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Information mobility: The Behavioural Technoscape

Peters, Sue

Institute for Entrepreneurship and Enterprise Development
Lancaster University Management School
Lancaster LA1 4YX
UK

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Sue Peters
Institute of Entrepreneurship and Enterprise Development
Management School
Lancaster University

T +44 (0)1524 594653
F +44 (0)1524 594743
E s.peters@lancaster.ac.uk

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Abstract

The convergence of new and old technologies is not only changing the way we communicate but is influencing the mobility and speed of information exchange as well as the devices and users themselves. This paper will address the relationship between humans and technology (especially communication devices and the technologies which enable them to be connected) and the mobility of information between people and devices. This combination, I argue, is not separable and that humans render technology as part of the 'social' rather than part of the 'technical' in which they are normally positioned. Technologies influence behaviour and humans influence how technologies are used, this combination of technology, users and mobility of information between them, I propose, forms a behavioural 'technoscape'.

Introduction

The speed of communication and information transfer has increased exponentially in recent years. The advancement of technology has instigated this increase alongside changes in human behaviour which have adapted with the speed of information transfer via new technologies. When considering the mobility of information it is imperative therefore to look at how technology has enabled communication and information transfer whilst at the same time not overlooking the human interaction with the technology. Law notes that we live in a world that is simultaneously smaller and better linked, and at the same time more fluid (2000, p.2). Similarly, Urry argues that the instantaneity of communication, coupled with the speed of modern travel, suggests that the world is somehow smaller. PCs and planes, mobiles and modems, enable people to straddle the globe, circling it with bodies, messages, bits of information and images that pass over and beyond horizons (Urry 2000, p.5). Whilst communicative technologies are increasing in use, the are not replacing one another as some theorists had predicted; e-mails are not replacing letters, more so they are complementing each other. It would seem that there is more communication than ever but it should be noted that this does not necessarily mean that this communication is more meaningful. Certainly, it is estimated that in the UK and USA over 50% of e-mails are SPAM which costs companies upwards of $10 billion in lost productivity, and industry experts predict that by 2004 this will increase to 80% (www.forbes.com, Wearden 2003). Whilst analysts and academics argue that it is the technology which has enabled the world to become 'smaller', in this paper I will propose that the human interaction and behaviour is inextricably linked with technology and the mobility of information so should not be studied separately, moreover, the technology should not be studied without the human or 'social' element.

Disciplines such as ubiquitous communications (UbiCom), human computer interaction (HCI) and computer supported co-operative work (CSCW) all address the connectedness of technology, but the sociology of technology is remarkably devoid in such readings and research. We must therefore look at human behaviour to anticipate whether technologies will succeed and try to envisage what the technological landscape may look like both in terms of the technology and also in terms of human interaction and information exchange. Appadurai refers to technoscapes as the proliferation of technological advances, which are fluid and move across previously impervious boundaries (1996, p.34). I would like to use the notion of technoscapes to look at landscape of technology and what it enables in the context of the social. I will refer to this as the behavioural technoscape.

The shape of information as it moves through technology or interactions is interesting to observe and is often overlooked. Urry notes how sight was autonomized through new constituting objects which enabled the quantification and homogonization of the visual experience. It was the technology that allowed new objects of the visual to circulate (such as through photographs and postcards) (1999, p.4). Just as Urry comments 'sites are turned into sights' through photographs, I would like to apply this to the new phenomenon of mobile picture messaging. Mobile networks advertise picture messaging, and now even video messaging, on the premise that the person taking the picture is

somewhere exotic and sending them instantaneously to the recipient, without having to rely on the social networks such as the postal system (Law 1992). This immediacy and near- simultaneousness of information transfer is only made possible by the technology and the willingness for the user to either send or receive it. In addition, just as Urry comments that photography has contributed to the democratization of various kinds of human experience (Urry, 1999 p.4), can we see the mobile as a genuine social leveler or is the 'mobile photographer', the viewer, seen to be above, dominant and 'mastery' over a static and subordinate landscape (Urry, 1999)? I would like to create an image of information fluidity and mobility as it changes shape through points of contact through the following case.

