal development or by forming coalitions with other concerned states (Waltz 1979, Chapter 8). As Layne (1993, 12) puts it, "structural realism leads to the expectation that hegemony should generate the rise of countervailing power". Layne (2006, 7) speaks of "the seemingly ironclad rule of modern international history that hegemony always provoke...the counterhegemonic balancing of other great powers". Material disparity will always create resistance of the less powerful against the dominant. Since development is never globally even, resistance is a permanent hallmark of the international system.

Balancing normally describes coalitions of weak states coalescing to counter a common threat, but it can work in the other direction, too. Morgenthau (1948) sought to develop a practitioners' manual of pre-emptive resistance, whereby states would seek the means to control their environments and never be subject to the will of present and potential superiors. Though he does so critically, Layne (1998) also describes the current American defence strategy of preponderance in this way. To guarantee their long-term security, successive American governments have sought to discourage balancing by militarising to the point that the cost of catching up decidedly overwhelms the benefit of doing so. "The strategy of

preponderance rests on the assumption that states gain security not through the balance of power, but by creating a power *imbalance* in their favour” (Layne 1998, 10, emphasis original). In this sense, the powerful, too, can resist, in an attempt to prevent future subordination. This assertion provides a new direction to resistance which conventional surveillance literature omits. In the surveillance context, this work implies that dominant surveillance authorities play a resistance role.

Constructivist scholars point to resistance as a function of a certain kind of relationship. Wendt (1992) defines hostility and defensiveness in terms of a history of inter-relations between two states. Wendt invites the reader to imagine what would happen if aliens came to Earth. Humans, he claims, would no doubt be cautious, but would await signals of intent before deciding to stand down or fight (405). For Wendt, mistrust and resistance are not systemically inevitable, but rather one of several possible outcomes that include hostility, contractually peaceful relations and natural harmony of interests. Wendt’s work provides theoretical elaboration to the concept of security communities: Groups of states who feel as though they form a community wherein competition is a rule-bound endeavour, granting the “assurance that they will settle their differences short of war” (Adler and Barnett 1998, 3; cf. Deutsch 1961). Wendt underscores an actor-specific angle of resistance, whereby the insecurity that motivates states to resist is not a natural systemic characteristic but rather the product of substantive inter-relational histories. For surveillance studies, this means that resistance is not an unavoidable consequence of surveillance, but rather the result of a certain interpretation that surveillance is overbearing. That interpretation is dependent upon the specific relational history of the actors involved.

Subsequent empirical research has further developed actor-specific understandings of insecurity and resistance. Building on Wendt’s work, Gong (2001) analyses Sino-Japanese relations to conclude that each country will resist co-operation less if the historical foundations of their mistrust can be redressed. Gong identifies resistance actors at levels beyond the state. He found that inter-governmental initiatives aimed at improving Sino-Japanese relations were hampered by domestic protest – popular resistance against (a) one’s own government, (b) the opposing public constituency, and (c) the other government. This complex resistance nexus highlights the indirect relational possibilities of resistance, as two publics with no official links resist each other via domestic political institutions.

Social psychology

The social psychological literature on resistance often focuses on popular resistance to social change. While this change often comes by way of new scientific innovations and technologies such as nuclear power and biotechnology (Bauer 1995), this literature also addresses resistance to other, non-technological phenomena, such as taxation. A seminal paper within this literature is Scott’s (1987) historical comparative case study of peasant opposition to the Islamic Zakat in Malaysia and Christian Tithe in France, both of which were perceived to be inequitable and were therefore resisted. As previously mentioned, Gilliom’s (2001) study on welfare surveillance incorporated concepts from Scott’s work. We have chosen to focus solely on Scott’s work here, as an in-depth review of his social psychology of resistance adds an important dimension to our working framework.

Fundamentally, Scott (1987: 419) is interested in exploring whether what he terms “peasant resistance”, i.e., “any act by a peasant that is intended to either mitigate or deny claims made on that class by superordinate classes or to advance peasant claims vis-à-vis these superordinate claims”, should be understood as a social movement, even though it does not involve overt protest, and exhibits little to no organisation. In his eyes, theories of popular movements that focus primarily on organisation, collective identities, and grand objectives distract us from the everyday, prosaic, and ongoing resistance of peasants. For Scott the aggregate impact of seemingly trivial, individual acts of resistance can be far greater than large, organised movements.

