

Securing the Neurocity

David Murakami Wood warns that cities could be transformed beyond recognition by hi-tech surveillance if protocols are not put in place.

The most highly developed cities are on the brink of an enormous and potentially fundamental transformation. Described as 'pervasive' or 'ubiquitous computing', 'ubiquitous media', or 'ambient intelligence', the 'combining of virtual and material worlds', or the emergence of an 'Internet of things', this transformation provides a basic neural infrastructure for the city in addition to the physical infrastructures of transport, sewerage, electricity and so on, with which we are familiar (Graham and Murakami Wood, 2006). Urban designer, Dana Cuff argues that these systems: 'challenge some of our fundamental ideas about the subjectivity, visibility, space, and the distinction between public and private... [and] reformulate our conception of the civic realm' (43). The Neurocity is coming.

Surveillance and the Neurocity

The UK, with more than 4.2 million CCTV cameras, has become a 'model' for the implementation of urban security by other nation states. Britain was particularly significant in implementing not just CCTV itself, but also new automated recognition technologies. Automatic number plate recording (ANPR) cameras were installed in the City of London in 1997, as part of a process which transformed the Square Mile into the most surveyed public space in the world (Coaffee, 2004). The ANPR technology was subsequently extended from February 2003 for use in the Congestion Charging scheme, which is now being extended nationwide with the ANPR system operational by 2008 (Norris, 2006).

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The relationship between surveillance, space and people continues to be transformed with the advance of multiple biometric technologies such as facial and iris recognition, based on software algorithms, some of which can be linked into the new digital CCTV (Intona and Wood, 2004). At the same time, the surveillance of individuals has gone hand in hand with the amassing of huge amounts of personal information in databases. This is a step-change from the world of the paper file: computer databases allow greater integration and automated algorithmic operations to be performed effectively in real-time,



Photo: Julie Grogan

Our cities could change completely with hi-tech surveillance.

and without the bodily subject necessarily knowing (Graham and Wood, 2003). Large divisions remain between real bodies, movement and behaviour, and databases. However three trends could all change these divisions very rapidly.

Firstly, the creation of personal information profiles combining different sources of data with algorithmic analysis to look for particular patterns

that might indicate a potential danger or profit opportunity which can be pre-empted, are becoming more common. The creation and connection of databases is not simply a commercial obsession but is also a key strategy of UK police forces with new databases of DNA samples (and new powers to fill them), digital facial images and more all linked through an expanded and more capable Police National Computer (PNC), potentially linked in real time to the hand-held 'tablet' PCs of officers on the streets.

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Secondly, conventional surveillance technologies are becoming more *mobile* by being combined with robotics or with remote control aviation technologies to make Unmanned Aerial Vehicles (UAVs). These have been in use by the US military for some years

and situations not necessarily linked or operating with the same rationale. Whether by multiple friendly watchers, little sisters or by Big Brothers however, we are increasingly leaving our traces for others to follow, we are increasingly known in many different

Whether by multiple friendly watchers, little sisters or by Big Brothers, we are increasingly leaving our traces for others to follow, we are increasingly known in many different and unexpected ways.

- currently the best-known example is the 'Predator' reconnaissance drone aircraft used in Iraq. However, in Los Angeles, still the laboratory for urban control, police are already experimenting with small remote controlled spy planes called 'SkySeer'. Many uses have been suggested in the UK.

Thirdly, 'pervasive computing' will allow the creation of almost invisible networked forms of automated surveillance. Already Radio-Frequency Identificaton (RFID) tags are becoming common, and are already embedded in goods, animals and most recently human volunteers (Murakami Wood 2007 forthcoming). But this is already outdated: so-called 'smart dust' has been developed in several university and corporate research laboratories, notably at Berkeley, and now marketed through Dust Networks which offers 'self-organising wireless technology' based on networks of tiny 'motes' made up of millimetre-sized packages of sensor, computing and communication devices which according to their website, will 'extend monitoring and control deeper into the physical world'.

This network of fixed or mobile devices, able to locate, communicate with each other, with people, and with databases in real time, provides the potential for the emergence of the 'Neurocity'. 'Neurocities' will work by new spatial 'rules' which, not surprisingly, resemble the highly-structured protocols (Galloway, 2004) by which distributed computer communication architectures function. However this does not offer us much protection. Haggerty and Ericson claim that the new surveillance results in the progressive 'disappearance of disappearance', with the anonymity previously afforded by the city increasingly elusive. However this trend is reinforced by the increasing use of pervasive computing and surveillance technologies for social networking and even 'whole life logging': people, and especially younger people, increasingly want to be exposed to others. This makes concepts based on rights, such as privacy, increasingly difficult to sustain as a basis for organising opposition, or even simply debate.

However, the Neurocity need not be the totalitarian society of George Orwell's Airstrip One, with one omniscient controller. Bruno Latour has described the current order as *oligoptic*, that is made up of multiple surveillant actants with very detailed specific knowledge of very confined areas. We move constantly between different highly surveyed spaces

and unexpected ways.

We need to be far more knowingly involved in shaping the protocols which will determine the room for manoeuvre we will have in the future Neurocity, otherwise we might wake to not just a surveillance society but to cities that will soon be more aware than we are.

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