> Claire, who is 16, is watching the third series of the interactive reality TV show *Big Brother*. She watches the scheduled programme but comments that she also has the digital channel, E4, which enables her to view 24 hour coverage of the Big Brother House. The information in this case is classed as audio and visual entertainment, a television programme. The digital channel offers her a choice of cameras through which she can view different areas in the Big Brother House. The programme is not edited into a neat scheduled programme slot as she watches live coverage of the housemates. Claire is an avid fan of *Big Brother* and when her parents tell her she cannot watch it on the main television in the living room where the digital channel is accessed, she logs on to the *Big Brother* website through the PC in the dining room. She can watch the programme through the internet but is also able to access textual information through the website. Claire has also subscribed to a SMS text message service which gives her updates of any interesting news in the Big Brother house. This information is short and textual and sometimes prompts her to look at the website or the television. If she is unable to access these media she may talk to her friends and exchange information. Claire also uses the newspaper and the radio to keep a tab on what is going on in the Big Brother House. Some of the information Claire receives and accesses is the same but it becomes mobile through the various points of contact and it changes shape according the device and technology it is being accessed through.[1]

It is interesting that Claire is very adept at exploiting the media available to her at any given time to access the information she wants. At each point of contact or interaction the information Claire accesses and uses changes shape and meaning. The devices also influence how Claire 'consumes' the information and also influence how physically mobile she can be. The underlying theme in this paper will be the mobility of devices and information, content between them and in isolation, and the influence this has on the mobility of the user (and vice versa). In short I will concentrate on the mobility of information as enabled not only by technology but by user behaviour. I will focus on this 'social' aspect to argue that behaviour needs to adapt to use the technology in order to make information mobile. The underlying commonality when looking at information in terms of mobility is that it is mediated through interaction[s] - whether human (social) or machine (technical). Law suggests that the material world links the two. Almost all of

[1] This observation was part of my research at Teleconomy, see Peters, S (2002a)

our interactions with other people are mediated through objects of one kind or another: 'For instance, I speak to you through a text, even though we will probably never meet. And to do that, I am tapping away at a computer keyboard. At any rate, our communication with one another is mediated by a network of objects – the computer, the paper, the printing press'. This is also mediated by networks of objects-and-people which participate in the social (Law, 1992, p.2). I would therefore like to position information and technology as both within the social and the technical, it is inextricably both, as are our uses of it.

What is mobility?

Mobility has become an increasingly important issue in relation to social as well as urban contexts (Albertson, 2001, p.1). Mobility is used by theorists to talk about the physical movement of people, often in the context of urban mobility, (Cameron et al 2003), to theorise transport (Kaplan 1996), the city and spatialities (Graham 2002 and Mei-Po and Kwan 2003) and human geography (Cresswell 2003). Even when we talk about mobile technologies, it is in the context of the user being mobile: mobile operators even advertise the 'anytime, anywhere' connection (Green and Harvey 1999). One of the most common questions asked on a mobile is, 'where are you?' (Nicola Green 2000). However, with mobile phone use increasingly being conducted in the comfort of the home, we can't make assumptions that the mobile user is in fact mobile (Peters The Mobile effect 2002b, p. 41). Nevertheless, mobile technologies have undoubtedly allowed for (and prompted) a greater perceived and real mobility. It is predicted that by 2004 nearly 89% of the UK adult population will have a mobile phone (Wireless World Forum 2003). Mobile phones have influenced our patterns of mobility and patterns of mobility influence mobile phone use.

Mobility is now central to the way in which we live in an increasingly 'networked society'. New technologies are beginning to question not only the role of mobility but also of connectedness. But what does it mean to be both mobile and connected? The answer lies in the connection between mobility and the information reception and transmission which allows the user and technology to be mobile. Technology has been used in this way to engage mobility and connectivity by political activists. The fuel strikes in 2000, for example, could not have gathered so much support without the medium of text messaging which enabled thousands of people to become mobile to block the distribution of fuel at strategic points.

A more understated example of human agency being enabled by technology, specifically the mobile and text messaging, can be found in a demonstration in 2001 outside Citibank in the Philippines. According to LeMonde (February 2001), it was [sic] the mobile message which was instantly forwarded that allowed enough demonstrators to gather and block access to Citibank where Joseph Estrada was believed to have deposited tens of millions of francs, the product of corruption. The actual SMS message read:

> B AT CTIBANK B4 9. ERAP LAWYRS PLANNING
> TO WDRAW $30M. WE HAVE TO STOP DIS.

This point of action was enabled by the mobile and the slightly privileged access of the device. Such social action is positive, indeed Giddens may refer to such 'clever people' reflexively constructing their identity (both individually and collectively) (Giddens 1991).

Technology is influencing the way we communicate and the way in which we can be mobile, just as human behaviour is influencing the way in which technology is used as part of the social. This combination may even require a need to re-examine what is meant by proximity, distance, presence and mobility (Green 2002, p.282).