Peasants in Scott's study resist with "the everyday weapons of relatively powerless groups: foot-dragging, dissimulation, false compliance, pilfering, feigned ignorance, slander, arson, sabotage, and so forth" (419). Importantly, these forms of resistance generally avoid the sorts of direct symbolic confrontation with authorities that we tend to associate with resistance movements (420). They are durable in that they can persist over decades or even centuries, and produce a form of tacit coordination amongst participants. These forms of resistance typically take place at the enforcement stage, as powerless groups often lack the means and resources to contest decision-making in earlier stages (422). This point about stages is largely ignored by surveillance studies literature and will find treatment in our framework below. Paradoxically, the peasants can be most effective when they follow the path of least resistance: "the goal, after all, of the great bulk of peasant resistance is not to overthrow or transform a system of domination but rather to survive – today, this week, this season – within it" (423-424).

Scott is weary of the scholarly tendency to historically extol organised resistance at the expense of other forms. Treating the absence of organised resistance as the absence of any resistance misconstrues the debate and ignores the attitudes of multitudes of subordinate peoples as expressed in their everyday lives. Scott is careful to note the importance of making distinctions between varying forms of resistance. Everyday forms of resistance are employed to attain immediate personal gains whilst avoiding the risks associated with large-scale organised protest. Recognising the difference between formal and informal resistance allows the scholar to explain how each mode relates to the other and to the system of domination in which it occurs. Further, Scott's work highlights the effects of actor roles on the way resistance is expressed. The specific relational dynamic existing between actors of varying classes and power dispositions directly affects the ways they can resist each other.

Information systems

The information systems literature reviewed here includes two seminal works on resistance to implementing new information technology in organisations, along with a more recent set of ideas influenced by science and technology studies. These works represent the major currents in both positivist and constructivist information systems research.

The information systems literature on resistance is typically pre-occupied with business organisations or firms, and how users resist organisational change enabled by new information and communication technologies. These technologies need not be designed specifically for surveillance, although many of them do have a surveillance dimension (cf. Zuboff 1989 on 'informating' work), for monitoring employee performance to increase worker efficiency.

Hirschheim and Newman (1988) study user resistance to computer-based information systems. User resistance ranges from physical sabotage of new systems to simple non-use, to subtle and covert political manoeuvring in reaction to organisational power redistributions. They view resistance as resistance to *change* as embodied in new technological systems, and see it as a normal and universal phenomenon within organisations. They highlight certain behaviours that may be characterised as resistance, including hostility, frustration, conflict, regression, aggression, and projecting blame. Far from being simply a tool used by actors within existing social frameworks, technologies affect social structures and also define spaces within which actors can resist and the means available to them to do so.

Their discussion on the *scope* of resistance is particularly relevant here. Resistance may occur at various stages during the development life-cycle of information systems: during systems analysis (in which users refuse to specify accurate system requirements for designers), during implementation (in which users are intentionally absent during the technology's introduction), or during operation (where resistance can happen at various levels of the organisation (399).

Hirshheim and Newman exemplify a general tendency in information systems scholarship that expands the scope of resistance to include technology as a parameter-conditioning force. The life-cycle of a given technology creates resistance opportunities of a specific kind, reflecting a specific socio-relational dynamic through the various points in its development and use.

Keen's (1981) conception of resistance through "counter-implementation" also accounts for the effects of technology on existing social and organisational relationships and the resistance that occurs within them. He states that "information systems increasingly alter relationships, patterns of communication and perceived influence, authority, and control. A strategy for implementation must therefore recognise and deal with the politics of data and the likelihood, even legitimacy, of counter-implementation" (24). Keen's analysis shows how actors are consciously aware that technology alters existing relationships. By laying low, relying on organisational inertia, designing projects to be overly complex, minimising implementers' legitimacy and exploiting their lack of inside knowledge (30), those interested in resisting technologies that alter organisational dynamics can successfully counter-implement.

Equally conscious of how technologies affect social structures, proponents of organisational change turn to what Keen calls "counter-counter-implementation". By creating detailed contracts, actively confronting resistance at its first signs, building personal credibility and co-opting users early in the technological life-cycle, champions for change try to thwart counter-implementation (30). Counter-counter-implementation resists resistance. As with the international relations literature, Keen's account highlights the multi-directional potential for resistance – from powerful to powerless in the case of counter-counter implementation – as well as the various forms of resistance that occur at each stage of the technological life-cycle.

