Transformative Processes of Agency: Information Technologies and the Production of Digitally Mediated Selves

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Abstract. *New media technologies are becoming an increasingly prominent constituent of everyday living, with their proliferation presenting new challenges to key aspects of the self, namely agency and identity. The potential recalibration of these notions comes about through new forms of agency being produced when information technologies play an increasingly powerful role in our lives. In this context agency is not something that can be reified and easily measured, or understood as solely intentional human action. Instead, agency is understood as something that comes to be as practices of life making. We take up these ideas in relation to people's experiences with information technologies. Through semi-structured interviews with members of the public from London and the South East of the UK, we analyse how information technologies potentially recalibrate people's subjectivity through informational agency. Participants' engagements with information technologies are more nuanced and complex than a 'either good or bad' distinction. This is one of the analytic foci of the paper, as information technologies, even when viewed with suspicion or as creating concern, are often willfully utilised due to the perceived benefits they can bring. We focus on the potential technologisation of identity and subjectivity through arguing that new forms of digitally mediated selves are produced when daily lives come to be defined more by information than by the flesh and blood of our bodies. We conclude by drawing attention to challenges facing our experiences, and understandings of, subjectivity brought about by the relentless informationalisation of life.*

Keywords: *Information societies, agency, surveillance, everyday life.*

Raktažodžiai: *informacinės visuomenės, veiksmas, sekimas, kasdienis gyvenimas.*

Living in Information Societies

The continual rise in prominence of computer technologies in all domains of everyday living shows no sign of abating. We live in worlds whose infrastructure is made up of increasing amounts of technology, much of which is designed to harvest and utilise information derived from us (Crang, Graham 2007). With such technologies comes a potential different currency for social scientific concepts of the self, namely information. Computer technologies deal in information of varying nature (e.g. visual and non-visual), and since the dawn of the computer age increasing amounts of our lives have become informationalised (Webster 2006). In this paper we seek to explore some of the potential ways that information technologies are shaping our lives, before moving towards a notion of understanding subjectivity through the concept of *digitally mediated selves*. A key question raised by the gradual erosion of traditional notions of self (e.g. as defined by our bodies), is agency. When more and more information about us is being recorded, stored and used, who is it that is doing it, and to what end? Is control an issue, and if so, where does it reside? These questions are timely ones, as the amount of information derived from us and attempting to shape our future experiences increases exponentially, and shows no sign of abating. Computer science, for one, can tell us a lot about the technological capabilities of systems of information capture, storage and use, but cannot aid us in understanding the impact of said technologies on the production of everyday life (Beer 2009). To do so requires analysis of the interface of bodies and technology; understanding how people's experiences are shaped by interaction with information technologies. This involves addressing people's lives not in terms of common dualistic distinctions, such as online vs offline, or virtual vs real, but as produced at the interface of bodies and technologies, or what we call *digitally mediated selves*.

According to Nigel Thrift, information has become a modern form of capital (2005) because individuals are becoming increasingly commodified through the insatiable appetite for personal information of information technologies. Key internet organisations such as Google have enjoyed meteoric growth due to their bulging databases, full of information about people's preferences, which are so attractive to advertisers. Information has become a leading and valuable currency in the Western developed world (and is spreading fast as more of the world becomes 'connected'). This has led to increasingly sophisticated ways of trying to gather more detailed information about our preferences and desires, and with that information, to direct us towards products and services that the computing power of software algorithms *think* we may want. For instance, search engines are not always as straightforward and benign as might be expected, e.g. Google operates a 'personalised' service that provides results according to individual past search histories providing an online 'fingerprint' of search history (Pariser 2011). Whilst people may think

they would receive the same results as someone else conducting an identical search, this is not the case, as information technologies become agents of attempting to organise our future lives through providing personalised services. Consequently, information has come to be seen as a constituent of our social worlds (Castells, Cardosa 2005; Castells 2004; Fuchs 2011; Webster 2006); more than just a mechanism to transmit and transport knowledge. The giving of constructive attributes that comes with such ideas is borne from the reality of technology acting with agency, with the software algorithms behind things such as internet search engines seen as a force for organising life, what David Beer terms "the implications of software 'sinking' into and 'sorting' aspects of everyday life" (2007, 987). This agency works to organise much of everyday living through vast networks of communication between computers, a large part of which operates outside of our conscious experience. It is against this backdrop of technological agency that human life is played out, through multiple engagements with networked technologies.

