

Emotions are also at play in Haverinen and Härmä's pieces. They highlight even further the extent to which the debate on new technologies desperately needs the kind of insights that anthropology, with its sensitivity to all that is culturally and politically marginal, can offer. Haverinen takes us into the world of virtual mourning and shows what is in some way obvious and in another almost disturbing—that lives lived online lead inevitably to mourning online. Again, Finnish specificities of culture and convention produce patterns of behaviour that only empirical investigation can identify, and that anthropologically informed interpretation can begin to understand—using that word both in the sense of 'making sense' of and 'being empathic'.

Finnish emotions lead to playful speculation in Härmä's theoretically intriguing contribution on how museums and galleries, in their efforts to use digital artworks as a democratizing force, might at the same time be subjecting audiences to new forms of discomfort. Not to physical discomfort, exactly, but rather to the embarrassment that can follow if visitors feel themselves to be too much at the centre of a work and, like generations of self-conscious consumers of the arts before them, unsure how to behave.

These examples of applying anthropological insight to techno-social change in Finland demonstrate clearly the value of the exercise. Until now, such research has been exceptional rather than routine. We hope that in time, findings from similar work will become taken-for-granted—indeed ubiquitous—elements of the technological discourses and projects which are shaping everyday lives in Finland and elsewhere with such vigour and such consequence.

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IN THE FIELD OF THE UBIQUITOUS CITY

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The technologized urban environment has fundamental effects on us: it modifies our understanding of time, distance and privacy. For example, by talking on a mobile phone with someone who is waiting for you, you are already with that person. This means that the concepts of communality and communication need rethinking to fully understand the existing and emerging effects of technological development in socio-cultural reality. What

does it mean in a space full of ubiquitous technology to ‘be with somebody’, or to ‘be present’? Clearly, a person forms a socially constructed physical and virtual hybrid space by using communication technology, but it should also be noted how social hierarchies and norms restrict or encourage the utilization of technology and the social interaction linked to it. Thus, technology can create new forms of sociality but, on the other hand, it can also produce new forms of separation and isolation related to gender, age, education and social status.

Since 2009 the northern Finnish city of Oulu has been framed as a living lab, where new ‘ubiquitous technology’, like open wireless networks, is in routine use in the real environment. Ideally, the concept of a living lab refers to a user-centred research process aiming at new innovations driven by a user community or the people who will use the technologies (see e.g. Pallot et al. 2008). Though the concept comes from computer science, studies in that field could develop more robustly if they exploited methods and theories from other disciplines. That is why the computer engineers of the University of Oulu asked us anthropologists to join the multidisciplinary UBI (UrBan Interactions) Program. A good decision, since the results of recent anthropological studies point out that the appropriation of new communication technology is dependent on, and draws from, the local cultural and social context (e.g. Horst and Miller 2006; Tenhunen 2008). The UBI Anthropos-project started in March 2010, providing us with a range of possibilities: to study the planning and implementation processes of the new technologies surrounding us; to help empower citizens’ involvement in these processes; and to discuss the meanings of traditional anthropological concepts like communality, citizenship, space/place and embodiment. Other disciplines engaged in the UBI Program are information processing, architecture, marketing and industrial design. The program is an example of the Triple Helix strategy of the Oulu region, where universities, research institutes, industry and the City of Oulu are in firm cooperation (see ubioulu.fi).

The term ‘ubiquitous technology’ (also called ‘pervasive’) refers to the world of invisible devices, where technology is everywhere and in everything but has receded into the background of daily life. The original goal of its developer, Mark Weiser, is to make technology a totally pervasive assistant for people in everyday tasks (Weiser 1991.) However, there are also some very visible aspects of ubiquitous technology in Oulu, especially the large displays situated outdoors in the city centre and in indoor public spaces, like the swimming hall and library. Displays offer textual and visual information, but there is also a section for interaction—by touching the screen a user can access desired services. S/he can, for example, get information on current local events, or send a photo taken of the display as an e-mail postcard.