More recent information systems research provides fresh views on how technologies themselves transcend the inanimate and can become agents in social processes. Influenced by conceptual developments in science studies and actor network theory (cf. Latour 2005), this literature explores how technology itself resists by betraying the original intent behind its introduction. "In this way, the technology is seen to have agency in much the same ways as human elements of the organisation" (Sørensen et al. 2001). When chemical reactions blow up laboratories, particles resist manipulation by human controllers. Similarly Latour (2000) argues that technologies may also resist their human adaptations and coding. When database security mechanisms give anomalous results, profiling systems fail or crash, and biometric systems fail to provide one-to-many or many-to-many results, technologies obstruct the surveillance mission beyond the point of simple malfunction. Through inadequacy, design flaws or inherent limitations, technologies can and do resist their intended applications. Current frameworks as yet do not account for technology as a resistor. Technology is a new actor in the resistance-to-surveillance nexus that merits theoretical elaboration.

Education studies

From the 1960s onwards, education studies, led by Paolo Freire, has produced an abundance of resistance literature, known as the 'pedagogy of freedom'. In addition to a discussion of Freire's pedagogy of freedom, we look at some more recent publications on resistance pedagogy, where Foucault's influence can be discerned. Freire's *Pedagogy of the Oppressed* (1970) has heavily influenced the conception of resistance in education studies. Reproductive accounts of schooling underlined that schools could not derail the reproduction of the oppressive social class relations inherent to capitalism (McFadden 1995, 295). For Freire, no form of education is neutral. He proposes that student-centred pedagogy can create a critical consciousness capable of facilitating action in pursuit of equality and democracy. Resistance is therefore integral to the educational process, as all pedagogy is a call to action.

Educational theorists depict resistance through nuanced theoretical tools for intervening within structures of power in diverse contexts across a range of institutional and ideological conditions. Beyond describing

models of oppression, they point to the possibility of intervening productively in educational settings that are continually subject to manipulation by external authorities (Giroux 2003, 9). Education has the power “to progressively transform the environment by attempting to undermine the reproduction of oppressive social structures and social relations” (Walker 1985, 65).

Freire’s proposition and contributions by Walker and Giroux raise some very interesting levels of analysis questions. How is it that a tightly-controlled relationship can cultivate a critical consciousness with regards to macro-societal levels of organisation that do not apply at the smaller unit level? That the referent object of resistance can change across levels of analysis – authority at one level is acceptable while control at higher levels of organisation is not – requires further attention.

Resistance can be understood as a “multi-layered phenomenon that not only takes diverse and complex forms among students and teachers within schools but registers differently across contexts and levels of political struggle” (Giroux 2003, 9). The contexts include resistance to authority/oppression and resistance to change, but also Foucauldian self-(re)constitution, which provides an effective form of resistance to normalization processes (Hyde 2007). That this resistance consciousness and the pedagogy of freedom are themselves developed in a controlled environment speaks volumes about the validity of Freire’s claim. Though the classroom provides a clear authority structure, if the authority is legitimate and just, it is resisted less.

Like Foucault, and flowing from the differentiation arguments implicit to Freire’s work, Schutz (2004) distinguishes between two types of control: pastoral and disciplinary. Disciplinary forms are top-down, centralised forms of power. Pastoral controls are bottom-up, salvation-orientated and individualising (Foucault 2000, 14). Schutz describes how these different types of control translate into different types of classroom. Disciplinary control generates traditional classrooms with desks in rows and one-way interaction whereas pastoral control favours progressive arrangements with tables in a circle and a participatory learning environment (15). In the progressive classroom, the students and the teacher collectively monitor each other. For Schutz, these classroom arrangements influence if and how resistance is generated. Gutierrez, Rymes and Larson (1995) show how disciplinary contexts tend to generate more resistance than do pastoral modes, since direct control is easily recognisable and students are conscious of teacher domination and their subordinate role, much like Foucault’s inmates. In pastoral settings, where control is diffuse, resistance becomes difficult where no identifiable figure of dominance exists (Schutz 2004, 15).

Freire’s position and the arguments about distinctive forms of control raise some interesting prospects for elaborating a resistance-to-surveillance framework, for they suggest that the substantive content of previous interactions between agents can affect the resistance context. The notion of justice and the pedagogy of progressive social action imply resistance not only to power but to a certain kind of exploitative power at a certain level of abstraction beyond the intimate classroom. That actors can distinguish between different forms of authoritative control supposes that a specific social context underpins resistance relations. Abowitz (2000, 878) therefore posits that resistance constitutes a means of generating and developing dialogue around particular power imbalances and inequalities.