The above concerns lead to an account of a networked society, in which computer databases, social networking and organisational data storage form the technological grounds upon which daily life occurs. The immersion of human cognition in technologies has led to the suggestion that the latter now act as 'thought prosthetics' (Turkle 2005), with thought conceptualized as a distributed process involving biology and technology. Functions previously seen as interior (e.g. cognitive function) now become externalised through body-technology relations. This is seen as a result of the gradual informationalisation of life, with so much of everyday living taking place amidst widespread technological activity (e.g. automatic email update, GPS location services on mobile phones, programmable domestic climate control systems, 'intelligent' digital television services, government monitoring of mobile phone communications). The idea that our lives are produced in concert with technologies, and as such they form part of our *way of being* is not new. For instance Heidegger (1977) wrote extensively that *technics* have always been a key part of constituting the parameters and operation of human life, from early hunter-gatherers' use of weapons for hunting to modern computer systems organizing tax records. Such ideas have been taken up in cyberspace theory in seeking to avoid a dualistic model of humans and technologies as distinct forms of being (Brown 1999).

The changes to technologies in recent times present new roles for them as organizational forces on living (e.g. online shopping and social networking technology). The rise in the currency of information required in new body-technology assemblages potentially present people with new ways of considering what constitutes their subjectivity. So long classified by the flesh of bodies, this is seriously being challenged by the multiple informatics of online technology. This means that retaining awareness of the totality of information activity is seen as beyond the capacity of consciousness, so falls to the realm of

technology, through the multiple organisational and personal databases that record, store and use information. The shift in currency towards information becomes a threat to human consciousness in terms of rendering it secondary (a point noted by Thrift (2004) with the term 'technological unconscious' in reference to the amount of life making that goes on in and by technology outside of human awareness).

N. Katherine Hayles (2006) takes this up with the notion of *cognisphere* (drawn from Thomas Whalen 2000); designating the distribution of thought across human and technology rather than being the sole reserve of the former. For Hayles holding on to an idea that cognition is solely a human capacity is outdated, as we can see multiple ways in which 'thought' occurs outside the realms of human psychological function. For instance, Hayles uses the example of the National Security Agency's computer system that captures over two million pieces of information per hour about US citizens and scans it for information deemed potentially suspect (2006). Such 'computer thinking' occurs autonomously, without oversight from humans. Hayles argues that framing the human as the primary source of agency is no longer a useful or valid method, instead we must broaden scope to include the multifarious technological activity that shapes our lives. It is amidst this technological unconscious that subjectivity is said to emerge, as a partial awareness of the totality of information production (Beer 2009).

This has clear implications for notions of subjectivity. Increased technological capability suggests decreased human action. Such ideas have led to concerns regarding technological determinism (e.g. Jordan 2008; Schroeder 2007); are we entering a world in which technology rules? Science fiction, along with popular culture, has often suggested this to be the case, or at least offered stories of worlds in which technology runs amok (e.g. Hollywood films such as *Minority Report* and *Blade Runner*). However, we are not alone in considering this too much of a simplification. As Heidegger (and many others) note, technologies have always played an active role in constituting the conditions of living. What changes is their particular make up, and the resultant changing nature of human-technological living. We seek to examine this in relation to modern information technologies and their insatiable appetite for information in terms of the ways of living they afford. Defining subjectivity as a singular form within such mobile terrains would be an error. Instead, the notion of digitally mediated selves is designed to capture some of the reality of the speed and movement of the capture and use of information derived from us, and the multiple journeys, transformative and not, that informational flows take in the shaping of everyday life. This can involve addressing how people make sense of the shaping forces of computer technology on their lives, and attend to the fluidity and speed of informational flow.