What is technology?

When referring to technology I want to incorporate devices, machines and artifacts (e.g. computers, mobile phones, television sets) and the tools that enable them to be connected (e.g. the software, fiber optic cables, servers, the internet, wireless networks and fixed line cables). When technology is studied it is often separated from the social. I will argue that it is part of the social as it is connected by humans and is part of a larger network which uses both the social and the technical, such as the postal system (Law 1992).

Firstly, I would like to concentrate on the invisibility of the technology because it is this invisibility, I feel, which is so appealing to the user. For example, when we send an e-mail successfully, we are not concerned with the wires, cable and software which allows this to happen, in fact we are really only made aware of the technology when it doesn't work. In Hughes' et al ethnographic studies of the workplace the cashiers' interaction with the technology and with their customers renders the technology 'invisible' (Hughes et al, 1998, p2). According to Hughes et al the competent operative must routinely 'weave' use of the technology into the flow of the interaction with customers such that the relevant expertise and skill is made visible (Hughes, 1998, p.3), thus making the technology invisible. My research has also shown that with regards to the mobile phone, many users (particularly younger users) actually see the phone as a prosthesis, an extension of themselves (Hulme and Peters 2001). In this sense the technology becomes part of the self and is rendered invisible, it has become part of our bodies, and therefore of ourselves.

Whilst these technologies may be invisible to the user it is interesting to look at the effect they are having on the physical environment. Technology is influencing the physicality of cities. For example, Graham notes that the latest information technologies, combined with advanced logistics management techniques, leading distribution hubs for road, rail, sea, and air logistics are emerging as mini-cities in their own right [sic] (2002, p. 3). Graham notes that the explosive growth of the internet brings with it digitally-connected Internet and electronic transaction facilities. Such spaces, he says, are projected to double every year for the next ten years. Although the technology may be invisible to us, information we send and access does physically need to be transported (2002). I will turn to Graham's three types of space he uses within his analysis of E-commerce spaces and contemporary metropolis in order to acknowledge the physicality of the technology

through which virtual information (or internet traffic) is made mobile. Firstly, against the rhetoric that the internet is 'anti-spatial', are inter-urban fibre optic trunk lines. In the US the edges of major global city cores are being equipped with anonymous, windowless buildings that house the computer and telecommunications equipment for the internet industry. Secondly, there are warehouses, or automated spaces, which are close to major rail and highway hubs that are designed to serve national and international markets for internet sold goods. This physical, hidden support, storage, and transaction-processing systems for virtually-sold goods are likely to become ever-more important examples of urban space. And, thirdly, isolated, ultra secure spaces are being configured as spaces for remotely housing the computer data storage operations. Such spaces are being located in disused sea forts and oil rigs or offshore small island states (Graham, 2002, p.6). Graham concludes that cities cannot be programmed like computers; physical and socio-technical boundaries remain porous and open to contestation.

Technology Adoption and Use

Before I address the complex relationship between technology, users, and the mobility of information, I want to first spend some time exploring the adoption of technology and the access required for humans to even use it. This will provide a valuable backcloth in order to look at the technological and social or behavioural technoscape in terms of communication and the sharing of information.

Sometimes consumers do not use new technologies in the way that the manufacturers or content providers intend (Peters, 2003). The use is sometimes subverted which in turn creates new uses. We can see this in the use of SMS text messaging which was originally designed as a business application typically for use by salespeople. However, teenagers quickly adopted this clumsy form of communication and its popularity spread. In turn, adults also started to adopt text messaging, certainly, adult users identified their adolescent/teenage children as an important influence in their decision to adopt a mobile phone (Peters 2002b). Not only is it becoming a common form of communication, there are now 1.4 billion text messages sent in the UK alone each month (www.brainstorm.com), but it is now beginning to infiltrate the business sector as a form of communication with customers. This subversion has allowed the technology to be tested by consumers and adapt their behaviour naturally, and now the consumers are primed to communicate with companies via this medium. If companies had tried to communicate with customers through SMS before this behavioural shift, the concept would have been a non-starter.

Mistakes have been made when technology does not match behaviour, for example internet access via WAP on mobile phones asked too much of the user behaviourally and it failed. Consumers and users need to be comfortable with the technology but as users adjust to the new technologies available on the mobile so these concerns will diminish. Mobile operators will ensure that consumers want to change their behaviour when 3G comes into fruition due to the sheer amount of money invested in the licenses. 3G will bring with it video streaming but only after the evolutionary path and learning curve of SMS and MMS will we even be able to contemplate using the mobile in such a way.