The National Identity Scheme: Actors, Roles and Resistance

Our inter-disciplinary review has identified several potential resistance relationships beyond those between the so-described watcher and watched. We have exposed several new potential resistors outside of the surveyor-surveilled relationship that exceed the bounds of contemporary surveillance studies research. These include governmental actors at various levels of organisational complexity, surveillance enforcers and technological artefacts. These provide several possibilities for complex, multi-directional resistance relationships. To map these possibilities onto the surveillance context, we offer a discussion of

the United Kingdom National Identity Scheme, first introduced above, illustrating the presence of these actors and their complex resistance relations. We then elaborate a generalisable framework for understanding resistance to surveillance that includes these actors and the various resistance possibilities enabled by their specific relational positions and power capabilities in the development of a surveillance project.

Surveilled

Of any group that could potentially resist the NIS, the surveilled population is a good first choice. As we have noted, surveillance studies scholars have done a good job exploring the dynamics of how the surveilled resist. Rather than reiterate these at length here, we focus on a couple novel forms of resistance by the surveilled.

Campaigners (such as NO2ID) and opposition politicians have been leading the ‘Renew for Freedom’ initiative to have individuals avoid enrolling into the scheme by pretending to lose their identity documents now, and applying for new documents such as passports, before it becomes mandatory to be registered on the NIR.

There have also been calls to boycott companies that do eventually become involved in the NIS. In practice this means that people might refuse to do business at the high street enrolment centres that the government is keen to contract the surveillance work to.

International actors

After introducing the Identity Cards Act to Parliament in January 2005, then Prime Minister Blair justified the scheme in the face of loud opposition, saying: “The next few years are going to see effectively a visa and passport revolution across the EU and the developed world. We have the chance to use this opportunity to get ahead in this change and the move, therefore, to biometric passports makes identity cards an idea whose time has come” (Russell 2005). The International Civil Aviation Organization (ICAO) standards to which Blair was referring were in fact far less comprehensive than the card his government was proposing. The basic requirement was for a digital facial photograph on a chip on the passport itself; whilst the UK plan called for both fingerprints and iris photographs in addition to a face biometric, centralised onto a single database. European Union standards for Schengen-area member states only called for fingerprints, and are agnostic on the number of fingerprints or whether to use a database; i.e., the Germans say two fingers and *nein*, the French say eight fingers and *oui*.

Given the government’s previous opposition to any potential loss of its policy independence to centralised European authorities, including rejections of the Euro and the refusal to accede to the Schengen agreement, this justification seems unlikely. It is more likely that for once, the government’s proposals were in accord with international standards, enabling cooperation where an attempt by an external body to legislate on behalf of the UK would have otherwise caused uproar. This is non-resistance in an area where a resistance relationship could well have developed. Though this may seem an anticlimactic observation, the potential for a resistance relationship between the surveillance authority and external policy actors is compelling.

A resistance relationship materialised in a similar case involving Canada and American standards. The Western Hemisphere Travel Initiative (WHTI) was a mandate of the United States Department of Homeland Security, declaring that all entrants to the United States would require a high-security identity document. Canadians, who previously had not even required a passport to enter the US by land, would soon be unable to enter the US as they had routinely done in the past. This not only meant that Canadians’ travel would be encumbered but that their government would acquire a significant administrative burden to comply with American requirements. The standards also amounted to *de facto* legislation by the American government of what information the government of Canada would collect and store on their

own citizens that subverted Canadian sovereignty and the democratic process there (cf. Hosein 2004). This resistance to surveillance, performed by one surveillance authority against an external actor (who happened in this case to be another surveillance authority), exceeds the scope of traditional surveillance studies.

As a major hub for foreign nationals, it is conceivable that the UK will at some point demand similar documentation from foreign citizens, effectively legislating on behalf of other governments. This raises interesting possibilities for international surveillance resistance between authorities.

