

A BRIEF HISTORY OF THE FUTURE OF URBAN COMPUTING AND LOCATIVE MEDIA (DRAFT)

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1.0 INTRODUCTION

Since the late 1980s, researchers have been working on a “post-desktop” paradigm for human-computer interaction known as ubiquitous or pervasive computing. Combining any number of mobile, networked and context-aware technologies, this vision hinges on the possibility of embedding computational capacities in the objects and environments that surround us. In order not to be overwhelmed by such a proliferation of new technologies, researchers have most often worked to integrate them in ways that make it difficult to identify when and where we interact with these systems. For example, many of us are aware of, or have used, Global Positioning System (GPS) technologies in our vehicles, or Radio-Frequency Identification (RFID) technologies in public transportation passes like London’s Oyster card and Hong Kong’s Octopus card. When sensor technologies are added to the mix, these systems can measure and monitor everything from environmental conditions such as air pollution or noise levels, to bodily functions such as heart-rate or temperature, and connect that data to any number of applications or services. While certainly not infallible technologies, interaction with such systems is generally so seamless that it is easy to overlook the significant infrastructure that underpins their management and use.

By the early 1990s, sufficient engineering and computer science advances had been made to bolster the claim that, while the era of pervasive computing might not have yet arrived, it almost certainly would in the future. When research in these areas began to spread from university and corporate research labs to the popular imagination, there was an almost immediate reaction against such a totalising vision of technological penetration in everyday life. In North America and Europe in particular, privacy concerns emerged front and centre as commentators envisioned a world of absolute surveillance. Even within the human-computer interaction research community, responses were mixed. In the mid-1990s, strong criticism emerged and researchers debated the pros and cons of developing such “dangerous” technologies. However, technological limitations at the time still allowed researchers to claim these social concerns were theoretical, and the matter faded from public consciousness again until the early 2000s.

By the turn of the 21st century, mobile phone penetration was globally on the rise, and a vision of ubiquitous information and communication technologies no longer seemed a fantasy. Technologies that had not existed even five years earlier were becoming commonplace and, firmly embedded within broader consumer desires for convenience and comfort, the pervasive computing vision began to roll out with unprecedented

vigour. Industries and governments began heralding the coming “internet of things,” where the global supply chain would be managed in ways that could create “smart objects” or a web-presence for consumer goods. Again popular media tended to focus on the surveillance possibilities, and ubiquitous or pervasive computing discourse began to take on a distinctly dystopian tone. However, at the same time new research agendas in urban computing and locative media emerged to present a strongly utopian counter-vision.

My dissertation focusses on these emergent research agendas in an attempt to better understand how, contrary to the discursive construction of pervasive computing as ‘everywhere,’ research projects in locative media and urban computing actually locate these technologies ‘somewhere.’ I draw on actor-network theory and sociological approaches to expectations and affect as a means to understand and account for the complexity of these processes. By focussing on the roles of imagination and desire in shaping technological change, I examine how urban computing and locative media research involves persistent tensions between pasts, presents and futures, and how that makes certain practices and identities possible or probable, and others impossible or improbable. Working on the assumption that recent expectations surrounding locative media and urban computing have more to do with present technosocial concerns than with future predictions, I look for indicators of how research is currently being organised and how relations between people, computers and everyday life are being actively reconfigured in the process.

Drawing on both online and offline participant observation, as well as experimental ways of writing culture, my doctoral project seeks to open new ways of conducting sociological research that firmly position our work within the embodied and situated practices of everyday life. Through recombinant textual strategies that encourage listening over telling, and often description over explanation, my dissertation presents a multivocal and multiperspectival account as a pleated or layered text. Weaving together theoretical and analytical discussion with scholarly quotes, questionnaire and interview excerpts, blog posts, news stories and personal reflections, readers are invited to join in their entangled differences—as active producers of their own knowledge rather than as passive consumers of academic wisdom. I argue that the validity and value of such an approach may be found precisely in its ability to avoid presenting a single voice or point of view, and to ask more questions than provide answers.

