

MPRA

Munich Personal RePEc Archive

Information Asymmetry and Power in a Surveillance Society

Lightfoot, Geoffrey and Wisniewski, Tomasz

University of Leicester

22 January 2014

Online at <https://mpra.ub.uni-muenchen.de/53109/>

MPRA Paper No. 53109, posted 22 Jan 2014 14:36 UTC

Information Asymmetry and Power in a Surveillance Society

Geoffrey Lightfoot

University of Leicester
School of Management
Leicester LE1 7RH, UK
Telephone: +44 116 223 1243
Email: g.lightfoot@leicester.ac.uk¹

Tomasz Piotr Wisniewski

University of Leicester
School of Management
Leicester LE1 7RH, UK
Telephone: +44 116 252 3958
Email: t.wisniewski@leicester.ac.uk

¹ Corresponding author.

Information Asymmetry and Power in a Surveillance Society

Abstract

In this paper we look at how information in societies is organized and how power relationships arise as a consequence of this organization. We argue that many of the observed information asymmetries are not happenstance and, drawing from a wealth of scholarship from the economics and finance literature, we posit that outcomes are inevitably detrimental. The paper concentrates on the techniques that foster information imbalances, such as media and propaganda, knowledge production, educational systems, legal and organizational structures, exclusive information networks, and surveillance. We conclude that in the absence of greater transparency, the deleterious effects of unequal access to information will continue and deepen.

Keywords: Information Asymmetry; Power; Surveillance; Secrecy

1. Introduction

Over recent years there has been mounting controversy regarding the issues pertaining to secrecy, surveillance and access to information in contemporary societies. However, despite its serious ramifications, this has not thus far been reflected in meaningful discussion within the organizational literature. This paper aims to pull together some of the disparate strands to illustrate how information is organised by states and corporations, and how it establishes specific sets of power relationships. Of course, any mention of power within organisation studies draws consideration of the work of Michel Foucault, who explored the relationship between power and knowledge (Foucault, 1977, 1979). Yet we find that with Foucault, although his work is incredibly helpful in exploring some aspects of surveillance and knowledge in society, there are parts of what we wish to discuss that depart from his analysis. More specifically, in places we wish to discuss how it is useful to examine 'power' as a group of institutions and mechanisms that ensure the subservience of the citizens of a given state – a definition that Foucault explicitly moves beyond in his formulation of power (Foucault, 1979: 92). In returning to a less totalising model in places, we hope to avoid leaning upon a simplistic reading of Foucault that ignores the importance of his analysis.

Foucault's conception of power is as a 'multiplicity of force relations' (1979: 92), 'the name that one attributes to a complex strategic situation in a particular society' (1979: 93). As such, it is omnipresent, 'produced from one moment to the next, at every point, or rather in every relation from one point to another.' It therefore covers the totality of discourses, institutions, social mores and practices – in each of these, in every action, power is in play. Thus, although we do not attempt to demonstrate the breadth that Foucault deploys, our own analysis is wide-ranging, encompassing many dimensions of social relations. However, in Foucault's analysis, power is 'a set of practices which could be specified and which positively produced ways of behaving and predispositions in human subjects: indeed the most pervasive power is that which makes its subjects cooperate and connive in their subjection to it' (Hoskin & Macve, 1986: 106). Foucauldian power, at its most

intense, requires acknowledgement and acquiescence by its subjects. This throws up some interesting conundrums with secrecy and surveillance: can and do the subjects recognise their position? The scope of governmental untargeted surveillance suggests that many, if not most, people may be unwilling and unknowing participants in this particular exercise of data gathering. Thus, in this paper, we turn in places to a less positive and less rarefied definition of power that enables us to examine some of the more repressive aspects of knowledge accumulation.

Intelligence gathering is rarely purposeless, particularly when garnered by the powerful. Restrictions on access to, and the contortion of, information in the public domain also serve specific purposes, not least in the shaping of public opinion:

Nothing appears more surprising [...] than the easiness with which the many are governed by the few [...]. When we enquire by what means this wonder is effected, we shall find, that, as FORCE is always on the side of the governed, the governors have nothing to support them but opinion. It is therefore, on opinion only that government is founded. (Hume, 1742/1987: 11)

This leads to the importance of considering different models of information use. In this paper, to theorise some of the more egregious developments, we use the economic concept of information asymmetry. Informational imbalances are, it seems, essential in maintaining power, yet the economics literature highlights the severe consequences of such imbalances.

The theme of restricting information is one that has sporadic, but important, interest. One notable author is Innis, who introduced the concept of ‘monopolies of knowledge’ (see, for example, Innis (2008)). Innis identified that ‘monopolies or oligopolies of knowledge have been built up in relation to the demands of force’ (2008: 32). Heyer & Crowley (2008: xxxiii) note that these structures lead to ‘overarching political authority, territorial expansion, and inequitable distribution of power and wealth.’ Innis, originally writing in 1951, also drew attention to the importance here of ‘mechanized

knowledge as a source of power' (2008: 195) – yet his insight comes several decades before the industrialization of knowledge that information technology would allow.

Furthermore, Innis (1999) elaborates on the enduring nature of restrictions, pointing out that the priesthood in ancient Egypt monopolized knowledge on flood patterns (enabling a degree of prediction that reinforced their position) and maintained this through the use of specialised scripts (hieroglyphics) impenetrable to outsiders (see also Athwal (2004)). This helped cement a monopolization of religious knowledge (Baines, 1990). In Babylonia, the power of the priesthood was similarly entrenched, leading to one king constructing a library and archives in an attempt to diminish religious authority (Innis, 2008: 99). Athwal (2004) suggests that this is even more clearly visible in the mediaeval era where the clergy not only monopolised writing and literacy but also were able to define what was legitimate thought and what was heresy. Scientific ideas, later embraced as progress, were brutally suppressed. History is, of course, littered with similar examples but here we set out to look at the present.

One key distinction between these past examples and today is the price of collecting and storing knowledge. When library documents had to be painstakingly copied by scribes, knowledge was circumscribed by the resources demanded in its capture. Contemporary technologies allow the reproduction and storage of information on an unprecedented scale. Villasenor (2011: Figure 1) illustrates how the retail hard drive cost per gigabyte has plummeted over the past three decades. This has allowed governments, their agencies, banks and major corporations to collect and keep data on our transactions, purchases and communications. This data is often shared between the power-players but rarely divulged to the public. The informational asymmetry that arises from these and other similar arrangements is what motivates this paper.

The remainder of the paper is organized as follows. Section two discusses the economic and financial consequences, and the uneven contours of the informational playing field. Section three examines the tools and techniques that are deployed to create, maintain and develop asymmetries in different

domains. Section four offers some reflections on the current environment before we turn to our conclusions in section five.

2. Economic and Financial Consequences of Information Asymmetry

There have been long-standing discussions within economics about the importance of information, particularly in cases where access falls short of ideal. Simon's (1957) attempt to resolve the disparity between the perfect information assumption of neo-classical economics and what might be seen as 'real-world' practicalities led to important insights such as 'bounded rationality' and actors 'satisficing' rather than reaching the supposedly optimal outcome. Stigler's (1961) article further detailed the problems of ascertaining the market price in the absence of pertinent information while Arrow's (1969) insight worked a similar furrow, demonstrating how the cost of information has detrimental effects in markets.

Stiglitz's Nobel Prize-winning work also developed the theme of the impossibility of perfect information in neo-classical economics but his analysis spread beyond modelling to suggest that: 'information imperfections, and asymmetries of information, are pervasive in every aspect of life and society' (Stiglitz, 2002: 463). Mostly, he emphasizes the deleterious effects of such imbalances and the limited recourses available for correction: 'Without unbiased information, the effectiveness of the check that can be provided by the citizenry is limited; without good information, the contestability of the political processes can be undermined' (p. 488). Akerlof, who shared the 2001 prize with Stiglitz, is best known for his work on information asymmetries in goods markets. This was developed from an examination of how poor quality cars ('lemons') were quickly returned to the forecourt, driving down the prices of all nearly-new vehicles. In such cases where the seller knows more about the product than the buyer, certain market failures and imperfections inevitably emerge.

As Stiglitz pointed out, problems of information imbalance extend both through applied economics and beyond. It would be outside the scope of this paper to detail all of the areas where the concept

has been applied but examples can be seen in labour market studies (see, for instance, Chang & Wang, 1996), agricultural economics (Hobbs & Plunkett, 1999), economic psychology (van Dijk & Grodzka, 1992), public finance (Parker & Hartley, 2003), or economic behaviour and organization (Straub & Murnighan, 1995). Running persistently through this literature is the finding that information asymmetry has malignant effects on markets and society in general.