Surveillance authorities

Widespread popular, bureaucratic, and commercial opposition to the NIS has created unique opportunities for resistance by the original architects and proponents of the scheme. Government champions of the NIS are in a unique position to actively counter user attempts or opportunities to resist by engaging in counter-counter-implementation: resistance of the powerful against their subordinates. Such defensive strategies are currently being employed by the Home Office, the government ministry behind the NIS. They attempt to minimise the negative public relations that come with every government data breach, downplay the true extent of public discontent towards the scheme and continually (re)assure the public and other institutional and ministerial opponents of the NIS that public opinion really does support the policy. As Home Secretary Smith recently remarked; “I believe there is a demand, now, for cards - and as I go round the country I regularly have people coming up to me and saying they don't want to wait that long” (Smith 2008). Government’s relationship to citizens and corporate actors allows it to resist pre-emptively, by attempting to co-opt certain user groups first, in particular airport workers, students, 16-25 year olds, and foreign nationals, through various incentives and by appealing to perceived deficiencies in current means of identity authentication that resonate with a vaguely-defined but widely perceived public xenophobia.

Surveyors

The wide scope of the NIS means that the collection and verification of information will involve many intermediaries – surveillance enforcers who are removed from the planning and creation of the surveillance mission. If the scheme is implemented as planned, surveyors will include an array of private and public sector front-line service employees that ask for proof of identity as part of their daily work. Standing between the architects of the surveillance construction and its inhabitants, these surveyors occupy a special role with specific powers that enable them to resist uniquely.

Beyond lax implementation – itself resistance to the thorough identification procedure which the NIS demands - human operators can be actively complicit in user resistance. For example, a benefits official could deliver services without proper biometric verification out of sympathy for the claimant. Such an action would, of course, depend upon a specific relationship between the claimant and enforcer.

We must also consider situations in which the surveyors are machines. When fully automated surveillance systems breakdown or malfunction, they effectively derail the surveillance mission in the same way that human sabotage would do. The reality of technological imperfection amounts to a kind of resistance, thus the surveillance artefact itself acquires an agency of sorts which surveillance studies scholars have so far denied them.

Surveillance artefact

Technology, for its imperfect design and propensities for malfunction and misuse, is able to undermine surveillance developments as well as many human actors. We argue that it should be understood as a distinct actor possessing a certain agency. Apart from the potential to breakdown or fail, the absence of technologies capable of fulfilling a desired surveillance mission is as effective a resistance mode as legislative or executive modifications to the intended scope of surveillance. As regards the NIS, technology has fought back with a vengeance. In 2007 the Home Office was forced to drop iris biometrics

from the system for reasons that remain uncertain, although this exclusion was probably motivated by a concern for keeping system costs at bay.

It is also likely that once it comes time to enrol people into the scheme, fingerprint technology will also strike back, as certain members of the population will be unable to provide usable fingerprints. Likewise, we can expect regular false matches in which case “exception handling” will be required to overcome this technological resistance (Biometrics Assurance Group 2007).

Commercial actors

Commercial actors play an interesting role in the NIS resistance nexus, especially considering that their motivations and incentives differ from those of the surveillance authority. Many companies sent representatives to give evidence to ministers before the Act was passed, expressing their concerns with the government’s proposals. Some companies decided not to bid on NIS contracts for fear of the reputation hit, and some companies’ employees and spokespeople have publicly criticised the scheme. The highly politicised nature of this programme means that it is risky business to get involved, especially considering that the UK Conservative party has vowed to cancel the scheme if and when they come into power. Corporate disinclination resists the Home Office, which wants to drive down costs through competitive bidding. Without these important actors, the surveillance authority might find itself hard pressed to locate the adequate resources to do the planned surveillance work.

Generalising a multi-actor, multi-level framework

In this section we generalise from the case discussion, showing how these newfound actors might interrelate with one another in a given surveillance context, and across various levels of analysis. Far-reaching surveillance schemes, enabled and facilitated by digital technology, are intended to encompass whole populations and thus necessarily include many actors at many levels of organisational complexity. These differentiated agents cannot simply be divided into surveyor and surveilled camps – they inhabit many different roles. Many actors resist surveillance beyond the surveilled population. Though resistance clearly connotes opposition to an unwelcome power-play, powerful actors in government can resist, too. Surveyors and commercial actors - who hold power over certain actors, are subordinate to others and are independent from others still - resist also. Diagram 1 (overleaf) summarises these resistance relationships from the NIS case.