In addition to these methodological contributions, my dissertation also seeks to build on sociological approaches to understanding everyday life in the ‘networked city,’ especially in terms of how emergent technologies stand to reshape our experiences of spatiality, temporality and embodiment. Following these technologies and their accompanying visions from labs, conferences and classrooms, to journal publications and popular media accounts, I draw out the idea that hybrid city spaces and social behaviours are increasingly expected to be more expressive and affective. This increased extensibility and transmissibility of the city itself, along with an increased ability to be socially embedded within it, is seen to be the fundamental promise inherent in the four cases presented in my dissertation. And I suggest that these spatial and cultural potentials can

be productively understood as involving temporary and mobile publics, where playful interactions emerge as primary means of social innovation.

Ultimately, I aim to present an account with multiple entrances and exits so that researchers and practitioners with various interests, and from a variety of disciplines, can follow-up in different ways. My dissertation raises intriguing questions about individualisation and subjectivity, collective action and collaborative work, and infrastructure and governance, to name just a few—and I hope that readers will conjure even more.

1.1 CHAPTER SUMMARIES

The first two chapters following the introduction outline the methodological approach taken in my doctoral project, and the third provides a theoretical foundation. The subsequent two chapters present and analyse the empirical research I conducted, and the final chapter assesses the findings.

Chapter 2

This chapter argues that methodological bricolage is particularly well suited to tackle the indeterminacy and contingency of social and cultural knowledge in the early years of the 21st century. Beginning with a brief introduction to a shift in sociological focus from society to sociality, I position my dissertation within sociological traditions more concerned with processes and relations, than with objects and structures. This kind of mobile sociology is seen to compel the mapping of connections and associations, always emphasising situated positions and partial truths.

I describe a multi-sited approach to ethnography “designed around chains, paths, threads, conjunctions, or juxtapositions of locations” (Marcus 1995:105) that results in accounts that are choreographed and performed with others. Grounding my project in participatory methods, I explain that my approach to ethnographic fieldwork attempts to combine online and offline participatory observation. Not only does this best reflect my research experiences, but it seeks to open new ways of conducting academic research that position our work within the embodied and situated practices of everyday life. My empirical research, in the form of site visits, questionnaires and interviews, is presented in the form of case histories. In contrast to exhaustive and generalisable case studies, the Freudian and Foucauldian case history stresses partiality and internal intelligibility.

Faced with the challenge of how to re/present such an approach as a written dissertation, I turn to experimental approaches to reading and writing found within anthropology and feminist theory. Following Richardson (1997:303), I write here “the way my life is experienced,” full of recombinant strategies that encourage listening over telling, and often description over explanation. Seeking to explore ways of re/inserting affective experience into the rational products of intellectual labour, I choose multivocal and multiperspectival accounts presented as pleated or layered texts.

My dissertation, then, weaves together theoretical and analytical discussion with multiple genres of text: scholarly quotes, survey and interview excerpts, blog posts, news stories, personal reflections, etc. And it is precisely in their entangled differences that the reader is invited to join. By following my zig-zagging paths, and remaining open to understanding things according to their own logic rather than imposing a singular or stable logic to control them, the reader becomes an active producer of her own knowledge rather than a passive consumer of academic wisdom.

Given the situated and partial nature of such an account, I conclude this chapter with a brief discussion of interpretive validity. Stressing a critical approach based on the validity of transgression, and a “strategy of excess and categorical scandal” (Lather 1993:677), my dissertation seeks to evoke further reflection and questioning. In fact, part of the validity and value of my argument may be found precisely in its ability to avoid presenting a single voice or point of view that reinforces the false notion that my subject of study is stable and describable in its entirety. In evaluating its success, we can ask if I succeed in creating such a questioning text. Put a bit differently, does it demonstrate what is in play, and invite us to play with it?

Chapter 3

In this chapter I introduce my weblog, *purse lip square jaw*, as an integral part of my dissertation’s methodology and my personal experience of ‘becoming PhD.’ I describe research blogging in terms of its ability to reconfigure, to greater and lesser extents, traditional sociological understandings of authorship, identity and academic authority—although the political power of these emerging practices and relations should be further qualified. By engaging multiple audiences and publics, my blog can also be understood as a form of participant observation that raises interesting questions about the differences between collective and collaborative research.

Emphasising how blogging is simultaneously private and public, individual and collective, I raise a variety of questions about authorship, audience and authority in contemporary academic knowledge production. Beginning with a discussion of blogging and affective politics, I use excerpts from my blog and the comments people made there to draw attention to the more physical and emotional, financial and political, aspects of intellectual labour. They may be excluded from our formal work, and often even from the classroom, but they can nonetheless find a place online—where we and others can engage them in new and productive ways.