The literature on corporate policies and environment has involved discussion around several areas and we highlight some briefly here. Francis *et al.* (2005) demonstrate that not only does increased disclosure of financial information decrease the costs of both debt and equity finance but that where there is a need for greater external financing there is a commensurate increase in the level of information shared. Glennerster and Shin (2008) show similar forces in play when they reveal that governments can effectively lower the cost of their debt by providing more accurate macroeconomic information more frequently. Francis *et al.* (2009) show that corporate and institutional transparency run hand-in-hand with delivering more efficient resource allocation and higher growth rates. Li and Zhao (2008) suggest that firms that have the highest information asymmetries are the ones that are least likely to pay, or increase, dividends. Indeed, one of the major theories that attempts to explain how firms organise their financing – the pecking order theory of Myers and Majluf (Myers, 1984; Myers & Majluf, 1984) – rests on the assumption that information asymmetry is the key, if not the only, driver (Fama & French, 2005).

There is another stream of literature in finance which deals with trades of people with preferential access to information – insiders. According to the legal definition, insiders in the US are defined as ‘executives, top executives, members of the board of directors, and large shareholders who hold more than 10% of any equity class of securities’ (Seyhun, 2000: 68). Although these individuals are allowed to trade in principle, they are prohibited from dealing when they are in possession of material, non-public information. All their trades have to be reported to the relevant authorities (the SEC in the US) and this accumulated data can and has been used for research purposes. Using this

resource (which, of course, does not necessarily capture illegal, hidden or disguised, trades) Seyhun (p71.) documented that even here those privy to the most valuable information are able to generate the largest market-beating trading profits on their reported transactions.

If a market-maker (who is obliged to offer both buyers and sellers a price) suspects that insiders are active, they will protect themselves against trading losses by increasing the bid-ask spread (the difference between what they will sell a security for, and what they will buy it for). Since the bid-ask spread represents transaction costs, any rise diminishes the numbers willing to trade. At its extreme, as Glosten & Migrom (1985: 84) point out, there is, 'the theoretical possibility that markets might close down entirely, with the bid price being set so low and the ask price so high as to discourage any trade. This problem is identical to the famous lemons problem of Akerlof (1970), in which adverse selection can destroy the market'. The consequences of insider trading are even more pervasive if unchecked: Bhattacharya & Daouk (2002) demonstrate that companies in countries that do not enforce insider trading regulations face a higher cost of capital. Similarly, Manove (1989) illustrates how insider trading reduces corporate investment and returns to outside shareholders.

Manne (1966) attempted to develop a contrasting perspective in arguing that insider trading delivers a benefit in the form of more efficient prices as their deals will help move the market towards a more accurate level. A number of authors have discounted this notion: Fishman & Hagerty (1992) argue that the presence of insiders can discourage other traders from seeking and acquiring pertinent information as they are bound to lose in a trade against insiders regardless of their effort. Bushman *et al.* (2005) and Gilbert *et al.* (2006) show that this discouragement also extends to market analysts, who are supposed to collect and evaluate information on behalf of clients. Wisniewski (2004) further argues that the net effect of insiders on price efficiency is likely to be negligible as any positive benefit is offset by the reluctance of outsiders to engage in information processing.

What comes through from this literature is a conclusive argument from within economics and finance that information asymmetry is insidious for both a variety of specific actors and for broader society. If there are any benefits, they will be to select minorities, and will be considerably offset by the costs to the many. More damagingly, as Stiglitz (2002) pointed out, such imbalances cannot, by their very nature, be countered by an informed citizenry. It is our contention that this unevenness is by no means accidental and in the next section we examine how it arises.

3. Tools and Techniques for Maintaining Information Asymmetry

In this section we provide an overview of what constitutes, in our opinion, the principal methods by which information asymmetry is created within societies. Firstly, we look at how the media, particularly through the promulgation of propaganda, skews the information available. When we consider knowledge production and transmission in section 3.2, we pay particular attention to the design of educational systems and its consequences. The following section examines legal and organizational settings, exploring how they promote unequal distribution of knowledge. In section 3.4, we continue this argument by looking at specific social structures within which private information is exchanged. Finally, we turn to issues related to mass surveillance that provides unparalleled levels of information access to political leaders and captains of industry.

3.1 Media and Propaganda

One way in which informational advantage can be created and secured is through control and use of the media apparatus. One extreme is that of totalitarian states – where contorting information, propaganda, disinformation campaigns and selective disclosure are the daily staples of political life – the underlying principle behind this being that a lie repeated often enough becomes the truth. In dictatorships and communist states, governments have absolute control over media outlets and institute various forms of censorship to ensure that only appropriate information is circulated. In such states the populace has only limited (often illegal) access to alternative voices. Currently, the

most visibly censorious society is North Korea but its tactics are but a reflection of those of Eastern Europe before the fall of communism. Even developing economies, such as China, remain suspicious of the possibility of freely sharing information via media such as the Internet and continue to monitor usage and suppress access to particular sites (see for example Dann & Haddow, 2008). The tactics used by such states are fairly unsubtle and require little elaboration – it is the more diffuse systems in developed nations that we would like to turn our attention to.

Herman and Chomsky (1994) propound a ‘Propaganda Model’ which describes general tendencies in the US media. Since freedom of speech, at least nominally, prevents the use of some of the methods deployed within dictatorships, the control manifests itself in more subtle ways. Herman and Chomsky argue that information presented to the public has passed through five distinct filters. Firstly, major media outlets require a government licence and, even more importantly, huge (and ongoing) capital investments. Consequently, as Herman and Chomsky argue, US media corporations are controlled either by wealthy families and/or large corporations, acting in their interest. Mirowski (2013) takes this further, suggesting that these corporations and individuals are willing collaborators with a specific set of political and commercial agendas. The most egregious example of where media power and politics intersect is probably that of Berlusconi’s Italy. Largely driven by his near-monopoly of national television and media, he was elected as Prime Minister four times (Statham, 1996). Not only was he effectively free from sustained criticism but he was able to vigorously defend his perspective.

The second filter for Herman and Chomsky is related to the economic power of advertising. Since media outlets are so dependent upon advertising revenue, they are driven towards attracting specific customer demographics and try to avoid antagonising the advertisers – typically large corporations. The third filter also links economics and information – governments and corporations spend a vast amount of resources in developing ready-to-use media stories and many journalists are reliant upon them to provide their copy. Since questioning the veracity of the source may result in

future supplies being curtailed, it is easier to simply repeat the supplied version. Fourthly, media organizations seek to minimise 'flak' – the risk of lawsuits, petitions, audits or coordinated attacks from powerful interest groups. Finally, in the US context, there is a strong ideological undercurrent of 'anti-communism', where communism is taken to be anything that runs counter to the needs of large corporations.

The link between power and the type of information disseminated by the media has been oft remarked. Herman and Chomsky (1994: 32) suggest that, 'propaganda campaigns have been closely attuned to elite interests' including political and commercial developments, and the diversion of attention from increasingly skewed distribution of income. Heyer and Crowley (2008: xxxv) note that Innis identified that, 'The properties of the dominant medium, along with the pre-existing institutional structure, facilitate knowledge, and therefore power, being localised in such a way that it serves particular interests and is always beyond access for a large segment of the population.' Bennet (1988: 178-179) is of similar opinion: 'Leaders have usurped enormous amounts of political power and reduced popular control over the political system by using the media to create support, compliance and just plain confusion among the public.' Mirowski (2013) even coins a word to explain this – agnatology – whereby competing arguments are deliberately sown in order to ensure that the population is endlessly confused and thereby easily manipulated.

Alternative sources of information are available, but are often excluded from mainstream discourses. Even where they threaten to break through (such as with the Guardian's revelations arising from the Snowden leaks), there is a relentless campaign to discredit both source and outlet in order to re-establish the status quo. These days, the trade of the investigative journalist is ever more dangerous – the Committee to Protect Journalists notes that over 1,000 have been killed since 1992². But, as Herman and Chomsky's analysis would suggest, the investigative journalist is also

² Please see <http://cpj.org/killed/>, last consulted 10 December 2013.

threatened from within as many media outlets now no longer desire the services of individuals that might destabilise corporate financial and political interests.

3.2 Knowledge Production and Transmission

Academia has not been immune to pressures from corporate and financial elites. The Humboldt University in Berlin, with its emphasis on the production of knowledge as a benefit to society as a whole, may well have been an impossible ideal but, as Readings (1996) makes clear, even the pragmatic further education system that existed up until the 1980s has increasingly been suborned to serve corporate demands. The national funding bodies are charged with demonstrating the relevance of university research to economic well-being: consequently studies are geared towards such aims. Other funding institutions are even more clearly tied to the corporate world, with a strong expectation on appropriate outcomes. Since receiving research funding is a pre-requisite of advancement within academia, the researchers are forced to comply with canons imposed from without. Revolutionaries might argue that, 'the domination of the masses by elites is rooted [in ...] the means of knowledge production' (Rahman, 1991: 14).