Surveillance and Information

Approaching these issues empirically involves analysing the emergence of forms of subjectivity produced against the modern technological backdrop. Key to this is analysis of the emergence and flow of information pertaining to people's lives, with an eye for the forces by and through which information flows and is put to use. We have already noted the definitive nature of information in terms of its longevity; being recorded, stored and used. Literature from the area of Surveillance Studies is useful here as it refers directly to the issue of the potential visibility of people through monitoring of information by others, such as organisations that harvest personal data. Several theories have emerged regarding the use of information by organisations. These include those derived from the Foucauldian panopticon logic of disciplinary power, itself largely a response to the proliferation of forms of visual surveillance. As noted, the gradual informationalisation of self proffers new and distinct problems in terms of its designation of identity and its visibility. For instance, visual surveillance (i.e. CCTV) records and stores images of people; hence its designation of self is embodied, as it is the visibility of people's bodies that is captured and stored. Visual surveillance presents an identity based on the body as visible; people can be monitored and potentially held accountable for bodily action. It is one layer of self used as the marker for appropriate or inappropriate behaviour. Forms of visual surveillance do not monitor, store or utilise other layers of what constitutes the self, namely the abundant amount of information produced through and by engaging with computer technologies. The panopticon model of Foucault has somewhat given way to ideas concerned with promulgating a model of surveillance as more fragmented and disparate, in which the notion of an all-powerful minority surveilling the powerless masses is replaced by the idea of surveillance as assemblages (Deleuze 1992). These new 'societies of control' conceptualise people as 'dividuals' rather than 'individuals', as they are now constituted by multiple forms of codes and passwords which are the required currency for access to modern social technologies (Deleuze 1992). Such a model takes us some way towards understanding the shift from bodies to information in the constitution of self, although in a rather general sense. Attention to the particular technological practices that enact informationalisation and the specifics of those processes is lacking. There are efforts to this end; some tend to focus on the technological capabilities of IT systems and databases, whilst others approach from the interface between people-technologies. For example, Lyon's notion of 'social sorting' attempts to analyse the organised workings of multiple forms of information technologies that capture and record information and use it to categorise people into particular social groups for a range of purposes (e.g. marketing). Understanding how such practices impact on people's lives, in terms of the kinds of uses, reactions and potential forms of resistance to them

is argued to be a necessary empirical need (Lyon 2002). Lyon captures some of the infrastructural understanding of the role of such systems of information that dominate modern society, and in doing so, create 'data-subjects'. What we know less about are the localized experiences of people who become users of, and used by, information technologies. Understanding some of the ways that specific bodies and spaces are organised according to the algorithmic logic of computer databases is important, and Lyon's edited collection provides a range of examples of this (Lyon 2002).

The aforementioned concerns necessitate an approach to agency that understands and approaches it as a multiple and context specific product of everyday practices with information technologies. To conceptualise agency as a distinct entity with a singular form of identity and organisation would be to blinker oneself to the shifting nature of practices for which agency is a concern. Such a model features in traditional notions of agency that conceptualise it as a human capability for intentional conscious action. Willful reflective activity is accordingly seen to define agency, and to be solely a human facet. However, presenting agency in this way, as some*thing* that exists over which control is negotiated can be a problematic conceptualisation, as it requires a spatialisation of that category. It can be more beneficial to consider agency as a *practice*; a mode of organising one's self in relation to a particular set of concerns (Latour 2005). Jane Bennett sums this up as "[H]uman agency again appears as a vexed concept, through its snarls and dilemmas are easy to skate over when the alternatives are reduced to either a free human agency or passive, deterministic matter" (2010).

Hence, the aim of the paper is to analyse some of the everyday practices through which issues of agency are experienced. This involves addressing the level of awareness of people regarding how information flows through bodies and technologies, from initial disclosure to technological immersion during which it is subject to potential transformation. Some or all of this may go unnoticed by people during internet activity. For instance, are people always aware of targeted advertising that occurs when online? If so, do they understand the processes through which this happens? Others may be acutely aware of some or all of the ways information about, or derived from, them is used by external organisations (e.g. government agencies, retailers, private companies). These questions drive the analysis of interviews in this paper. The argument is that our lives are becoming shaped by increasing amounts of information derived from us, potentially transformed by, and then utilized in, engagement with a variety of information technologies. The aim of this paper is to approach these issues empirically, through narratives of engagements with information technologies, with analysis focusing on how informational flows attempt to shape psychological life and in doing so transfer facets traditionally seen as human (e.g. agency and identity) into technological realms of computer databases and their software algorithms.

