Networked Mobilities and New Sites of Mediated Interaction

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ABSTRACT

This paper takes point of departure in an understanding of mobility as an important cultural dimension to contemporary life. The movement of objects, signs, and people constitutes material sites of networked relationships. However, as an increasing number of mobility practices are making up our everyday life experiences the movement is much more than a travel from point A to point B. The mobile experiences of the contemporary society are practices that are meaningful and normatively embedded. That is to say, mobility is seen as a cultural phenomenon shaping notions of self and other as well as the relationship to sites and places. Furthermore, an increasing number of such mobile practices are mediated by technologies of tangible and less tangible sorts. The claim in this paper is, that by reflecting upon the meaning of mobility in new mediated interaction spaces we come to test and challenge these established dichotomies as less fruitful ways of thinking. The paper concludes with a research agenda for unfolding a 'politics of visibility', engaging with the ambivalences of networked mobilities and mediated projects, and critically challenge of taken for granted interpretations of networked mobilities.

1. Introduction

This paper takes point of departure in an understanding of mobility as an important cultural dimension to contemporary life. The movement of objects, signs, and people constitutes material sites of networked relationships. However, as an increasing number of mobility practices are making up our everyday life experiences the movement is much more than a travel from point A to point B. The mobile experiences of the contemporary society are practices that are meaningful and normatively embedded. The claim in this paper is, that by reflecting upon the meaning of mobility in new mediated interaction spaces we come to test and challenge these established dichotomies as less fruitful ways of thinking.

In the creation and design of new interaction spaces applying urban technology there is a potential for conceptual critique but also for discussing mediated sites of interaction as venues for new meaningful social interaction and relationships shaping new ways of thinking about the political. Issues of democracy, multiple publics, and new mobile (electronic and material) agoras are pointing towards a critical re-interpretation of contemporary politics of space and mobility. By studying networks of mediated activities in what we might call 'semiotic rich settings' such critical potential for 'thinking mobilities' as well as 'designing for flow' is enhanced. In this paper we want to discuss two cases. In the first case, we will look into how the interactive pavilion 'NoRA' exhibited at the 2006 Architecture Biennale of Venice constitutes a performative space of mediated interaction. In the second case, 'MAUTS' we explore the meaning of mobile robots in transit spaces from the point of view of asking if such new mobile technologies can increase the mediated interaction and thus potentially challenge the mono-functional understanding of transit spaces as waiting spaces.

2. Framing networked mobilities and new sites of mediated interaction

In understanding the importance of mediation, global-local interactions, networks, and the distributions of meaning and mediated discourses new ways of thinking about mobilities are called for. In particular a critical awareness to how such technologies shape the foreground/background attention of social agents seems crucial. By studying embedded

technologies and 'ambient environments' we increase our knowledge about the over layering of the material environment with digital technologies. The presences of GPS, mediated surfaces, mobile agents (robots), RFID and other technologies that all relate to contemporary mobility practices add a different dimension to the notion of movement and constitutes new arenas and tools for identity construction and social interaction (as well as of course commercial exploitation and state control).

Analysts of the contemporary situation points to the fact that the previous obsession with the 'virtual' and cyberspace where technology took off as is was from the physical environment has come to be replaced with a beginning awareness of the importance of the location, the placement and the situated.[1] Rather than working within separate domains new media and technologies overlay the physical world of places, houses and infrastructures. Thus creating a new situation where the physical placement of social agency and the technology at hand becomes crucial. Much of the engagement with technologies in this way we find in sites of transit and mobility. As we move across cities utilizing numerous networked technologies to navigate, coordinate and facilitate our trajectories potentials for new experiences might occur in these new sites of mediated interaction. Needles to say, new means of control and power also loom within the potential of the new 'augmented spaces'[2]