What is 'knowledge' is frequently contested. In the UK, Michael Gove has kick-started a vigorous debate as to what should constitute the history syllabus (Ferguson, 2013). Historical revisionism is frequently applied in a political context. In his seminal novel, *Nineteen Eighty-Four*, Orwell illustrates this point quite vividly as he picks up on practices already prevalent at the time of his writing. He describes a Party that was continuously rewriting history to make it fit seamlessly with the current line. Attempts at indoctrination continue today: the collapse of the USSR and the emergence of a new Russia demanded a complete rewrite of the history textbooks to reflect the change in ideology and identity (Zajda & Zajda, 2003).

Syllabus issues aside, the education system is part of the mechanism for separating out and maintaining an elite in many Western countries. Many of the top schools in the US and the UK charge tuition fees that comfortably exceed the net average salary, ensuring that social exclusion

(and hence information asymmetry) is fortified. The dominance of Etonians, such as Prime Minister David Cameron, Chancellor of the Exchequer George Osborne and Mayor of London Boris Johnson, in contemporary British politics is well-remarked but the permeation of ex-pupils from elite schools goes much further. Perkin (1978) identifies their historical prevalence in ministerial positions in Conservative administrations, chairmanships of large companies, the judiciary, vice-chancellorships, BBC governorships and newspaper editorships. This is repeated in the US where Useem & Miller (1975: 115) contend that, 'the stratification of educational opportunities in higher education is in large part a direct product of upper class dominance... the elite's privileged access to higher education shapes the fortunes of the other classes.' In their literature review, they conclude that about one third of executives and directors of major corporations came from the top three American schools (Harvard, Princeton and Yale). (A recent survey by US News for the CEOs of the Fortune 100 companies produced a similar statistic (Smith-Barrow, 2013)). In a complementary study, Dye and Pickering (1974) revealed that 55 per cent of corporate leaders and 44 per cent of government leaders were Ivy-League alumni. The elites are able to ensure that they maintain their grasp on the levers of power through a variety of techniques, not least the Ivy-League tradition of legacy admission where schools admit between 10 and 15 per cent of freshmen through the criteria of familial attendance at the same institution (*The Economist*, 2004). Taken together, these statistics indicate that the education system is a key component in creating and maintaining power and informational imbalances within societies.

3.3 Legal and Organizational Structures

Organizations deliberately set up structures to promote and define information asymmetry. One of the most common and readily acknowledged is the system of classifying documents. Both the US and the UK have classifications such as confidential, secret and top secret (with additional country-specific categories and subdivisions). Higher classifications demand higher level of clearance for those granted access with a consequent increase in rigor in the checks needed for access. The system of clearance, supported by codes of conduct, is designed so the only those 'authorized' are

able to see relevant documents (Desouza and Vanapolli, 2005: 91). Yet even the highest level of clearance does not mean that the holder has access to all information – rather, only those deemed to ‘need-to-know’ will be privy, leading to compartmentalization of information. This does have some benefits – Desouza and Vanapolli (2005: 92) argue that it manages workload and protects ‘knowledge artefacts’ both in that it focuses security and, in cases of information leakage, the damage is limited. However, it also severely limits the ability of individuals to fully grasp the activities of the organization, leading to duplication of work, ineffective coordination of collective endeavour, and barriers to information flow.

The security and military services are but one example (albeit one that Desouza and Vanapolli (2005) suggest has lessons for other organizations). Following deregulation of financial markets, the concept of compartmentalization became operationalized in corporations through the erection of Chinese walls. The walls were intended to keep information within departments, thereby avoiding conflicts of interest. Thus, for example, since a bank’s merger and acquisition dealings would be valuable knowledge for traders dealing securities, a Chinese wall would need to be erected between the two divisions. Similarly, this partitioning arrangement would allow a large legal firm to represent two clients with conflicting interests. Unfortunately, as Seyhun (2008) makes clear, such ‘prophylactics’ are decidedly porous. The failure of Chinese walls means that although information asymmetry within the organisation may decrease, there is a reinforcement of information asymmetries between that organization and its clients and other market players.

Within organizations, counter-intelligence – the seeking out and reprimanding those who steal or misuse knowledge – is also important. Typically, as Desouza and Vanapolli (2005: 89) note, this may require another layer of secrecy as those investigated will frequently not know that they are under scrutiny. But employees will know that they could be under investigation at any time and, as Desouza and Vanapolli indicate, this is the principal value of counter-intelligence. Echoing Foucault’s (1979) use of the concept of the panopticon (which we discuss later), compliance is induced through

the possibility of surveillance. Clearly, popular media depictions (perhaps most notably in le Carré's (1974) *Tinker, Tailor, Soldier, Spy* and its movie adaptation) have attuned us to such operations within the security services, but departments fulfilling a similar function exist in many other organizations.

More widespread use of informational asymmetries can be seen within the labour market. The gender gap in remuneration has been widely reported (Hausman *et al.* 2008; Arulampalam *et al.* 2007; O'Neill, 2003) but one key factor that has been instrumental in its continuance has been the purposive hiding of the discrimination. This works through the effectively banning through contractual obligations, or strongly discouraging, workers from discussing their compensation (Kulow, 2013). Thus women, whose wages consistently remain below those of their male counterparts, are unaware that they *personally* are being discriminated against due to a lack of comparators. Kulow (2013: 427) argues that the only way of eradicating this information asymmetry is to introduce mandatory wage disclosure laws since in Norway, where this was put in place, the gender wage gap narrowed markedly.

Pay is not the only form of workplace discrimination that is entrenched through information asymmetry. Goldin and Rouse (2000) report on how recruitment practices for professional musicians changed from open audition to one where candidates performed behind a screen that rendered them hidden from the recruiting panel. Goldin and Rouse argue that data emerging from their study show that sex-biased hiring was reduced substantially. We contend that this demonstrates that where an information imbalance was reduced (in that in subsequent years, the jury had less information about the trialists, and especially about their gender), then the outcome was fairer. These illustrations have wider implications: where there are asymmetries, then there can often be results that, as a society, we may find undesirable. The solutions may come from either greater transparency, so that everyone has access to the relevant information, or from restricting the power of organizations to create a one-sided game.

Failure to oversee organizations that routinely deal in secrecy also has serious ramifications. The Pentagon's 'auditors admit the military cannot account for 25 percent of what it spends' (Sirgany, 2009) while Reuters claim that within the US Defense Finance and Accounting Services (DFAS) 'fudging the accounts with false entries is standard operating procedure' (Paltrow, 2013). Compartmentalisation and institutional secrecy undoubtedly are at least partly to blame. When financial institutions are similarly clandestine, wrongdoing seems inevitable. The Institute for the Works of Religion (more commonly known as the Vatican Bank) operated without publishing its financial statements for 125 years (BBC, 2013), finally yielding to international pressure in 2013. In 2012, the Council of Europe called upon the Vatican to improve its systems, suggesting that it had not got sufficiently robust structures in place to counter money-laundering and the financing of terrorism (Reider-Gordon & Butler, 2013: 403). The bank was already infamous for a series of scandals including the enigmatic failure of Banco Ambrosiano or the connection with fraudster, murderer and Mafia associate Michele Sindona (Willey, 2013). These are but a few examples, albeit perhaps the most well-known, of where secretive institutions are able to avoid public accountability. There is a challenge that runs throughout academia and public polity as to how oversight over such institutions may be managed when the organizations themselves operate in a clandestine way.

3.4 Exclusive Information Networks

Brown and Lightfoot (2002) discuss how email networks are used in an organization. One of the key features that they report is how email correspondence is monitored by senior managers, delivering a level of accountability of junior staff. But one of the most treasured powers retained by the senior managers was their ability to step outside this documented domain: they were able to have face-to-face meetings with their peers where they were able to make the crucial decisions based upon wider, more informal levels of information. Such freedom was denied junior staff, who would always be dragged back into the territory of surveillance whenever they attempted to breach the boundaries. Of course, such recall was through 'soft power' – a simple request for a recap of a discussion, say – but the effect was always to ensure that one group was always rendered visible

within the panopticon, while the other could choose when to make an appearance. This informal network also was able to function as a system for verifying the veracity of claims made and of the status of individuals. This ability to form networks between those sharing a common interest, and move outside the space occupied by the general public is, of course, normal. What this example demonstrates is that when that network is comprised of elites, then we have a refraction of the information asymmetries already in play. Thus, for example, gentleman's clubs, Masonic lodges, fraternal societies, sororities and professional networks do both simply reflect like-minded groups of people coming together but also contain the possibility of sharing information outside the public purview.