Methodological Considerations

The methodological approach of the project from which this paper derives involved thirty-one semi-structured interviews with Londoners and people from the South East on England about their experiences with information technologies. This primarily involved internet use but also included non-internet technologies such as Government databases. This paper focuses on parts of interviews relating to the recording, storage and use of personal information. Interviewees were asked about their experiences in relation to disclosing information, including on the internet along with a range of non-internet organisations. The aim was to look at the forms of digitally mediated selves produced, e.g. through the ways that awareness of technologisation occurs, and how this revolves around notions of agency. The interviews were analysed using a theoretically informed discourse analysis, in which the understanding of people as becoming increasingly informationalised guided the analytic process. The interviews allowed this approach to be augmented by specific empirical focus on the production of digitally mediated selves.

The Production of Digitally Mediated Selves

The analysis focuses on the question of the role of information technology in the constitution of what we are calling *digitally mediated selves*. This involves looking for instances in which information, through online technology, acts as a shaping force on life. The aim is for a greater sense of the role information technologies can play in producing everyday life in the form of digitally mediated selves. The analysis focuses on three factors; becoming conscious of the technological unconscious; technologies knowing the self and thinking surveillantly.

Becoming conscious of the technological unconscious

This section focuses on the production of awareness of how personal information can be used by online technologies such as social networking sites. Key here is to analyse this as an instance when consciousness of the operation of information technology emerges, with people's reaction to this. In the following extracts we see Fatima talking about the role of personal information in internet activity:

> Extract 1
> I: So you were aware of it?
> F: Yeah but I didn't really think of it. Like I'm I know that when you're shopping and stuff it remembers what stuff you generally look at and even

internet whatever you search it remembers it I guess I didn't think that data gets stored I didn't think of it that way.

I: Which way? So you said you were aware of it, that stuff <yeah> but?

F: But I never really thought of it as stuff that err you know information that gets saved about you <ok>.

I: So is it the saving the holding of it which is novel?

F: Just the fact that it links back to, your identity I suppose its <ok> never really thought about that (4) it's a bit scary (laughter) (lines 189–199).

Extract 2

I: Right could you expand a bit on that, the scariness of it?

F: Erm I don't know I never really even though I'm on Facebook I never thought of it as a way of sharing information erm I don't know how to explain it. I think offering your details onto other people where erm then you don't know really what they're going to do with it whereas people you originally give it to you know the reasons <mmm> and you're fine with it obviously because you give it them, but when they pass it on then you don't really know what it's used for and that can be a bit scary I think.

I: Ok erm so it's the not knowing? <I suppose so> and that the difference between <yeah> giving it directly and, <yeah> it being passed on?

F: Yeah cause you don't know whether it is being passed on to safe [inaudible] or…

I: Ok so it's about who it's being passed on to.

F: Yeah and what they're gonna use it for… (lines 208–221)

These two extracts come from a section of an interview with Fatima (aged 21) in which a list of technologies that record personal information is being discussed. Fatima demonstrates unawareness of the reality of information storage, claiming "I didn't think data gets stored." Recognition dawns on Fatima regarding the production of the self through digital information. It is one thing for information to be disclosed during online shopping, for example, but the storage of it is a more pressing concern, as it opens up the possibility for this to be traceable to individuals. The personalisation of information; the recording of that aspect of our lives (e.g. shopping habits and preferences) by organizations such as online retailers, comes as something of an undesired realisation for Fatima. It is not a complete revelation, as she states an understanding that information is transferred during internet activity (e.g. social networking), but the broader lack of awareness regarding how far such information can be distributed introduces a new level to her understanding. Through the recording and storage of personal information new practices of agency emerge that involve technology taking a more active role. Information recording and storage is run by technology, and awareness of this comes a concern for Fatima.