Similarly, behaviour is changing with the way the internet is used. The dot.com frenzy asked too much of behaviour and unsurprisingly, the dot.com bubble burst. Major companies seemed to forget the basics of customer relationship rules and branding and asked us to shift our relationship into a lonely, unpopulated virtual world which we were not accustomed to (especially not for shopping). In addition the big bluechip companies branded themselves differently using separate online brands which didn't have the affect they had hoped for, consumers didn't trust these brands in the same way as they did the high street names. Instead consumers were asked to change they shopped and the speed of this was too quick to allow for a behavioural shift. Whilst technology may not match behaviour there are also limits to adaptation. It is important therefore to note that regardless of the technology, our behaviour has to adapt, albeit at a slower pace (Peters 2002b). Technology will not be adopted and used if it asks too much of us behaviourally. However, we can see a certain pattern emerging whereby the technology was created (for example the combination between PC, internet and internet only shops) and the concept largely failed. By 2001 it was realised that change would take much longer to occur, that the laws of economics were not suspended and businesses needed profits to survive (Taylor 2003, p.51). However, behaviour did adapt and a new form of the concept emerged (in this instance a combination of bricks and clicks, i.e. shops with an offline presence and a website) and internet shopping is now an important and increasing part of the economy.

It is a mistake to expect that new technological devices will - or indeed can - be adopted quickly and without a period of time for reflection, adjustment and adaptation to new routines. 'We assimilate new experiences by placing them in the context of a familiar, reliable construction of reality. This structure in turn rests not only on the regularity of events themselves, but on the continuity of their meaning' (Marris, 1974, p. 6). New technologies have to have something people want: for example, interactive television shopping has not caught on with the mainstream public but may have a particular attraction for families with young children who are more restricted than families with older children or empty nesters. Many families with young children expressed a desire to use interactive television for basic shopping needs. Restrictions on their mobility and independence through having young children were noticeable, and interactive television was seen as a quick and easy solution. This was particularly prevalent for the cable user who wanted to be able to shop whilst also not disturbing the children's viewing through split screens, i.e. to use interactive television so that both needs were satisfied (Peters 2001).

Availability and Mobility of the user

In order for technology to be adopted to allow the mobility of people and information, the user has to have access to it. This is not just in the physical sense, I want to also think about access in terms of whether the user has the need or inclination to use it (motivation), whether they have the knowledge or skill to be able to use it (education), whether they can afford to buy / use it (economic), and whether they actually have the time to use it (temporal). Time is an integral element of individual accessibility. Access to ICTs may be restricted to certain times of the day or week such as while at work or when public libraries are open (Mei-Po and Kwan 2003, p. 345 -346). Once access has been achieved the technology needs to reach critical mass and in turn user behaviour will gradually evolve (Peters 2002b). In relation to mobility, conventional accessibility measures take a static, timeless view of mobility and accessibility, which denies the ways in which behaviour, activity patterns, and even population compositions varies by time of the day (Mei-Po and Kwan 2003, p. 346). In this sense we need to think about not only access to the technologies as examined but also the accessibility of the user.

Having a mobile in theory means that there is the option of constant availability. Technologies such as GPRS and 3G bring with them an always on connection. In my research on media streaming, the under 25 year olds researched were willing to be 'contactable' and always available (Hulme and Peters 2001). They appear to live amongst an environment of quite consciously created noise and images. In many cases these images and noises run together, e.g. the CD or radio plays and the television is on simultaneously. From this 'stream' of media they pick out items of interest. In other words they are constantly available for persuasion or contact. This availability contrasts markedly with older groups that tend to be less available and more deliberate or purposeful in their usage. In short the 18-25 group looked to access media content or 'items' from amongst a flow which was ever present (they simply turn devices on to break up silences). Individual 'items' tended to emerge from this flow. We should not be critical of this mode of behaviour, rather this phenomenon indicates a behavioural adaptation designed to gain maximum benefit for minimum effort from our media saturated lives.