Such networks can be seen to exist within most, if not all, hierarchical organisations and societies. Sometimes these may become more formalised, while others remain resolutely informal. An example of the former might be the activities of The Consulting Association in the UK³, a secretive company that maintained an illegal blacklist of construction workers perceived as trouble-makers (such as trade-unionists and those who had raised health and safety concerns). This list could, and was, consulted by many of the leading construction firms in the UK.

Other networks seem to have less formal structure but are both more insidious and more pervasive. Useem (1980: 54-5) points out the prevalence of interlocking directorships among corporations, that 'draw many of the members of the capitalist class into a single national network.' This is reinforced by co-presence on '[b]oards of trustees of universities, hospitals, art organizations and other nonprofit institutions.' Some of the networks that bind are established earlier. Useem illustrates the importance of bonds formed through school and university but Cohen *et al.* (2008) drive home the monetary significance of these links. They find that mutual fund managers who attended the same degree at the same university simultaneously with a senior officer (CEO, CFO or chairman) of a listed company are able to deliver substantial, market-beating returns on these companies. Within the

³ See, for example <http://www.bbc.co.uk/news/business-24470436>, last consulted 12th November 2013.

manager's portfolios, the returns on the firms with which they had a connection exceeded the returns on non-connected firms by 7.8 per cent per annum. Cohen *et al.* show that fund managers apparently invest in these stocks more aggressively and commit larger amounts of capital. Although Cohen *et al.* do not make such a claim, one of the implied implications is that these networks are a conduit for material, non-public information. According to Fama's (1970) Efficient Market Hypothesis it should be impossible for an ordinary investor to systematically beat the market. Cohen *et al.* demonstrate that the same laws do not apply to the well-connected⁴.

Other networks are established and Useem (pp. 57-64) also highlights the importance of kinship and inheritance to maintain cohesion, continuity and exclusivity. '[T]he bonds of kinship within the corporate elite continue to facilitate the mobilization, coordination, and control of massive and otherwise unrelated corporate resources [while] [u]nless one is born into a corporate family (and, incidentally, born male), the prospects for acquiring access to the American corporate elite are statistically remote' (Useem pp. 58 and 64).

One particular type of networks that is of interest from an information point-of-view is that formed by secret societies. Typically, such societies have a strong hierarchical structure with higher levels granted deeper access to the society's secrets. Joining these organizations normally requires making a vow of secrecy, with harsh penalties for breaking it. This may culminate in potential death threats - Herdt (1990: 362) gives the example where this is the case with the secret collective of the Mehinaku of Central Brazil and that of the organization surrounding the protection of secret instruments in Melanesia. Secret orders also stress the self-discipline in keeping secrets – Simmel (1906) argues that the collective in the Molucca Islands demanded that initiates were not to 'exchange a word on any subject with anybody, even in his own family' for weeks while the Pythagoreans 'prescribed silence for the novice during a number of years' (pp. 473-475).

⁴ In fact, the findings of Cohen *et al.* (2008) imply a violation of the Efficient Market Hypothesis in its strong form.

Herdt (p363) further argues that, 'we must not underestimate the use of secrecy to create stratification'. Of course, the precise level of this resultant stratification is difficult to ascertain since secret societies, by their very nature, do not supply information on their members, activities and proceedings. Nevertheless, there is a limited amount of public information that indicates that elites are heavily involved in these clandestine organisations. Jolicoeur and Knowles (1978: 7) point out that many US Presidents, Senators and Congressmen were members of Masonic lodges. In the UK, Prince Michael of Kent is the Grand Master of the Grand Lodge of Mark Master Masons. The Italian Propaganda Due (P2) has received perhaps the most attention, including an investigation by a parliamentary commission. Herman and Chomsky talk about 'the penetration of this massive neo-Fascist conspiracy into the military establishment, secret services, press and judiciary.' (1994: 371). Rosenthal (1996: 167) points out that Berlusconi and many of his ministers were members and that the parliamentary investigation revealed that his media empire was financed by Banco Ambrosiano, which collapsed in 1982 following the murder of Roberto Calvi, the fugitive president of the bank. The Venerable Master of P2 (equivalent to the Worshipful Master in Britain) Licio Gelli was nominated for a Nobel Prize in Literature in 1996 (House, 1996). What all of these examples demonstrate is that such organizations have members drawn from the highest strata of society.

3.5 Surveillance and Mass Surveillance

Much contemporary analysis of surveillance has, unsurprisingly, drawn upon Foucault's (1977) *Discipline and Punish: The Birth of the Prison*. Foucault draws upon Bentham's (1787) putative model of an ideal prison: the panopticon. It featured a central tower, occupied by the wardens, which was impossible for the prisoners to see into. By contrast, the prisoners inhabited largely open cells, arraigned in a ring around the tower, and were always potentially visible by any warder within the tower. The prisoners, recognising that they were subject to intermittent (but potentially omnipresent) surveillance, assume responsibility for their own control, accepting and enacting discipline on and of themselves. Lyon (2007: 15), in his literature review suggests that surveillance 'usually involves relations of power in which watchers are privileged'. This relationship of power

extends beyond physical observation and is manifest within information asymmetry. The data that is collected by surveillance is typically only accessible by government agencies and corporations and this imbalance determines the possession of power.

Most of the increased surveillance carries with it the promise of benefits for those being observed. In the case of security service monitoring, it is in the cause of national security and personal safety. But even more mundane applications are resulting in the collection of considerable amounts of data. The putative move to a 'cashless society' is sold on the basis of reducing crime and the 'black' economy. Stores would not have to risk holding large amounts of cash while consumers would be freed from the burden of carrying cash and shown the promise of being able to have a complete record of all their expenditure. Central banks would no longer have to continually replenish the coins and notes in circulation (for further discussion on the claimed benefits see Polasik *et al.* (2012)). The trend towards the 'cashless society' is clearly visible – Garcia-Swartz *et al.* (2006: 179) note that the use of credit and debit cards has increased relative to cash in recent years.

However, the consumer's complete record of their transactions is also held by the bank. And, as we have seen in the case of SWIFT (Bilefsky, 2006), where the Belgian consortium turned over massive amounts of 'confidential transaction information to the Central Intelligence Agency and other American agencies' in contravention of European privacy legislation, such information does not always stay private. Even the supposedly last bastion of privacy in finance – Swiss banking – has fallen. In 2010, the Swiss Parliament agreed to allow UBS to pass details of thousands of accounts held by Americans to the IRS (Mollenkamp *et al.* 2010, Delaloy *et al.* 2012). The greater the specifics of the transactions stored, the greater the potential for surveillance and the 'cashless society' is one in which all economic activities of any individual can be tracked by the authorities.

Banking data is but a tiny fraction of the information that is being monitored. The vast amount of online communication data is routinely stored by Internet Service Providers (ISPs) and searched by the authorities. The EC Data Retention Directive of 2009 requires ISPs to hold all communication

data⁵ for a period of one year (Richards, 2013: 1941; Ward & Home, 2012: 1). Lyon (2007: 42-43) explores how this information is scrutinised through the use of the FBI's Carnivore system that 'sniffs' email messages and the international (and even more powerful) 'Echelon' information-gathering system. Further notice of the degree of surveillance was given by Snowden's revelations of the scope of the NSA's PRISM data-mining program – which also examined the content of electronic communications. One possible solution to such intrusion might initially appear to be encryption of correspondence – but that carries its own risk. Not only do 'sniffer' programs deliberately target such communications, but its use brings further attention from the security services. One colleague from the UK reports that, following encryption of his emails, he was visited by a policeman who, despite not proffering a warrant, asked him to decrypt the communications for the officer's inspection.

Yet even the Internet that we use in our everyday lives is likely to soon be overtaken in size by the Internet of Things (Ashton, 2009; Atzori *et al.* 2010). It uses Radio Frequency Identification (RFID) technology to capture and track the whereabouts of manufactured objects with the ultimate ideal of tracking 'everything' world-wide within a single global network based upon the existing Internet (Albrecht & McIntyre, 2005: 24-25). Effectively, each object has its own unique identity (or website) and can communicate with manufacturers, distributors, suppliers and even with other objects. RFID technology further replaces and intensifies that of barcodes (in that the products no longer need to be presented for scanning) and produces colossal amounts of data – even by 2006 Walmart's centralized database stored more than 500 terabytes of information (Petrovic & Hamilton, 2006, p. 133); double that of the Internet at the time (Hays, 2004). The data has revolutionised Walmart's supply chain, making it the most efficient of US supermarkets (Gilchrist *et al.*, 2006) but it also has

⁵ 'Communications data is information about a communication, not the communication itself. Communication data is NOT the content of any communication - the text of an email, or conversation on a telephone. Communications data includes the time and duration of the communication, the telephone number or email address which has been contacted and sometimes the location of the originator of the communication' (Ward & Home, 2012: 7). Email is the focus of our discussion here but it is worthy of note that this directive also covers telephone communications and this is mirrored in the US by the NSA's MAINWAY program which, it is estimated, holds data on telephone calls that runs into the trillions.

created, through combining with data from loyalty cards, considerable knowledge about customers which can be used for commercial purposes or shared with the authorities.