Once information is disclosed agency leaves her and enters the technological realm. Fatima's information becomes the latest addition to a technological unconscious whose operation is largely unknown. Its mere presence can act as anxiety provoking, eliciting a fearful response.

In the extract the movement of information into unpredictable spaces is framed as human. Fatima refers to concern regarding *who* such information will be passed on to, not *what*. Despite agency flowing from human to technology through the disclosure of information, Fatima's concern is framed as agency transferring *through* technology to another person or people, which draws on a traditional model of agency as a human facet. Anthropomorphism is a well-known cultural tool for representing technological knowledge (Bennett 2010). For Fatima, her sense of self at that moment is felt to be under threat by the capture of information. If information was benign, meaningless, this may be less of an issue, but for Fatima this is 'scary' because it links back to *identity*, a central pillar of self. The transformation of agency over subjectivity into the abyss of technology is a concern for Fatima. The idea that potentially some control over her can be gained by 'persons unknown' is something she needs to address when realising her information is stored. The concern is defined as a fear that in using technology she opens herself up to the possibility of making connections with people she does not know, who can then gain access to her (which could be due to the information being dealt with in contexts it was not meant to be). The ownership of subjectivity becomes up for grabs at this point. Connections through technology potentially recalibrate subjectivity. Moreover, control over connections is deemed difficult. Once a connection is made, which for Fatima is expressed as occurring through Facebook, they can multiply and control is lost. Computer technology is so fertile that once information is released it can multiply through the speed of movement across networks of distributed agency.

Technological knowing of the self – shaping the future

The previous section demonstrated what awareness of the role of information technologies in capturing and storing personal information can mean for people. In this following extract an example of how personal information can subsequently be put to use by technology in the form of targeted advertising is explored. Of particular interest is how information technologies can act as a potential shaping force on life through using information derived from past internet activity. The extract features Michelle talking about experiences with online shopping and targeted advertising:

> Extract 3
> M: I had an experience recently where I was researching, looking for something I wanted to buy, for Christmas present I think, and all of a

sudden I was on email and all these adverts started popping up, from the companies that I'd looked at and even companies that I hadn't looked at it with products on; I think I was looking for a coat or something and all these (laughs) there were pop ups started coming up from M&S and House of Fraser with all these coats and I thought 'how did you know I was looking at coats?' <yeah> and I found that quite frightening because I felt like I was being watched <mmm> even though I know it's just a computerised system and I don't know the technicalities of it but somehow somebody's just scan it some system   scanning what's going on I don't know if it's linked to email addresses or just (2) I don't know what it's linked to… (lines 387–397).

In this extract Michelle (aged 38) narrates an account in which the software algorithms of online retailers operate as agentic practices of attempting to organise her life though targeted advertising. The recording and storage of information derived from earlier online browsing is not visible to Michelle; she cannot *see* the information that is stored. Her awareness of its existence comes through the later pop up adverts. This becomes an agentic force of transformation that shifts into and through the technological realm. It is both embodied and virtual; the former in the initial browsing and the latter on entry to the technological realm. Its form is not static though, as we see attempts to shape embodied life emerge through the later pop-up adverts for coats (which if bought and worn would be embodied).

It is the agentic practice of targeted advertising that comes to act as a problem for Michelle. Firstly in terms of its existence ("I found that quite frightening because I felt like I was being watched"), and secondly due to not knowing how it works ("I don't know what it's linked to"). Expressing knowledge of the process of information being recorded and stored in the technological realm of computer databases involves agency as a marker of displeasure and concern. It is not just annoyance at experiencing pop up adverts, but a deeper disruption and challenge to self, through the feeling of being surveilled by some*thing*. Even though Michelle is aware that this is unlikely to be a person ("I know it's just a computerised system"), the feeling is one of being watched by an *other*. Societal referents for such feelings often involve other people, e.g. being watched through visual surveillance (e.g. CCTV cameras). An attempt to lessen this anxiety is seen when Michelle states she knows she is not being watched by another person, and yet the alternative proves to also be an anxiety provoking option as it involves trying to make sense of the operation of technological agency. Whilst Michelle can lessen the concern about being surveilled by another person through expressing recognition that "it's just a computerised system," the incomprehensibility of that system raises alternative concerns. Latour (2005) talks about agency needing to be characterised through *figuration*, the process of giving it form. This can be anthropomorphic, which is a well-known strategy of attempting to make sense of computer