In exploring 'what matters' this paper argue that it is important to understand how the networked technologies relating to contemporary urban mobility offer potentials for transgressing mobility as 'waste of time' or instrumentalism at the same time as they are power-laden and oscillates between state control and market consumerism. The challenge for a social science engaging with design is to analyse and discuss networked urban mobility as 'more than A to B'.[3] Travel can be a positive experience and we need not consider it pure cost to paraphrase Kevin Lynch.[4] Mobility is a cultural phenomenon too often just seen through the eyes of planners trying to 'fix' congestion, accidents and so-called 'environmental externalities'. Not realising that mobility is culture. Simultaneously such a discussion should try to point at the third space for meaningful social interaction mediated by networked technologies that goes beyond state control and market commercialism. Furthermore the critical dimension to this discussion is also to address the issue of 'qui bono?' As mobility is a differentiated social phenomenon new networked sites of interaction potentially favour some groups whilst it disfavours others. What really matters is how to empower people by exploring the potentials of the new mediated technologies. But being critical also means to problematise the taken for granted notion that infrastructures always host instrumental practices that they are generic 'non-places'.[5] Thinking critically about the meaning of mobility in new networked sites of interaction thus has to do with uncovering power-issues as well as with stretching the mind towards wider and more inclusive ways of comprehending everyday life mobility[6]. Here we shall argue for a 'politics of visibility' in the sense that new experiments and explorations of augmented spaces and mediated networks becomes crucial if we are discuss the pros and cons of these often 'invisible' technologies.[7]

In terms of not only *thinking mobilities* (analysis) but also *designing for flows* (intervention) it seems pertinent to explore the opportunities for transit spaces to become more than venues

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[1] Crang, M. & S. Graham "Sentient Cities. Ambient Intelligence and the politics of urban space" Information, Communication & Society vol. 10, no. 6, 2007 pp. 789-817, Manovich, L. "The poetics of augmented space" Visual Communication, vol. 5(2), 2006 pp. 219-240, McCullough, M. *Digital Ground. Architecture, Pervasive Computing, and Environmental Knowing*, Cambridge Mass.: MIT Press, 2004

[2] See Manovich, L. "The poetics of augmented space" Visual Communication, vol. 5(2), 2006 pp. 219-240

[3] Urry, J. *Mobilites,* Cambridge: Polity Press, 2007

[4] Lynch, K. *Good City Form*, Cambridge Mass.: MIT Press, 1981

[5] Augé, M. *Non-places. Introduction to an anthropology of supermodernity*, London: Verso, 1995

[6] Jensen, O. B. and T. Richardson *Making European Space. Mobility, Power and Territorial Identity*, London: Routledge, 2004

[7] Crang, M. & S. Graham "Sentient Cities. Ambient Intelligence and the politics of urban space" Information, Communication & Society, vol. 10, no. 6, 2007 pp. 789-817

for instrumental mobility practices. The issue of how to develop and design 'public domains' in these spaces and with the help of multiple layered technologies is at the forefront here. The temporality and often 'messy' character of transit spaces need to be seen as sites of interaction between multiple publics and social groups – the very definition of public domain[8]. Today's spaces of mobility are 'rooms' in which we live much of our life. Beyond that the meaning of mobility is more than circulation as it becomes a culturally significant practice. Therefore sites of mobility and infrastructures facilitating these should become sites of cultural production, enhanced experience and democratic pluralism.[9] Meeting points, exchanges and flows of communication may be commercial and less oriented towards building public spheres (like the commercial billboards alongside the urban freeway). However, this does not rule out a potential for re-thinking the relation of infrastructures to notions of the public realm. The moving urbanite engages with multiple mobile and electronic agoras during the travel. We are linked-in-motion and thus not just passively being shuffled across town. Being-on-the-move is a contemporary everyday life condition in the city and should as such be re-interpreted. Therefore we must comprehend places as sites of interaction and media flows that only becomes 'places' in so far as flows of people, ideas, symbols, goods and material either positively flow 'into' these nodes in the network, or conversely for all sorts of reasons do NOT flow into the nodes.