The technology has spread beyond inanimate things. Micro-chipping of pets has become well-established and recently (2012) the US Food and Drug Administration (FDA) approved the use of RFID for the tracking of livestock, despite widespread concerns about the carcinogenic properties of the chips in animals (see Blanchard *et al.* 1999; Elcock *et al.* 2001; and Calvez *et al.* 2006 for research on laboratory rodents, Carminato *et al.* 2011 for cats, and Vasellari *et al.* 2006 for dogs). In 2004, the FDA also approved specific microtransponder systems as 'medical devices' suitable (and permissible) for implantation in humans (Foster & Jaeger, 2008: 45). The technology potentially allows the tracking of the movement of those implanted, together with a record of the similarly chipped 'things' with which they interact. Unsurprisingly, such moves sparked dissent. Legislatures in California, Wisconsin and North Dakota created laws that explicitly prevented forced or coerced human implantation (Albrecht, 2007) while some religious groups have seen the technology as imprinting 'the mark of the beast'. More commonly, RFID chips are worn and a burgeoning market has been created and aggressively extended (Albrecht & McIntyre, 2005). The most visible implementation is perhaps that of tagging schoolchildren to monitor attendance (upon which, in many American states, the school's income is dependent) (Lyon, 2007: 17; Kravets, 2012). Here, too, there has been considerable resistance with lawsuits launched (again including ones referring to 'the mark of the beast'). Further technological advances suggest that surveillance will not even require such awareness of the monitoring equipment: 'smart dust' seemingly offers the potential of embedding microscopic sensors everywhere, creating and distributing information about people and things (Lohr, 2010; Kahn *et al.* 1999).

Mobile phones offer a rich source of surveillance potential. European legislation require mobile phone operators to keep records of all communications for one year while in the US the MAINWAY is the 'largest database ever assembled in the world' with the aim to capture details 'of every call ever

made' (Cauley, 2006).⁶ Smartphones also carry GPS transponders which can be used to track the position of the phone (and by implication, its owner). Governments and companies are alive to this possibility – the Beijing authorities have considered plans for a phone tracking system that would cover 17 million people (Lewis, 2011), enabling them to crush protests. But even this seems dwarfed by the recent revelations that the NSA captures 200 million SMS texts a day (Ball, 2014).

Similarly, CCTV has become ubiquitous ostensibly with a promise of reducing public disorder. Recent estimates by the British Security Industry Association (2013) put the number in the UK at between 4 and 5.9 million – or, at the high end, one camera for every eleven people (Barrett, 2013). Cameras can be integrated with facial recognition technology to identify subjects. Tesco is planning to use such a combination to target consumers with relevant advertising at petrol stations (Warman, 2013) – while governmental authorities (such as the US Department of Homeland Security) have been testing its efficiency in public places (DHS, 2012). The pervasiveness of cameras scanning public spaces seems to be on the cusp of extension to private, personal space. The X-Box One caused a furore when it was announced that its attached camera would be 'always on, always watching' (Andrews, 2013). Yet there is little attention paid to the fact that all laptops and PCs with webcams are also always potentially on. The *Washington Post* reports that one of the techniques used by the FBI to monitor suspects is the remote activation of the computer camera, while disguising its use by not illuminating the camera-on light (Timberg & Nakashima, 2013).

The latest Samsung Smart TV range comes with camera, Internet connection, face recognition, voice and gesture control. Although at the moment it is unlikely that anyone *is* watching, Orwell's (1949/1984) prediction is eerily prescient:

The telescreen received and transmitted simultaneously. Any sound Winston made, above the level of a very low whisper, would be picked up by it; moreover, so long as he

⁶ As we write this paper, there is a continuing legal battle as to the legitimacy of the government's collection of telephone data. A federal judge in December 2013 ruled that the NSA's collection and storage of phone data was 'almost certainly unconstitutional', although the government is appealing the decision (Nakashima & Marimow, 2013; Horwitz, 2014).

remained within the field of vision which the metal plaque commanded, he could be seen as well as heard. There was of course no way of knowing whether you were being watched at any given moment. How often, or on what system, the Thought Police plugged in on any individual wire was guesswork. It was even conceivable that they watched everybody all the time. But at any rate they could plug in your wire whenever they wanted to. You had to live – did live, from habit that became instinct – in the assumption that every sound you made was overheard, and, except in darkness, every movement scrutinized. (p.158).

We shall return to the Foucauldian implications later. But for now, we would like to point the interested reader to the multiplicity of other intrusive technologies that we have skipped over for reasons of space. These might include the ability to be tracked while using public transport through the use of smart tickets such as OysterCard, plans to install transponders in all manufactured vehicles, old-fashioned phone hacking and tapping, the monitoring of refuse in domestic rubbish bins, the use of commercial waste bins to provide Wi-Fi hotspots (that also track the movement of subscribers) (Cookson, 2013) , and, perhaps most important of all, DNA databases. In the UK, in 2005, this was estimated to hold biometric data on 3.45 million individuals (Lyon, 2007: 113).

The obvious question that emerges when considering these technologies is *quis custodiet ipsos custodes?* The recent consternation sparked by the Snowden revelations was, in part, that the answer was unclear. Even mature democracies, with centuries of spying under their belts, seemed to be incapable of working out what the bounds of surveillance of their citizens could, or should, be. Nor indeed, what structures should be in place to oversee security operatives and the information stored, not least when lines of accountability seemed to have been thoroughly shattered as private companies have been increasingly employed to collect, analyze and keep the data. There has been disquiet about the seemingly continuous new breaches of hitherto sacrosanct areas of privacy, both from a range of single issue groups, such as Consumers Against Supermarket Privacy Invasion and

Numbering (Caspian), to broader privacy campaigners such as Privacy International and the Electronic Privacy Information Centre, and many politicians of different stripes. However, the encroachments are on so many fronts, and the opposition so fragmented, that although there may be the occasional small victory, there appears little prospect of reversing the general trend.

4. Related Issues

Richards (2013: 1935) argues that 'surveillance is harmful because it can chill the exercise of our civil liberties' as well as stifle creativity and restrain intellectual activities. Evidence from where the extent of surveillance has been unmasked (such as Libya under Gadhafi, Syria, China, Burma and Iran – see Villasenor, 2011) shows the potential for intrusive data collection. Villasenor documents how authoritarian governments are able to monitor Internet usage, track mobile telephones and record conversations, access and read emails. He demonstrates that much of the equipment for such surveillance is sourced from developed countries and the latter revelations stemming from Snowden where such technologies were deployed against citizens in the West would have come as no surprise.

The information gathered delivers the holders increased power to persuade. This might, at first *blanche*, appear harmless or even relatively benign, as in the case of targeted marketing or crime-fighting. But the same technologies are just as easily deployed to serve state coercion, blackmail or discrimination, as Richards (2013) warns. But the two are not as distinct as first seems: as far back as the 1940s, extant 'big' data in the form of the 'census records by the American, Canadian, and German governments during the Second World War [were used] to identify citizens to relocate to the Japanese internment camps in North America and the concentration camps in Europe.' Richards (2013: 1956) (see also Lyon, 2007: 30). Even targeted marketing seems to creep beyond the original, beneficial remit: consumers, once linked to their spending patterns and implied wealth (via store cards and Internet activity), are graded by a system of 'social sorting' and selected. The careful identification of 'appropriate' target groups means that some are offered discounts and benefits

while others are steered in the opposite direction. Perhaps the most explicit example is in banks – where the affluent are offered funds with the lowest fees and often the highest returns, while those without substantial wealth get more expensive, poorer performing products.

At the moment it is the common person that is being surveilled, yet their transgressions pale into comparison with those of elites. Brzezinski (2010: 42) suggests that, ‘during the twentieth century, no less than 167,000,000 lives – and quite possibly in excess of 175,000,000 – were deliberately extinguished through politically motivated carnage. [...] more than the total killed in *all* previous wars, civil conflicts, and religious persecutions throughout human history.’ Rummel (1997) made similar estimates – his latest calculation available on his website⁷ puts the total at 262,000,000.

Although obviously (and Rummel stresses this point), the bulk of these atrocities were delivered by authoritarian regimes, the underlying point is that governments cannot be wholeheartedly trusted to look after their citizens. In economic terms, the pay-off to the common man from war-mongering is invariably non-positive and it is the elites (politicians and military-industrial complexes) that benefit. Presidents and prime ministers benefit from increased personal prerogative and approval ratings (see, for example, the patriotic ‘Rally ‘Round the Flag Effect’ in Chapman & Reiter (2004)) while the defence industry receives lucrative contracts. Yet it is not the omniscient politicians that are under surveillance.