systems (e.g. Dennett 1971). Michelle moves away from this possibility by demarcating being watched by another human and the notion that the recording, storage and use of personal information is operated by computer systems. Given their lack of understanding of how the process of 'tracking' works, the process of figuration is disrupted.

Further detail of Michelle's response to this can be seen in the following extract:

> Extract 4
> I was on Google and all these pop ups started coming up or maybe I was on Kelkoo or something, a comparison site <ok> and all these pop ups just came up you know and it was literally everything I'd been looking at and it wasn't 'you've been looking at it' it was just advertising but it was the first time I'd experienced anything like that and it reminded me of the film minority report <ok> when he walks into a shopping mall and suddenly it's 'hello can't remember what his name is <mmm> John Smith last time you were here you bought three pairs of jeans'….. that sort of thing is just a bit full on isn't it? (laughter) and if that's the way it's heading, but that's what it made me think of <yeah> very exaggerated it was the same thing but that was a very exaggerated form of it <mmm> but that is really sort of that would be going too far and is **incredibly** intrusive to be bombarded with you bought this last time ooh maybe I want to buy some more of those and it's bordering on becoming a bit manipulative <right> ….. it's just my my reaction to those pop ups coming up was, that's scary because somebody or something somewhere knows what I've been doing for the last hour <yeah> and I find that scary, threatening is probably the wrong word just, it's probably scary because I didn't know how it worked and I wasn't aware that's it's out there and I suppose it's one of those things that again I just become used to like when you see surveillance cameras around just become used to the fact that they're there and that's how the world is going (lines 410–446).

The extract above demonstrates some further concern and confusion regarding attempting to make sense or know how the process of information capture, storage and use works. The software algorithms underlying targeted advertising act to try to shape Michelle's future life. Her experience manifests as a digitally mediated self, the relational production of bodies and information. It then acts as a force on activity through attempting to shape later life (Bogard 1996). Michelle's use of the term 'brainwashing' is noteworthy as it alludes to technology as insidious; entering and taking over one's internal psychological space. It is as if through experiencing targeted advertising Michelle is exposed to the potential of technology becoming the means by which to think, or perhaps render thought redundant (as noted by Turkle's 2005 concept of 'thought prosthetics'). Who needs to think if technology can direct activity? Although only referring to one part of life, namely shopping, Michelle expresses concern

in a wider sense, in terms of technology becoming a force across other areas of life ("that's how the world is going").

The above examples demonstrate ways that information flows across networks of human and technology in agentic practices for shaping life and producing digitally mediated selves. Michelle's experiences are the relational product of embodied and technological activity. Target advertising of similar items to those previously purchased/browsed shows how information in internet activity is constantly subject to change. The original encounters (e.g. browsing for a coat on an online retailer's website) were made up of communicating potential preferences for coats. This information is then used by the computer database to link to related items it 'thinks' the consumers may want. Here, 'thinking' is technological, not human. From Michelle's perspective this is a concern, because it infers a form of surveillance, and also as it insinuates some form of attempt to organise life. Preference and desires are usually only known by individuals themselves (unless willingly shared with others), so recognizing that technologies develop knowledge of these, and use such information, is a new challenge. What becomes interesting at this stage are the possible effects this has on people's thinking and activity, how it *feeds back* into everyday living.

Thinking surveillantly

As Thift (2004, 2005) notes, the idea that technologies act as a shaping force on our social environments in ways we are not wholly aware of resonates with the reality of living in societies of information. The previous two sections provided examples of processes of becoming aware of technologies acting as forms of information surveillance, and the potential psychological effects therein, namely feeling that our interior psychological space, full of thoughts, desires, prejudices, are coming to be *known* by information technologies. In this final section attention is drawn towards how processes under threat of externalization come to be re-internalised into forms of *thinking surveillantly*.