In our study we have a fascinating opportunity to carry out our fieldwork at the same time as new technology is being tested in, and implemented within, the urban environment. During the second pilot of the engineers’ implementation (summer 2010) we carried out participant observation in the city centre. We worked with the computer engineers who were guiding passers-by in the use of the UBI displays at the marketplace, the liveliest part of the city in summer. Together with the engineers we encouraged people to get to know the services in the display and to touch the screen. Feedback from citizens is important in the concept of living lab, in the design of both new ubiquitous technology and in its applications. Since the meanings of urban space are mainly produced in

movement, such as walking or cycling (Saarikangas 2006: 84), we also observed people's actions and motions while they used the displays on their own. We paid attention to whether they were alone or in company, whether they touched the display or just looked at it, whether they approached the display with hesitation or with determination etc. This fieldwork provided us with a good view of the ways technology users interact with each other and with the devices, but also with the engineers: the planners of the technology as they engaged with the public on the market place.

As anthropologists we paid attention to contextual factors that shape these interactions, and also to the technologies as part of social and physical settings that are important to citizens but not always obvious. The northern environment, with its sharply differentiated four seasons—from summer days full of light to cold, dark winters—is one interesting frame shaping ubiquitous technology in Oulu. Participant observation showed that the services people seem to expect of this new technology are strongly local: dining and shopping possibilities in the city centre but also, for example, maps of berry-picking areas nearby. Furthermore, people have different information needs in summer to those sought in winter: bad public transportation combined with cold winter days make people plan their visits to the centre very carefully in advance, for example. Positioning in the life cycle is also a significant context for using ubiquitous technology. The fact that UBI displays are quite large and situated in open public spaces is interesting for us: are elderly people more unwilling to use them than youngsters, or vice versa? Furthermore, in Finland we are taught not to touch objects situated in public places, in case we break them. Yet here we have displays inviting people to touch them: what kind of cultural effects might this have on citizens?

Since the biographical background of an individual is significant in the perception of urban space, including the utilisation of technology (see Caron and Caronia 2007: 61–63), the next stage of research will be life story interviews directed at the 'technological biographies' of interviewees. A life story interview intertwines space with many temporal layers. A physical space both helps and forces a narrator to remember, affecting a person's relationship to it (Saarikangas 2006: 62). For us it is intriguing to ask whether hybrid space where technology is present but ubiquitous—and where the experience of Oulu city centre can simultaneously be very local and cross over physical boundaries with the aid of technology—will work the same way in life stories.

The official aim of the UBI Program is to create 'an urban environment in which better services are being offered to the people of the city' (ubioulu.fi). In our interviews with people behind the program—research planners, representatives of the city and the funders—the interviewees state that the premise of ubiquitous Oulu is to treat all citizens equally. They are aware that, for example, teenagers are more open and enthusiastic to test new technologies and likely to be 'early adopters', but in the end their view is that all residents should benefit from ubiquitous technology.

The problem, in my opinion, is that in living-lab research the voices of these early adopters are heard disproportionately loudly. People with the capabilities to use the technology, and the words to describe their technological needs, have great impact on technologies that are aimed at everyone. Anthropology can help identify where people struggle or refrain from articulating their experiences and so create problematic biases. The living lab's starting point, how citizens can affect the design of new technologies

and applications, is excellent, however. The multi-disciplinary research team with its anthropological element can show, for the first time in Finland, not only how people are using the technology, but also explain why some people use it, while others do not, and what kind of power structures new technologies create.

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DESIGNING FINNISH MEN TAKING FOUCAULT A LITTLE FURTHER?

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The MOPO project at the University of Oulu is a multidisciplinary project concerning the physical fitness of conscription-aged men. The aims are to 1) study daily activities, such as physical training, eating and sleeping habits and use of social media and mobile technology; and 2) develop ICT-based interactive methods (games, activity monitors and models) to help encourage physical activity in young men. The academic collaborating disciplines are sports medicine, medical technology, electrical and information engineering, information studies and cultural anthropology. Genetics will contribute to the project during a later phase. Other partners are companies manufacturing sports technology and video games, and the Finnish Defence Forces.