Sometimes the screen is lifted and we get an inkling of the extent to which we are being surveyed. Whistle-blowers, such as Assange, Snowden or Manning, have brought into the public domain evidence of how government intelligence agencies operate. The reaction to such disclosure has been mixed, and the discussion about surveillance is often (perhaps deliberately) drowned in angry debate about the motivations and actions of the whistle-blowers compared to the necessity of keeping the state safe. This effect has often been remarked upon: Zimbardo (2007: 227) argues that ‘alleged threats to national security have frightened citizens into willingly sacrificing their basic civil

⁷ See also <http://www.hawaii.edu/powerkills/NOTE5.HTM>, last consulted 12 November 2013

rights to gain an illusion of security'. Lyon and Heggarty (2012) posit that this took on a new intensity following 9/11, with greater surveillance in the name of security overriding the principle of the rule of law. Lyon (2007: 29) sees this as potentially a new, permanent state: 'It is hard to see when a 'war on terror' might end [...] War means crisis and crisis means special measures.' Since there is no 'visible' enemy that can be vanquished, there is no means of 'winning' the war, and thus the special measures continue indefinitely.

The notorious Stanford prison experiments demonstrated how, in less than a week, students could wholeheartedly adopt roles of prisoners and guards, and take it to almost mediaeval levels of punishment (Zimbardo, 2007), with guards becoming sadistic and prisoners 'zombie-like in their mindless compliance, obeying absurd orders' (p 181). The surveillance society differs in the lack of personal immediacy but the separation out of 'guards' and 'prisoners' analogy seems to hold. To take one seemingly minor example, Read & Sadler (2008: 9) tell the story of how a monitor is able to view someone dropping litter via CCTV and scold them via loudspeaker. Although Foucault is important in understanding the surveillance society, it is clear from examples such as this that it rests on more than encouraging individuals to adjust their own behaviour.

5. Concluding Comments

This paper has engaged in a wide-ranging discussion around the issues of information asymmetry in contemporary life. We have examined the relationship between such asymmetries and how power is ineluctably interrelated to such imbalances. Within this, we demonstrated how key technologies and techniques have been, and continue to be, employed to deepen and widen the information gap.

Unsurprisingly, we note that there are marked differences between those who inhabit the opposite banks – we are witnessing an entrenchment of power and information within a small, exclusive group on one side while the general population bears the weight of evermore intrusive surveillance.

One potential, and possibly democratic, move would be to ensure that knowledge is spread more equally and transparently. Simmel (1906: 447-8) suggested that, 'If there were such a thing as

complete reciprocal transparency, the relationships of human beings to each other would be modified in a quite unimaginable fashion.’ We concur. Imagine a cashless society in which all transactions are recorded, and which are easily observable by any member of this society. Engaging in criminal activities would be futile since any proceeds would become instantly visible to everyone. Discrimination by employers at the workplace would be similarly rendered impossible – the evidence of systematic prejudice in wages would swiftly be recognised. Exploitative practices by corporations would no longer be shielded by commercial confidentiality and politicians would be stripped of their power to drag their nations into wars under false pretences. A secret service would become a contradiction in terms, as a lack of secrets would render it obsolete. While such a society has a certain appeal, the flip side is that privacy has effectively been abandoned. Yet in our current society we are seeing a similar erosion of privacy. Only it is not our peers that pry on us but unaccountable government agencies and corporations. This leaves us with two issues. The first is that we should, as a *demos*, be able to determine how much privacy we keep and how much surveillance we suffer. And, if we are to curtail our rights to privacy, we should determine who holds that information and for what purpose – whether it be available to all or to a select few.

This carries with it an even more radical codicil. Gaverta and Cornwall (2008: 180-1) suggest that simply developing participatory processes carries ‘the danger ... that existing power relations may simply be reinforced, without leading to substantive changes in policies or structures which perpetuate the problems being addressed.’ Knowledge that is sorted within a pyramid of privilege will always carry the risk that power structures will endure – and this is a further question that will need addressing. Orwell (1949/1984: 321) pointedly remarks, ‘In the long run, a hierarchical society was only possible on the basis of poverty and ignorance.’ While here we do not delve deeply into the issues surrounding the economic dominance by elites, we cannot avoid consideration of the implication what could be considered the ‘orchestrated ignorance and poverty’ of society, or as (Mirowski 2013: 227) puts it, the deliberate fostering of agnotology. The evidence is clear: political and commercial leaders purposefully withhold information from the rest of society – information

that is currently being gathered on an unprecedented scale. We should not be surprised with such developments as information asymmetry is the very foundation on which the existence of elites is built and possibilities of strengthening that asymmetry will be enthusiastically sought.

As this paper demonstrates, within economics and finance, there has been a long-standing recognition of the deleterious effects of information asymmetry for both economic decision-making and for capital markets, with consequences for the well-being of the wider population. Societies should carefully consider, given how heavily costs to all outweigh the benefits to the few, how much information should be collected and who should have access to it. As a minimum, we need to consider the level of democratic oversight and institutional accountability over data collection, handling, processing and dissemination. Beyond that, members of society should be able to voice their preferences with regards to privacy and information access. Although technology activists argue that information wants to be free (Brand 1987: 202), we contend that the freedom to collect information has been at the expense of individual freedom of the general public.

References

Akerlof, G. A. (1970) 'The Market for 'Lemons': Quality Uncertainty and the Market Mechanism', *Quarterly Journal of Economics*, Vol. 84 (3), pp. 488–500.

Albrecht, K. & McIntyre, L. (2005) *Spychips: How Major Corporations and Government Plan to Track Your Every Move with RFID*, Nashville: Thomas Nelson Inc.

Albrecht, K. (2007) 'Microchip-Induced Tumors in Laboratory Rodents and Dogs: A Review of the Literature 1990–2006', Working Paper, available at <http://www.antichips.com/cancer/albrecht-microchip-cancer-full-paper.pdf> (last consulted 28 November 2013).

Andrews, R. (2013) 'Microsoft's Xbox One: Always on, Always Watching?', *The Guardian*, June 17.

Arrow, K. J. (1969) 'The Organization of Economic Activity: Issues Pertinent to the Choice of Market versus Non-market Allocations', in *Analysis and Evaluation of Public Expenditures: The PPP System*, Vol. 1, pp. 47–64.

Arulampalam, W., Booth, A. L., & Bryan, M. L. (2007) 'Is There a Glass Ceiling Over Europe? Exploring the Gender Pay Gap across the Wage Distribution', *Industrial and Labor Relations Review*, Vol. 60 (2), pp. 163-186.

Ashton, K. (2009) 'That 'Internet of Things' Thing', *RFID Journal*, Vol. 22, pp. 97-114.

- Athwal, A. (2004) 'Harold Innis and Comparative Politics: A Critical Assessment', *Canadian Journal of Political Science/Revue canadienne de science politique*, Vol. 37(2), pp. 259-280.
- Atzori, L., Iera, A., & Morabito, G. (2010) 'The Internet of Things: A Survey', *Computer Networks*, Vol. 54 (15), pp. 2787-2805.
- Ball, J. (2014) 'Revealed: NSA Gathers 200m Texts a Day', *The Guardian*, January 17th.
- Barrett, D. (2013) 'One Surveillance Camera for Every 11 People in Britain, Says CCTV Survey' *The Telegraph*, July 10.
- BBC (2013) 'Vatican Bank Publishes First Ever Annual Report', *BBC*, October 1.
- Bennet, W. L. (1988) *News: The Politics of Illusion*, New York: Longman.
- Bentham, J. (1787) *Panopticon: or, The Inspection-house*, in a series of letters written in the year 1787, Dublin, Reprinted and sold, London: T. Payne.
- Bhattacharya, U and Daouk, H. (2002) 'The World Price of Insider Trading', *Journal of Finance*, Vol. 57 (1), pp. 75-108.
- Bilefsky, D. (2006) 'Data Transfer Broke Rules, Report Says', *New York Times*, September 28th 2006.
- Blanchard, K. T., Barthel, C., French, J. E., Holden, H. E., Moretz, R., Pack, F. D., Tennant, R. W. & Stoll, R. E. (1999) 'Transponder-Induced Sarcoma in the Heterozygous p53+/-Mouse', *Toxicologic Pathology*, Vol. 27 (5), pp. 519-527.
- Brand, S. (1987) *The Media Lab: Inventing the Future at MIT*, Harmondsworth: Viking Penguin.
- Brown, S. D. & Lightfoot, G. (2002) 'Presence, Absence and Accountability: Email and the Mediation of Organization Memory' in S. Woolgar (ed.) *Virtual Society: Technology, Cyberbole, Reality*. Oxford: Oxford University Press, pp. 209-29.
- Brzezinski, Z. (2010) *Out of Control: Global Turmoil on the Eve of the 21st Century*, New York: Simon & Schuster.
- Bushman, R. M., Piotroski, J. D., & Smith, A. J. (2005) 'Insider Trading Restrictions and Analysts' Incentives to Follow Firms', *Journal of Finance*, Vol. 60 (1), pp. 35-66.
- Carminato, A., Vascellari, M., Marchioro, W., Melchiotti, E., & Mutinelli, F. (2011) 'Microchip-Associated Fibrosarcoma in a Cat', *Veterinary Dermatology*, Vol. 22 (6), pp. 565-569.
- Cauley, L. (2006) 'NSA has Massive Database of Americans' Phone Calls' *USA Today*, 11 May.
- Chang, C. and Wang, Y. (1996) 'Human Capital Investment under Asymmetric Information: The Pigovian Conjecture Revisited', *Journal of Labor Economics*, Vol. 14 (3), pp. 505-519.
- Chapman, T. L. & Reiter, D. (2004) 'The United Nations Security Council and the Rally 'Round the Flag Effect'', *The Journal of Conflict Resolution*, Vol. 48 (6), pp. 886-909.
- Cohen, L., Frazzini, A. & Malloy, C. (2008) 'The Small World of Investing: Board Connections and Mutual Fund Returns', *Journal of Political Economy*, Vol. 16(5), pp. 951-979.