> Extract 5
> R: Ah internet has changed everything completely the way data's been collected and kept and stored erm <has that shaped your attitude at all?> Just me being aware that my data is being collected from different measures or different things I do that goes through the world wide web already make me a bit more conscious about how much data I give away about myself <ok, right> you know. I know people collect data from all different sources so that has always made me to be a bit more cautious about what I do and how much data about me that I put through the internet or through any other modern technology we use these days <I see> absolutely…. (lines 230–237).

In this section with Roger (aged 40) a mode of activity is seen to emerge, shaped by consciousness of the storage of personal information by online technology (the internet). In Michelle's extract technologies were framed in terms of *extracting* people's inner psychological activity and storing and using this. For Michelle, this was akin to a form of brainwashing, which resonates with the idea of technologies taking on some of the activities traditionally seen as operating as internal psychological phenomena (e.g. cognition). With Roger, part of a *process* is seen in which, through consciousness dawning of the extent of potential surveillance of information, a new mode of activity is formed. This demonstrates how subjectivity and technology are produced as fluid processes, shifting in the specific emergence as situational happenings. Roger's extract highlights a mode of *thinking surveillantly*, shaped by consciousness of the surveillant workings of online technologies whose modus operandi is to continually harvest information provided by people. The caution Roger mentions becomes a form of subjectivity, manifest as his behaviour of using the internet with an ever present wariness regarding the disclosure of personal information ("a bit more conscious about how much data I give away about myself"). This process is framed as the internalizing of mode of operating of the externalized force of technology. It is not just a reaction, as this would to set up individual action and information technology as unrelated entities. It is better understood as a *part of a process* of subjectivity production in the form of a digitally mediated self. Roger's internet activity is shaped by the operation and organization of online technologies reliant on information. Their mode of activity (e.g. continually recording information) becomes a *way of being* for him, he starts to live his life in anticipation of being under the watchful gaze of the internet. He begins to *think* and *act* surveillantly. His life is shaped by awareness of the surveillance of his information.

Conclusions

This paper has offered empirical analysis of productions of subjectivity in the form of digitally mediated selves in contemporary information societies. The aim has been to highlight ways that technologies, as surveillers of information, are acting as agentic forces over the constitution of individuals' lives. We are not suggesting a form of technological determinism through stating the information technologies under focus are all powerful (Lyon 2002). Rather, the aim has been to analyse the kinds of experiences that can emerge at the interface of bodies and information technologies. Our analysis demonstrated several ways in which information becomes a key part of agentic practices that feed on information in attempting to shape and organise life. Digitally mediated selves emerge against the backdrop of a technological unconscious made up of the widespread embeddedness of information technologies in modern societies. The

precise workings of the software algorithms behind information technologies (e.g. search engines) are not widely known and understood. With our participants we saw practices based on a certain level of ignorance, prior to becoming aware of the potential ubiquity of information capture and storage, which is not in itself always a problem, but concern can emerge when the presence of information as an agentic force is experienced (e.g. in the case of targeted advertising).

Subjectivity is conceptualized as the product of bodies, information and technology, and the distribution of agency across these realms. The personalisation of technological activity such as targeted advertising operates in a way much 'closer' to individuals through its ability to gather personal information. This can bring benefits, such as easy access to goods and services, but can also produce wariness and concern, through the presence of information technologies seeming to *know* us. It is through things such as targeted advertising that awareness of the existence and workings of societies of information (Thrift's *technological unconscious*) can emerge. One of the key issues is trying to make sense of and reconcile ourselves to being *known* by computers, when knowledge of their precise workings is largely unknown (e.g. Google's algorithms). Moreover, this technological knowing takes place through the informationalisation of factors considered key to notions of self, such as identity. As such, these processes and states traditionally classified as internal psychological phenomena become externalised through the role of information technologies as agentic forces. Agency and identity, key stalwarts of long-standing understandings of what constitutes humanity, become, to a lesser or greater degree, technological formations. The participants discussed information technologies as a threat to one's *inner self*, which no longer can be relied upon to be private. This is not to suggest people's desires, thoughts, prejudices become public, as it is technologies that surveil them post storage and use, not people. Nevertheless a process of externalization is underway, whose mode of operation subsequently becomes internalized in the production of surveillant modes of thinking and action. This was seen in the cautious mode of being Roger enacted through awareness of the extent of storage of his information.