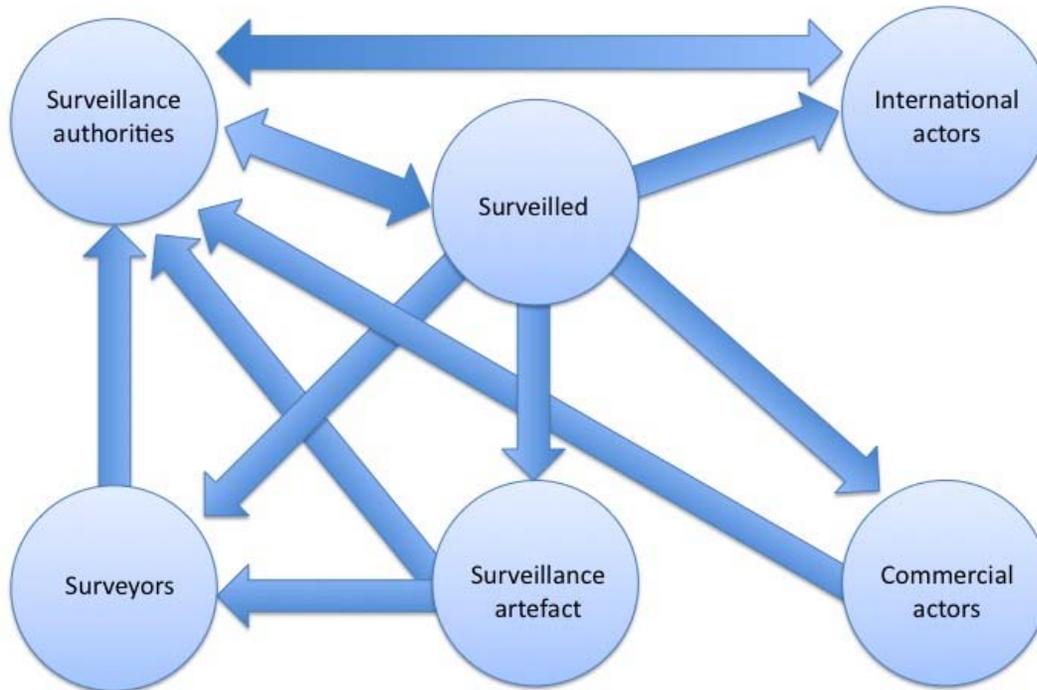


Diagram 1: Some resistance to the NIS

The ability of an actor to resist, the ways they resist and the actors at whom their resistance is directed are determined in large part by the power relations of the resisting actor to the others, as well as by the context. For instance, the NIS can be interpreted as a form of disciplinary control. Like the teacher in traditional classrooms, the NIS presents a clear, dominating agent which can be easily identified and resisted by the surveilled. However in other cases the architecture of control is not that straightforward which has consequences for how resistance takes place. Certain roles create a structure in which resisting certain behaviours from certain actors is motivated, whilst other avenues of resistance are either discouraged or constrained. Giddens is correct to point out that all modes of dependency provide some means of resisting oppression, though the NIS study has shown that all roles, dominant or subordinate, dependent or independent, connote specific resistance directions and possibilities. Corporations, for example, are legally independent from government and have no legal responsibility not to surveil their customers, though they still resist.

Surveyors, too, through their power to disrupt the system and their knowledge of its practice and use, are uniquely equipped to resist in cases where the combined effects of their relationship with the surveillance authority and the target population motivate them. They can bypass systems and educate the public to bypass systems. Again, the desire to resist and the means available are not simply a function of their subordinate station. Certain roles connote certain resistance pathways. These pathways are many and thus the cast in any given production of resisting surveillance is broad and dynamic. These roles are also level-dependent. Actors exist on a bounded level of analysis that allows them to mediate relations between other actors at surrounding levels. For example, surveyors, who operate between individual and state levels, acquire likely resistance directions from the level of analysis on which they reside.

Surveillance developments are not an ‘on’ or ‘off’ thing – they are long processes with many developmental stages. Where this has been appreciated by surveillance studies, it has been to describe which resistance methods surveilled groups can use to disrupt a surveillance plan at each stage of its development. Emanating from the position that roles condition means, we find instead that different actors are more likely to resist at certain stages than others, using their unique role based means to do so. The surveilled population, since their resistance options are limited by that role, do not and cannot resist surveillance in its earliest stages. Corporate actors, who work with government to build and implement technologies, for example, can resist earlier. At this point, technologies, too, can begin to resist. They do so primarily by being ill-equipped to fulfil a desired function or by being too expensive for mass implementation. Non-compliance and sabotage by surveilled peoples, Ball’s methods of resisting or confusing encoding technologies, these can only happen at a certain stage of the surveillance development because these actors are either uninvolved or are unequipped to resist at other stages.