- Cookson, R. (2013) 'London's Ban for Spy Bins Highlights Lure of Big Data to Business', *Financial Times*, August 13th.
- Dann, G. E., & Haddow, N. (2008) 'Just Doing Business or Doing Just Business: Google, Microsoft, Yahoo! and the Business of Censoring China's Internet', *Journal of Business Ethics*, Vol. 79(3), pp. 219-234.
- Delaloye, F. X., Habib, M. A., & Ziegler, A. (2012) 'Swiss Banking Secrecy: The Stock Market Evidence', *Financial Markets and Portfolio Management*, Vol. 26(1), pp. 143-176.
- Desouza, K. C. & Vanapalli, G. K. (2005) 'Securing Knowledge in Organizations: Lessons From the Defense and Intelligence Sectors', *International Journal of Information Management*, Vol. 25 (1), pp. 85-98.
- DHS (2012) 'Privacy Impact Assessment Update for the Standoff Technology Integration and Demonstration Program: Biometric Optical Surveillance System Tests' *DHS/S&T STIDP/PIA-008(b)*, Available at http://www.dhs.gov/sites/default/files/publications/privacy/PIAs/privacy_pia_st_stidpboss_dec2012.pdf, last consulted 28 November 2013.
- Dye, T. R. & Pickering, J. W. (1974) 'Governmental and Corporate Elites: Convergence and Differentiation', *Journal of Politics*, Vol. 36 (4), pp. 900-925.
- Elcock, L. E., Stuart, B. P., Wahle, B. S., Hoss, H. E., Crabb, K., Millard, D. M., Mueller, R. E., Hastings, T. F. & Lake, S. G. (2001) 'Tumors in Long-Term Rat Studies Associated with Microchip Animal Identification Devices', *Experimental and Toxicologic Pathology*, Vol. 52 (6), pp. 483-491.
- Fama, E. (1970). 'Efficient Capital Markets: A Review of Theory and Empirical Work'. *Journal of Finance*, Vol. 25 (2): 383-417.
- Fama, E. F., & French, K. R. (2005) 'Financing Decisions: Who Issues Stock?', *Journal of Financial Economics*, Vol. 76 (3), pp. 549-582.
- Ferguson, N. (2013) 'On the Teaching of History, Michael Gove is Right', *The Guardian*, February 15.
- Fishman, M. J., & Hagerty, K. M. (1992) 'Insider Trading and the Efficiency of Stock Prices', *RAND Journal of Economics*, Vol. 23 (1), pp. 106-122.
- Foster, K. R., & Jaeger, J. (2008) 'Ethical Implications of Implantable Radiofrequency Identification (RFID) Tags in Humans', *The American Journal of Bioethics*, Vol. 8 (8), pp. 44-48.
- Foucault, M. (1977) *Discipline and Punish: The Birth of the Prison*, (tr. A. Sheridan) London: Allen Lane.
- Foucault, M. (1979) *The History of Sexuality: Volume 1*, (tr. R. Hurley), Harmondsworth: Penguin.
- Francis, J. R., Huang, S., Khurana, I. K., & Pereira, R. (2009) 'Does Corporate Transparency Contribute to Efficient Resource Allocation?', *Journal of Accounting Research*, Vol. 47 (4), pp. 943-989.
- Francis, J. R., Khurana, I. K., & Pereira, R. (2005) 'Disclosure Incentives and Effects on Cost of Capital Around the World', *The Accounting Review*, Vol. 80 (4), pp. 1125-1162.

- Garcia-Swartz, D. D., Hahn, R. W., & Layne-Farrar, A. (2006) 'The Move Toward a Cashless Society: A Closer Look at Payment Instrument Economics', *Review of Network Economics*, Vol. 5(2), pp. 175-198.
- Gaverta, J. & Cornwall, A. (2008) 'Power and Knowledge' in Reason, P. & Bradbury, H. *The Sage Handbook of Action Research: Participative Inquiry and Practice (2nd edition)*, London: Sage.
- Gilchrist, M., Mooers, D. L., Skrubbeltrang, G. & Vachon, F. (2012) 'Knowledge Discovery in Databases for Competitive Advantage', *Journal of Management and Strategy*, Vol. 3(2), pp. 2-15.
- Gilbert, A., Tourani-Rad, A., & Wisniewski, T. P. (2006) 'Do Insiders Crowd Out Analysts?', *Finance Research Letters*, Vol. 3 (1), pp. 40-48.
- Glennerster, R., & Shin, Y. (2008) 'Does Transparency Pay?', *IMF Staff Papers*, Vol. 55 (1), pp. 183-209.
- Glosten, L. R., & Milgrom, P. R. (1985) 'Bid, Ask and Transaction Prices in a Specialist Market with Heterogeneously Informed Traders', *Journal of Financial Economics*, Vol. 14 (1), pp. 71-100.
- Goldin, C., & Rouse, C. (2000) 'Orchestrating Impartiality: The Impact of "Blind" Auditions on Female Musicians', *The American Economic Review*, Vol. 90 (4), pp. 715-741.
- Hausmann, R., Tyson, L. D. A., & Zahidi, S. (2008) *The Global Gender Gap Report 2008*, Geneva: World Economic Forum.
- Hays, C. L. (2004) 'What They Know About You: An Obsessive Monitor of Consumer Behavior', *New York Times*. p. BU1, November 14.
- Herdt, G. (1990) 'Secret Societies and Secret Collectives', *Oceania*, Vol. 60 (4), pp. 360-381.
- Herman, E. S. & Chomsky, N. (1994) *Manufacturing Consent: The Political Economy of the Mass Media*, London: Vintage.
- Heyer, P. & Crowley, D. (2008) 'Introduction' in H. A. Innis, *The Bias of Communication (2e)* Toronto: University of Toronto Press.
- Hobbs, J. E. and Plunkett, M. D. (1999) 'Genetically Modified Foods: Consumer Issues and the Role of Information Asymmetry', *Canadian Journal of Agricultural Economics/Revue canadienne d'agroeconomie*, Vol. 47 (4), pp. 445-455.
- Horwitz, S. (2014) 'Ruling against NSA Collection of Phone Data is Appealed', *Washington Post*, January 3rd.
- Hoskin, K. & Macve, R. H. (1986) 'Accounting and the Examination: a Genealogy of Disciplinary Power', *Accounting, Organizations and Society*, Vol. 11(2), pp. 105-136.
- House, P. (1996) "'Mafia Link' Poet in Line for Nobel Prize' *Evening Standard*, August 2nd p23.
- Hume, D. (1742/1987) *Essays, Moral, Political, and Literary*, E. F. Miller, ed. Indianapolis, IN: Liberty Fund, Library of Economics and Liberty [Online] available from <http://www.econlib.org/library/LFBooks/Hume/hmMPL4.html>, last accessed 21 January 2014.
- Innis, H. A. (2008) *The Bias of Communication (2e)*, Toronto: University of Toronto Press.