There are methods of attempting to resist recording of personal information by information technologies of course, such as deleting the software cookies. However, few of our participants mentioned doing this, or awareness of how it could be done. Instead we saw examples of experiences produced at the joining of bodies and technology (on the same 'plane' (Lash 2002)) that demonstrated the role of information technologies in agentic practices of shaping everyday life through the capture and transformative use of people's personal information. Digitally mediated selves within such systems become the product of distributed practices of agency within a system of communication in which control is not easily located or grasped. This is not a system that neatly fits previous theories of disciplinary control (i.e. Foucault), but is about

how we adapt to distributed understandings of control and agency. Deleuze's societies of control (1992) provide some grounding to these debates, but he was writing in pre-Web 2.0 times, in which the capability for attempting new forms of technologically facilitated democracy (e.g. the role of social networking in Middle East uprisings in 2011, and a series of anti-austerity protests in the UK in 2010–11) was yet to emerge. What Deleuze does offer is a turn to communication, and the role of power and agency in constituting it, as the necessary focus of attention. In this paper we saw forms of digitally mediated selves enacted in part by technology playing a constitutive role over life though factors traditionally seen as human facets (e.g. identity and agency). We have continued along the communication line that Deleuze (1992) set out on, and with societies of information promising to get bigger and stronger, the job of the social sciences is to try to keep up with these shifts and analyse the implications for everyday living.

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Transformaciniai veiksmo procesai: informacinės technologijos ir skaitmeniškai medijuojamų „aš" gamyba

Santrauka

Naujųjų medijų technologijos tampa vis svarbesne kasdienio gyvenimo sudedamąja dalimi. Šių technologijų plėtra meta naujų iššūkių esminiams individualaus „aš" aspektams – veiksmui ir tapatybei. Potencialiai šias sąvokas patikrinti įmanoma naudojantis naujomis veiksmo formomis, informacinėms technologijoms ėmus vaidinti vis didesnį vaidmenį mūsų gyvenimuose. Šiame kontekste veiksmas nėra tai, ką galima sukonkretinti ir lengvai išmatuoti arba suvokti kaip išimtinai intencionalų žmogišką veiksmą. Veiksmą reikia traktuoti kaip tai, kas tampa gyvenimą kuriančiomis praktikomis. Šias idėjas straipsnio autoriai pritaiko aptardami asmenų patirtis, susijusias su informacinėmis technologijomis. Analizuojant pusiau struktūruotus interviu su informantais iš Londono ir Jungtinės Karalystės pietryčių dalies, siekiama parodyti, kaip informacinės technologijos informaciniu veiksmu potencialiai transformuoja asmenų subjektyvumą. Informantų naudojimasis informacinėmis technologijomis yra sudėtingesnis ir turi daugiau niuansų, nei juos gali aprašyti „arba gerai, arba blogai" takoskyra. Net ir tada, kai į šias technologijas žvelgiama įtariai ar susirūpinus, jos naudojamos turint omenyje jų įsivaizduojamą naudą. Koncentruojantis į potencialų tapatybės ir subjektyvumo technologizavimą, straipsnyje teigiama: skaitmeniniu būdu medijuojamos naujos „aš" formos iškyla tada, kai kasdienius mūsų gyvenimus vis labiau apibrėžia ne mūsų kūnai, o informacija. Straipsnis baigiamas svarstymais apie iššūkius, su kuriais susiduria mūsų patirtys, ir reflekcijomis apie subjektyvumo, kurį formuoja nepaliaujamas gyvenimo informacionalizavimas, sampratas.