Further, the resistance timeline moves down the levels of analysis. Following successful domestic implementation, a scheme with international implications then reverts to higher levels of analysis, beginning with foreign governments and then percolating down through the levels of that system. International governments can resist only once a scheme is developed and begins to be administered as a foreign policy tool, which is very late indeed. If they agree or their resistance is defeated, actors at lower levels of analysis in that country will begin to resist. Roles condition avenues and opportunities for resistance, and these, too, are limited by the volume, content and direction of interactions that vary as they gradually affect actors at increasingly micro-organisational levels. Levels of analysis also limit the discretionary power of each actor in assessing the need to resist. Surveyors, for example, can form social relationships with the surveilled that cannot be replicated at higher levels of organisation. Context and relational history-based explanations of resistance and non-resistance are much more relevant at lower levels of complexity, where individual social interactions are more numerous and self-conscious.

Yet, Diagram 1 is limited in two respects. It is informed by the above review of resistance concepts and thus overlooks certain actors and black boxes others. For instance, it is important to distinguish between local and central government, as well as different government agencies, when exploring potential resistance to government sponsored surveillance. Local government might resist plans sponsored by central authorities, and surveillance programmes sponsored by one ministry may be rejected by others (e.g., to date, no government agency besides the Home Office has agreed to use the proposed ID card). The politics of privacy are also important here. As mentioned, the UK Conservative party has made it one of its policies to abolish the NIS if and when it is voted into power. This politically motivated resistance must also be taken into consideration by scholars interested in the topic.

Second, Diagram 1 follows from the NIS case and is thus necessarily limited by it. We recognise that other cases may offer wider opportunities for resistance. Spiro (2000) documents how European countries oppose human rights violations by threatening divestment from American states in which capital punishment is administered. Similarly, a 1995 NGO campaign against French wine forced President Chirac to terminate nuclear weapons testing. These models could easily be applied to surveillance actors. Additional cases will yield additional resistance actors, techniques and opportunities. Still, we are confident that these arguments about how actor roles and developmental stages of surveillance relate to resisting surveillance can withstand these particular empirical variations. A more complex resistance nexus, including potential actors that are likely to emerge from other cases, is depicted in Diagram 2.