- Jolicoeur, P. M. & Knowles, L. L. (1978) 'Fraternal Associations and Civil Religion: Scottish Rite Freemasonry'. *Review of Religious Research*, Vol. 20 (1), pp. 3-22.
- Kahn, J. M., Katz, R. H., & Pister, K. S. (1999) 'Next Century Challenges: Mobile Networking for "Smart Dust"'. *Proceedings of the 5th Annual ACM/IEEE International Conference on Mobile Computing and Networking*, pp. 271-278.
- Kravets, D. (2012) 'Tracking School Children with RFID Tags? It's All About the Benjamins', *Wired* 7 September.
- Kulow, M. D. (2013) 'Beyond the Paycheck Fairness Act: Mandatory Wage Disclosure Laws – a Necessary Tool for Closing the Residual Gender Wage Gap', *Harvard Journal on Legislation*, Vol. 50, pp. 385-513.
- Le Calvez, S., Perron-Lepage, M. F., & Burnett, R. (2006) 'Subcutaneous Microchip-Associated Tumours in B6C3F1 Mice: a Retrospective Study to Attempt to Determine their Histogenesis', *Experimental and Toxicologic Pathology*, Vol. 57 (4), pp. 255-265.
- Le Carré, J. (1974) *Tinker, Tailor, Soldier, Spy*, London: Hodder & Stoughton.
- Lewis, L. (2011) 'Beijing Plans to Crush Protests by Tracking Millions on Mobile Phone' *The Times*, March 4.
- Li, K., & Zhao, X. (2008) 'Asymmetric Information and Dividend Policy', *Financial Management*, Vol. 37 (4), pp. 673-694.
- Lohr, S. (2010) 'Smart Dust? Not Quite, but We're Getting There', *New York Times*, January 31.
- Lyon, D. & Haggerty, K.D. (2012) 'The Surveillance Legacies of 9/11: Recalling, Reflecting on, and Rethinking Surveillance in the Security Era.' *Canadian Journal of Law and Society*, Vol. 27(3), pp. 291-300.
- Lyon, D. (2007) *Surveillance Studies: An Overview*, Cambridge: Polity.
- Manne, H. G. (1966) *Insider Trading and the Stock Market*, New York: Free Press.
- Manove, M. (1989) 'The Harm from Insider Trading and Informed Speculation', *Quarterly Journal of Economics*, Vol. 104 (4), pp. 823-845.
- Mirowski, P. (2013) *Never Let a Serious Crisis Go to Waste*, London: Verso.
- Mollenkamp, C., Pilon, M & Ball, D. (2010) 'Swiss Clear Path to Name U.S. Clients', *Wall Street Journal*, June 16th 2010.
- Myers, S. C. (1984) 'The Capital Structure Puzzle', *Journal of Finance*, Vol. 39 (3), pp. 574-592.
- Myers, S. C., & Majluf, N. S. (1984) 'Corporate Financing and Investment Decisions when Firms have Information that Investors do not have', *Journal of Financial Economics*, Vol. 13 (2), pp. 187-221.
- Nakashima, E. & Marimow, A. E. (2013) 'Judge: NSA's Collecting of Phone Records is Probably Unconstitutional', *Washington Post*, December 16th.

O'Neill, J. (2003) 'The Gender Gap in Wages, circa 2000', *The American Economic Review*, 93 (2), pp. 309-314.

Orwell, G. (1949/1984) *Nineteen Eighty-Four*, Oxford: Clarendon Press.

Paltrow, S. J. (2013) 'Unaccountable: the High Cost of the Pentagon's Bad Bookkeeping', *Reuters Investigates*, November 18th.

Parker, D. and Hartley, K. (2003) 'Transaction Costs, Relational Contracting and Public Private Partnerships: a Case Study of UK Defence', *Journal of Purchasing and Supply Management*, Vol. 9 (3), pp. 97-108.

Perkin, H. (1978) 'The Recruitment of Elites in British Society since 1800', *Journal of Social History*, Vol. 12(2), pp. 222-234.

Petrovic, M. & Hamilton, G. (2006) 'Making Global Markets: Wal-Mart and Its Suppliers' In Nelson Lichtenstein (Ed.) *Wal-Mart: The Face of Twenty-First-Century Capitalism* (pp. 102-141), New York: The New Press.

Polasik, M., Wisniewski, T. P., & Lightfoot, G. (2012) 'Modelling Customers' Intentions to Use Contactless Cards', *International Journal of Banking, Accounting and Finance*, Vol. 4 (3), pp. 203-231.

Rahman, M. A. (1991) 'The Theoretical Standpoint of PAR' in Fals Borda, O., & Rahman, M. A., *Action and Knowledge: Breaking the Monopoly with Participatory Action-Research*, New York: Apex Press.

Read, M., & Sadler, C. (2008) *Information society in the United Kingdom*. London: Middlesex University.

Readings, W. (1996) *The University in Ruins*, Cambridge, MA.: Harvard University Press.

Reider-Gordon, M. & Butler, T. K. (2013) 'Anti-Money Laundering', *The Year in Review: An Annual Publication of the ABA/Section of International Law*, pp. 387-404.

Richards, N. M. (2013) 'The Dangers of Surveillance', *Harvard Law Review*, Vol. 126(7), pp. 1934-1965.

Rosenthal, L. (1996) 'Dateline Rome: The New Face of Western Democracy', *Foreign Policy*, No. 104, pp. 154-168.

Rummel, R. J. (2007) *Statistics of Democide: Genocide and Mass Murder Since 1900*, Piscataway, NJ: Transaction Publishers.

Seyhun, H. N. (2000) *Investment Intelligence from Insider Trading*, Cambridge, MA: MIT Press.

Seyhun, H. N. (2008) 'Insider Trading and the Effectiveness of Chinese Walls in Securities Firms', *Journal of Law, Economics and Policy*, Vol. 4 (2), pp. 369-408.

Simmel, G. (1906) 'The Sociology of Secrecy and of Secret Societies', (tr. A. W. Small). *American Journal of Sociology*, Vol. 11 (4), pp. 441-498.

Simon, H. A. (1957) 'A Behavioral Model of Rational Choice', in *Models of Man, Social and Rational: Mathematical Essays on Rational Human Behavior in a Social Setting*. New York: Wiley.

- Sirgany, A. (2009) 'The War on Waste', *CBS News*, February 11.
- Smith-Barrow, D. (2013) 'Where America's Top CEOs Went to School', *US News*, May 22nd.
- Statham, P. (1996) 'Berlusconi, the Media and the New Right in Italy', *Harvard International Journal of Press/Politics*, Vol. 1 (1), pp. 87-105.
- Stigler, G. J. (1961) 'The Economics of Information', *Journal of Political Economy*, Vol. 69 (3), pp. 213–225.
- Stiglitz, J. E. (2002) 'Information and the Change in the Paradigm in Economics', *The American Economic Review*, Vol. 92 (3), 460-501.
- Straub, P. G. and Murnighan, J. K. (1995) 'An Experimental Investigation of Ultimatum Games: Information, Fairness, Expectations, and Lowest Acceptable Offers', *Journal of Economic Behavior & Organization*, Vol. 27 (3), pp. 345-364.
- The Economist (2004) 'The Curse of Nepotism', January 8th.
- Timberg, C. & Nakashima, E. (2013) 'FBI's Search for 'Mo,' Suspect in Bomb Threats, Highlights Use of Malware for Surveillance', *Washington Post*, December 6th.
- Useem, M. & Miller, S. M. (1975) 'Privilege and Domination: The Role of the Upper Class in American Higher Education', *Social Science Information*, Vol. 14 (6), pp. 115-145.
- Useem, M. (1980) 'Corporations and the Corporate Elite', *Annual Review of Sociology*, Vol. 6, pp. 41-77.
- van Dijk, E. and Grodzka, M. (1992) 'The Influence of Endowments Asymmetry and Information Level on the Contribution to a Public Step Good', *Journal of Economic Psychology*, Vol. 13 (2), pp. 329-342.
- Vascellari, M., Melchioni, E., & Mutinelli, F. (2006) 'Fibrosarcoma with Typical Features of Postinjection Sarcoma at Site of Microchip Implant in a Dog: Histologic and Immunohistochemical Study', *Veterinary Pathology Online*, Vol. 43 (4), pp. 545-548.
- Villasenor, J. (2011) *Recording Everything: Digital Storage as an Enabler of Authoritarian Governments*. Center for Technology Innovation at Brookings.
- Ward, P. & Horne, A. (2012) 'Interception of Communications' Standard Note SN/HA/6332. London: House of Commons
- Warman, M. (2013) 'Facial Recognition: Inevitable, But will Shoppers Approve?' *The Telegraph*, November 9.
- Willey, D. (2013) 'The Vatican Bank is Rocked by Scandal Again', *BBC*, July 18.
- Wisniewski, T. P. (2004) 'Reexamination of the Link between Insider Trading and Price Efficiency', *Economic Systems*, Vol. 28 (2), pp. 209-228.
- Zajda, J. and Zajda, R. (2003) 'The Politics of Rewriting History: New History Textbooks and Curriculum Materials in Russia', *International Review of Education* Vol. 49(3-4), pp. 363-384.
- Zimbardo, P. (2007) *The Lucifer Effect: How Good People Turn Evil*, London: Ebury.