Mobility of information

I will take a broad definition of information and would like to comment that it can come in a range of shapes and media. Law notes that information is akin to knowledge which is always embodied in a variety of material forms such as talk, presentations or appearing in paper, preprints or patent (1992, p.2). Information is made mobile through interactions such as through a conversation between two people. These interactions can occur between people and devices (telephone conversations) and also between devices themselves (e-mails). Law and Mol comment on their own actions of writing a paper. They suggest that as they write, it is in the personal computer, there and nowhere else. This they note is *immutably immobile.* However, as I had accessed the paper through the internet and had printed it off, I was reading it in a different location. This, they comment, has rendered it regional but at the same time it has also been transported

through a network as an *immutable mobile.* Additionally, I had taken the paper home to read, an act which Law and Mol would suggest has subtly reconfigured the reading and meaning, that it is, in addition, a *mutable mobile* (2000, p.8). I would like to argue that the paper itself always had the potential of being mobile. Whether mutably or immutably does not concern me in this context, what I am more interested in is the larger structure or network made up of the technologies, the users of technologies and the behaviours, all of which combined, enable the mobility of the paper - the mobility of information. This combination, I feel, cannot therefore be looked at in isolation and will be explored further below.

Technologies can also hinder the mobility of information. In my recent research looking at interactive whiteboards in schools it has become apparent that many teachers are struggling with the mobility of information. For example, if they use a laptop at home to prepare a lesson, quite often the content is too memory intensive to save onto a floppy disk. Many teachers commented that they did not have a CD burner on their laptops and were also unable to e-mail the file. The information then becomes immobile, *mutably immobile* even, which is no use to the teacher or the class they had prepared it for.

In contrast the mobility of information in the workplace is much larger and more complex. There are almost two extremes which are growing. Firstly, the increase of offshore service migration is whereby contact centres are located in areas such as Bangalore (incidentally there are now schools in India which specialise in training call centre agents to speak with regional British accents to portray the geographical location of the contact centre as physically being within Britain). Secondly, the internet is moving toward more local use whereby local shops have their own websites. I do not want to explore this in too much detail as this is too big an area to address here. More so I want to highlight the complexity of the mobility of information in the workplace as the customer has more choice and greater access through many different channels and mediums to the companies. These companies have an increasing task of tracking customer information and locating them through these channels.

Relationship between, technology, users and information

Technology is often studied in the absence of human intervention or, where it is studied in relation to the user, it is used to inform design (see CHI or CSCW, ubiquitous communications work), or it is studied in close combination with the human such as cybernetics or the blurring of humans and non-humans in the form of cyborgs. So where is the study of the connection or relationship between the human / user and the technology / machine positioned? Technology studies is interdisciplinary and we may need to adopt a post-disciplinary approach and even make ourselves intellectually nomadic (Law, 2000, p1). Law proposes that because there is no single answer or grand narrative any way of imagining technologies is partial and there are partial answers (Law 2000, p.2). One might take this further, perhaps by suggesting one way to study the technology, and try at least to make the study more coherent and less partial, is to look at the users and the behaviour they bring to the technologies.

Nicola Green comments that sociologists are only just beginning to explore what the notion of 'mobility' might mean when mediated through computing and communication technologies (Green 2002 p.281). As humans we use technology daily, quite often it is used to communicate with other humans (telephone, e-mail, text messaging etc). However, technology can also be used to facilitate the communication between humans and devices, for example checking a bank balance through online banking. Technology can also be used to facilitate the communication between devices. We may not immediately think about devices talking to one another as this form of interaction is normally hidden (the same banking website will be accessing information from different machines and servers). Whilst I do not want to focus on the latter form of communication it is interesting to note that when machines do interact with one another there will have been a form of human intervention somewhere in the chain of communication. It is hard to separate the user from the device and the technology which enables an interaction to happen. This simple observation is powerful enough to suggest that technology and users are inextricably linked and cannot be studied in isolation. To separate and study them in singular, I feel, would overlook the richer fabric of the relationship and use which allow information to be mobile. Instead they are fundamental to communication and the exchange of information.