The new mediated spaces are unfolding between many different normative ways of engaging with the social production of mobility and interaction. Assessing whether they are socially inclusive or exclusive, environmentally sound or unsound, creative or mindless reproducing established ways of thinking, if they are liberating to yet unseen communities of practice or just cementing the established lines of power and social order is an open agenda to be explored. However, this short discussion here hopefully suggests that we should aim at establishing and analytical frame capable of addressing issues of differential mobility and power, the meaning and potential of performative urban environments, the relationship between interaction and public domains in order to relate the analytical issue of 'thinking mobilities' to the interventionist ambition of 'designing for flows'. In the next section we shall look into two short cases / projects that may open up to some of these discussions.

3. Learning from NoRA

In the first case, we will look into how the interactive pavilion 'NoRA' (Northern Research Application) build by Architecture and Design students and exhibited at the 2006 Architecture Biennale of Venice and since in Skagen and Aalborg, Denmark constitutes a performative space of mediated interaction (see figure 1 and the NoRA Web site http://www.aod.aau.dk/staff/bsth/nora/ for more information on the project). On the Biennale in Venice an area of about 35 m2 was occupied mainly as an exhibition space and with the integrated technologies activated as local generator and attractor. NoRA addresses the issues about global connection through an online condition of 5 online cameras that always are able to track the local site accessed through a webpage. The architecture of NoRA becomes the eye to the local society as it mediates the local and the global by switching the fixity and flows.

[8] Hajer, M. & A. Reijndorp *In search of New Public Domain*, Rotterdam: Nai Publishers, 2001
[9] Calabrese, L. M. "Fine Tuning. Notes from the Project", in *Mobility: A room with a view*, Houben, F. & L. M. Calabrese (eds.) Rotterdam: NAi Publishers, 2003, pp. 343-362.

Figure 1: NoRA and the 'satelites' transmitting flows to the pavilion (Photo: Bo Stjerne Thomsen)

The technologies of NoRA track the movement of people in the surrounding environment through infrared cameras and filter the local movements of people into sound and light. The changes in movements around the building are furthermore attached to three satellite units at each corner of the building each initiating sound scapes from the local surroundings. The light colours on the building are determined by the surrounding movements and coherent with the changing sound pattern. Thus NoRA is a reactive space always acting towards a changing context both according to changing light and sound from movements as well as the main soundtrack slowly adapted from location. Through the sensor technology and the interaction with the building the visitors enter a feedback loop with the urban setting establishing a temporary urban environment from the flow of local actors and maintained through live recordings. NoRA was a window into exploring different dimensions to networked mobilities and mediated interaction[10] that leads to the following issues for critical discussion and future research:

- The making of prototypes for new interactive urban artefacts and sites of interaction facilitating new public domains
- Exploring the potentials in building new mobile, plural and open platforms for social interaction mediated by technological artefacts and urban architecture

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[10] Jensen, O. B. & B. S. Thomsen "Performative Urban Environments – Increasing Media Connectivity", paper for the conference 'Media City – Media and Urban Space', Bauhaus Universität, Weimar, Germany, November 10 – 12 2006

- Explore the potential for transgressing the commercialized media scapes of urban architecture that we know in the guise of urban ads and electronic facades communicating the gospel of consumption