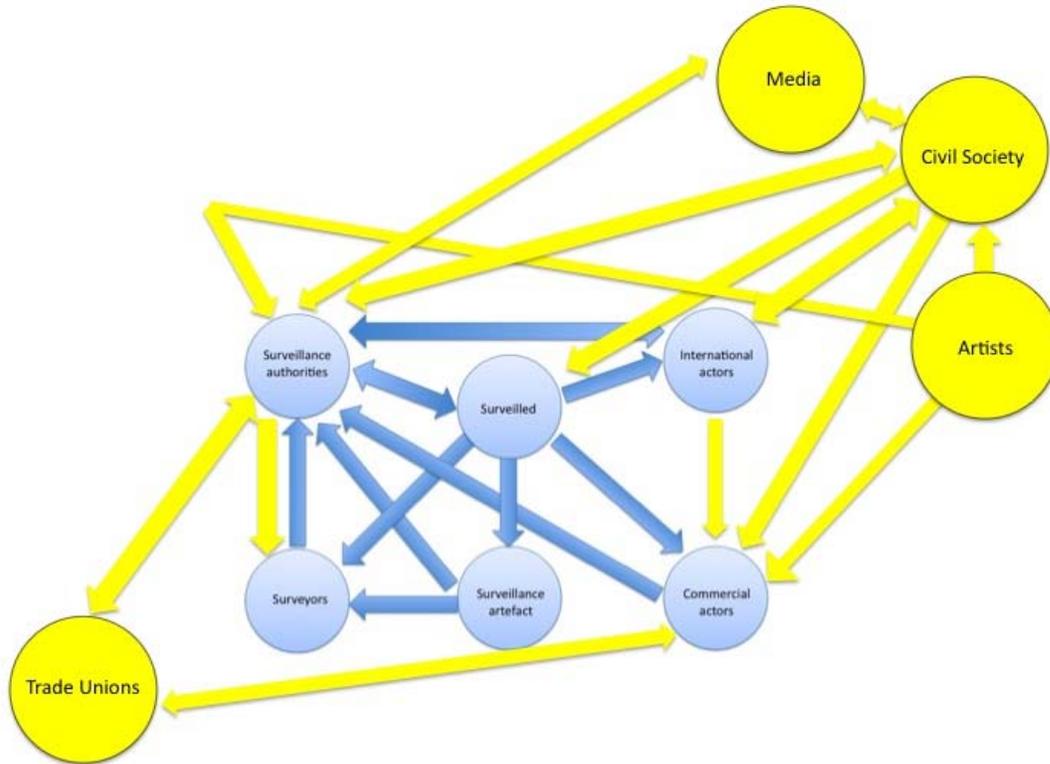


Diagram 2: Expanding the framework

Such multifarious resistance relationships may or may not be activated in a particular surveillance context, but we predict that, as with the NIS, analysis of other cases will show that resistance directions and opportunities are actor-defined, multi-directional and move down the levels of analysis over the life cycle of surveillance developments. Diagram 2 illustrates the need for future research to test this framework against an array of empirical cases and independent variables, to see just how context-dependent our portrayal of resistance to surveillance is.¹

Conclusion

As the apparatus of surveillance grows to encompass even the far reaches of modern society, resistance to it will emerge in lockstep. Banksy, the House of Lords and other influential actors from all corners and callings are making their voices heard on this issue. Others are sure to follow. Indeed, as we put the finishing touches on this paper, it has just emerged that former UK Home Secretary David Blunkett has criticised the increasing scope of government data collection - ironic, coming from the man who championed the NIS in the first place. The interplay of digital technologies and modern governance are bringing everyone under a shared surveillance umbrella, implicating all sorts of important actors whose roles must be better understood. Here we provide a first step towards this goal, though we wholeheartedly encourage other scholars to build upon our work.

In this paper we have attempted to broaden our understandings of resistance to surveillance by exploring how some of surveillance studies' 'reference disciplines' treat and conceptualise the phenomenon. We

¹ Also note that neither diagram successfully captures the life-cycle opportunities argument we introduced above. Though the developmental stage of a surveillance project is critical to understanding resistance to it at a given time and from a given corner, these diagrams do not depict the important variable of time. Again, this will necessarily vary by case.

have offered a framework for identifying the actors that potentially make up these multiplex resistance relationships, and focused on the unique directions, opportunities and available methods presented to each by its specific role in a surveillance development. Thus we have expanded on previous understandings of resistance as something that primarily happens between the surveyor and the surveilled. This is research in progress and future research will need to take additional actors into account. As we proposed above (see Diagram 2), these might include the media, NGOs and civil society², artists and trade unions. There are always surprise actors, too. For example, in the case of the NIS, the London School of Economics Identity Project released a critical report on the government's proposals early on (LSE 2005), triggering heightened public scrutiny of the scheme. These actors have been described elsewhere as 'informed advocates' (Whitley and Hosein 2008). Their informed advocacy can be interpreted as resistant in nature.

As this paper is interested in digital surveillance, future research must also consider the ways in which computer algorithms resist and can be resisted. We described how technologies resist users though the scope of this paper does not include user resistance against technologically automated surveillance functions. These algorithms form a special part of the surveillance artefact in that they are programmed with decision-making capabilities that introduce unique problems (Introna and Wood 2004; Smith, Noorman, and Martin 2008). Algorithms must be taken seriously as an agile actor, capable of resisting and being resisted. One possible strategy of resistance to algorithmic software involves feeding "junk" data into systems to throw off their calculations. Recent user resistance to the Phorm Internet advertising platform provides a nice example of this type of resistance. Yet, we need more empirical research on the effectiveness of such resistance, as algorithms can potentially be programmed to resist such user behaviours.

Future studies will also want to incorporate further theories of resistance from other disciplines that can contribute new actors and possibilities to this expanding framework. A few come to mind at present, including cultural studies (i.e., resistance by consumers of culture), labour relations (i.e., worker resistance, particularly when it focuses its energies on perceived injustices outside the workplace; union resistance), and art studies (i.e., art as social critique). Furthermore, as our exploration was based on government-sponsored surveillance, future research might explore how the roles and means of actors change when the context shifts to, say, surveillance in the workplace or at schools.

Finally, our focus has been on the *who* and the *how* of resistance to surveillance. Research that addresses the *why* would compliment our contribution very well. Exploring the *why* of resistance necessarily involves an emphasis on the context dependencies of the various actors, their roles and relationships, and shared histories.

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² See Bennett (2008) for a recent investigation on the role of privacy activists in this process.



Image source: *Mail Online* (2008)

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