Law touches upon the *social construction of technology* (SCOT) as an approach which distinguishes between people and societies and the world of artifacts. This, he says, means that the social is distinguishable from the technical which is necessary as we already know there is a division between the two. I would like to propose that whilst they may be separate, in looking at the process of technology use the two become inseparable. Whereas Law comments that these objects are understood as being shaped by humans he also adds that the way in which people and objects interact do so in ways that are complex (2000, p.3). Additionally, these objects also shape humans in terms of their behaviour. Indeed their physicality shapes they way we sit when typing on a keyboard, the way we physically use a mobile phone and also the behaviours and social practices of the functions we perform on devices such as e-mail protocol and text messaging. Law notes that humans are humans and non-humans are non-humans, even if they live together (2000, p.3). Similarly, persons and artifacts do not appear to constitute each other *in the same way* Suchman – (2000, p. 6).This means that the social is distinguishable, in principle, from the technical (Law 2000, p.3). I believe that when studying the behaviour of technology use this distinction is beginning to blur in a way that is more complex than a straightforward 'relationship'. Law argues that the reductionist versions divide the human and the technical into two separate heaps and assume that one drives the other (1992,p.3). Suchman suggests we need to develop a discourse that recognizes the deep mutual constitution of humans and artifacts without losing their particularities (Suchman 2000, p.4). Using Laws analysis on the practices of representation to look at the relationship of humans and artifacts (in this case machines), Suchman suggest that the process of reflexive constitution is deleted in the referent pair, each member of the pair being treated as independent of the other (2000, p.4*)*. Actor-network theory does not accept this reducitonism. It says that there is no reason to assume, a priori, that either objects or people in general determine the character of social change or stability; in particular cases, social relations may shape machines, or machines

relations shape their social counterparts, but usually matters are more complex. (Law 1992, p.3). Suchman addresses the premise that humans and artifacts are mutually constituted. She notes that as technoscience studies have shown, mutual constitutions of humans and artifacts do not occur in any singular time and place, nor do they create fixed human / artifact relations (2000, p.6). This mutual constitution has to be then, mobile, by nature.

Suchman is concerned with finding an ontology that can tie humans and non humans together without erasing the culturally and historically constituted differences among them. Those differences include the fact that persons just are those 'actants' that conceive and initiate technological projects, and configure material-semiotic networks, however much we may be simultaneously interpellated into and through them (2000, p.6).

Whereas the social sciences may centre on 'the social', Suchman notes that technology and engineering centre on nature and technology and separate out 'the social'. In this context the centred machine creates its marginalized human Others (2000). Suchman continues to suggest the way forward is not to simply recentre the social. More so the problem lies in the constitution of the sciences as either human *or* natural, social *or* technological. Suchman then is concerned that far from recognizing the deep interrelations of humans and artifacts, contemporary discourses of machines agency simply shift the site of agency from people to their machine progeny. She argues for a certain restoration of the boundaries between humans and machines and, which I wholeheartedly agree with, to restore authorship and thereby accountability to our relations with artifacts (2000, p.7). Similarly, Law states that all entities achieve their significance by being in relation to other entities. This means that ANT entities, things, people, are not fixed. Nothing that enters into relations has fixed significance or attributes in and of itself. Instead, the attributes of any particular element in the system, any particular node in the network are entirely defined in relation to other elements in the system, to other nodes in the network (Law 2000,p. 3).

Summary: The Behavioural Technoscape

In this paper I have highlighted the complex relationship between technology and users in the context of studying the mobility of information. I have proposed that technology is part of the social and that the distinction between human and non human, or social and technical, should not be contested as a dualism but should be studied together, as one. I feel that the study of the user is often absent from the study of technology but given that the user influences the use of the technology and in turn the technology influences user behaviour, it is imperative that the social sciences and studies of technology must consider the user (and therefore their behaviour) as a central component of technology.

However, as I have argued, the user needs to be able to have access to the technology in terms of whether the user has the need or inclination to use it (motivation), whether they have the knowledge or skill to be able to use it (education), whether they can afford to buy / use it (economic) and whether they actually have the time to use it (temporal). It is

important to note that behaviour and the relationship with the technology will be different for each (and different combinations of) access.

Information is made mobile through, and by, this relationship of user and technology and the social and technical networks which are part and parcel of it. New technologies allow for greater mobility and connectivity but information mobility is only made possible by interventions from users. It is this behavioural technoscape which can usefully be studied to anticipate the future of technology use and behaviour which can be used pragmatically, for example, to inform design or to propose what future spatialities may look like. Information mobility can influence the real world and our behaviour within it.

The behavioural technoscape needs further research to ascertain its application beyond theory. What is clear however, is that technology will always move at a much faster pace than behaviour can or will adapt. There is then a fragile balance between pushing the frontiers of technology and asking too much of us behaviorally. Whilst the balance continues to find its way forward, one thing we can be sure of the is the inextricability of the user and the technology or as Yeates has written, the dancer and the dance:

> O chestnut tree, great-rooted blossomer,
> Are you the leaf, the blossom or the bole?
> O body swayed to music, O brightening glance,
> How can we know the dancer from the dance?
>
> (Among School Children)

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