4. Mobile Agents in Urban Transit Spaces (MAUTS)

In the second case, MAUTS (Mobile Agents in Urban Transit Spaces) we explore the meaning of mobile robots in transit spaces from the point of view of asking if such new mobile technologies can increase the mediated interaction and thus potentially challenge the mono-functional understanding of transit spaces as mere waiting spaces. The MAUTS project has opposed to NoRA not been fully implemented and in this paper we shall only be able to reflect upon a pilot test made in December 2007 in the transit space of Kennedy Arkaden, Aalborg, Denmark. The project takes point of departure in an awareness of increasing global transportation activity and congestion has increased the time we spend in transit. Whether it is waiting in line for security checks in airports or delays due to train service interruption, most perceive transit time as unproductive, boring, but unfortunately unavoidable in contemporary urban environments. The project is set to explore if there is a potential for adding both economic value and experiences to the transit time by thinking differently about transit. Adding mobility and manipulation capacities in terms of mobile agents (robots) to urban transit spaces and allowing them to interact with humans will create new interesting spaces that are productive, educational, safe and potentially enjoyable. It is explored if urban transit spaces endowed with mobile agents may enhance traditional service functions such as guidance and provide information about the functional properties of the environment. Value may also be added by providing an experience that for example makes waiting in the line for security check enlightening. Mobile agents may provide the waiting person with educating information about destinations to be reached or even interact with the waiting person in playful and unforeseeable manner. While doing so, they may advertise services and products, or track, monitor and survey persons thereby providing mobile security information for e.g. airport spaces.

The project develops methods and technologies for the construction of cognitive mobile agents for transit spaces, able to evolve and grow their capacities in close interaction with humans in an open-ended fashion. A pilot test was made in December 2007 in the transit space of Kennedy Arkaden, Aalborg, Denmark. In this experiment we let a mobile robot dressed in Santa Claus costume (due to the fact that the experiment took place in a public shopping arcade in December and thus nicknamed 'santabot' by the research team) track and interact with people (see figure 2). Tracking was the main issue here as there is a number of difficulties in getting the robot to follow and approach people in a non-intimidating fashion. Speaking of 'interaction' hereafter is perhaps too much as Santabot is the 'dumb' first generation mobile agent in a transit space (only capable of tracing and movement). Thus one might surmise that the second generation MAUTS could be over-layered with one-way information technologies (e.g. traffic information). A third generation MAUTS could be added interactive technologies (e.g. games and interactive communication) and thus become the '*digital co-passenger*' of the future.

Figure 2: *Santabot* in interaction, Kennedy Arkaden (image from pilot study video)

From the initial stage of this project we find the following issues of relevance to a critical exploration into networked mobilities and new sites of mediated interaction:

- Explore the meaning of transit spaces and contemporary urban mobility by using mobile agents
- Challenge the existing generic an uninspiring transit spaces, but also address the issue of power (e.g. surveillance potentials related to mobile agents)
- Exploring the notion of 'mobility as culture' and that places orchestrating mobility therefore should be understood in the light of their potential for generating meaningful experiences, social interaction and public domains

5. Discussion and concluding remarks

This paper has been looking into critical issues and important research to de done more than actual 'findings'. Thus the paper ends with a pledge for critical research into the new mediated sites of interaction and we suggest a number of important research agendas to follow up on:

- Unfold a 'politics of visibility' (i.e. projects that help making visual the invisible issues and problems of new mediated spaces)
- Engage with the ambivalences of networked mobilities and mediated projects (i.e. focus both on the potential for enrichment of experiences as well as the questions of social exclusion)
- Critically challenge of taken for granted interpretations of networked mobilities (i.e. that mobility is an instrumental act of moving from A to B and therefore all transit spaces are instrumental and generic)
- Explore new theoretical concepts (i.e. move beyond dichotomies of local/global, virtual/physical, space/place, sedentary/nomad)
- Discuss the division between utopian and dystopian perspectives, asking how digital technologies may empower mobile social agents?
- Explore prototypes for new interactive urban artefacts and sites of interaction facilitating new public domains
- Explore the potential for transgressing the commercialized media scapes of urban architecture (i.e. urban ads and electronic facades communicating the gospel of consumption)

- Critically discuss if these technologies and performative urban environments can contribute to socially inclusive designs
- Critically discuss if we can move beyond commercial exploitation and state control, and whether mediated interaction spaces become even more meaningful and culturally enriching if we enhance the technological networks of such spaces

Conducting research into these issues is 'what matters'!