Finally, I address the question of audiences and publics, and their connection to ‘voice’ in online academic writing. In my case, the matter of blogging identity has been dominated by what kind of academic I have wanted to become, as well as what kind I have been ‘allowed’ to become. This is related to the reality that, at least sometimes, I did research *near* but not *with* non-academics—which raises interesting, if largely unresolved, questions about what it means to do sociology through blogging. In this chapter, I leave more questions unanswered than answered—but I think this is consistent with the sort of immediate and emergent quality of blogs that I attempt to

describe. I also want to emphasise that the analysis of research blogging is in its very earliest stages, and much work still needs to be done.

Chapter 4

In the first part of this chapter, readers are introduced to pervasive or ubiquitous computing as an emergent agenda in human-computer interaction research characterised by tensions between seamless interaction and calming effects on one hand, and more transparent infrastructures and active appropriation or engaged use on the other. I show that from its earliest debates, researchers have been divided on whether such a technosocial future would be profoundly dystopian or utopian.

In order to better engage these tensions and other intangibles of emergent or future-oriented technologies, elements of actor-network theory along with notions of transduction, as well as sociological approaches to expectations and affect, are positioned as the most promising ways for social researchers to understand and account for the complexity of the processes at hand. A sociology of expectations looks to the affective roles of imagination and desire in shaping technological change, and expectations are seen to be performative in the sense that they attract interest from potential allies, define roles, and “build mutually binding obligations and agendas” (Borup et al. 2006:286). Such a perspective requires we ask how pervasive computing involves persistent tensions between pasts, presents and futures—and how that makes certain identities and objectives possible or probable, and others impossible or improbable.

In this chapter, I outline a position from which I seek to claim that contemporary expectations about urban computing and locative media have more to do with present technosocial concerns than with future predictions. Likewise, expectations about urban computing and locative media can be seen to shape how we approach research in these areas today, along with our very definitions of—and how we understand relations between—people, computers and everyday urban life.

Chapter 5

I begin this chapter by providing a brief overview of the ‘networked city,’ with its dynamic combinations of the material and the semiotic, the virtual and the actual. Avoiding the claim that urban computing and locative media are entirely ‘new’ contributions to this discourse, I instead focus on what is different and what remains the same. Starting with technological changes, I contrast cyberspace and virtual reality, and their ethics and aesthetics of disembodiment and dislocation, with the promise of augmented or mixed reality and hybrid space, and their emphases on embodiment and location.

By introducing the first of my case histories, *Mobile Bristol*, I begin to move back-and-forth between small and large stories, or different scales of research. Conversations with the Hewlett-Packard researchers return us to the role of affect in communicating research visions, successes and failures. In these stories we see processes of translation

working to create particular associations and expectations, including an increased emphasis on making research ‘public.’ Further following formal mechanisms of knowledge creation and dissemination such as conferences, classrooms, workshops and journal publications, and simultaneously juxtaposing these activities with more informal weblog and popular press accounts, allows me to trace how urban computing and locative media are enacted in the present.

I draw attention to how the spaces of urban computing and locative media research and development are remarkably heterogeneous, despite sharing a somewhat homogeneous shared vision. And ultimately, I call attention to the value placed on inter-disciplinary research and ‘public’ involvement in order to discuss the politics of such collaborative work.

Chapter 6

This chapter shifts focus almost entirely to the smaller stories of individual urban computing and locative media research projects in order to question what, exactly, is expected in some of these future scenarios. Contrary to the discursive construction of pervasive computing as ‘everywhere,’ these projects can be seen to locate technologies ‘somewhere.’ Context-aware computing, researchers suggest, enacts particular but dynamic spatialisations, temporalisations and embodiments. In doing so, city spaces and social behaviours are expected to become more affective and expressive, and potentially more meaningful. This technologically-mediated extensibility and transmissibility of the city, along with an increased ability to be socially embedded within in, are shared expectations amongst all the cases presented here.

The *Passing Glances* project is described as an imagined future where images could be embedded in the built environment and triggered by text message, augmenting urban waiting spaces with random and emergent narratives as well as the potential for random and emergent social interactions. *Sonic City* is positioned as both a listening and composing technology that promises the city itself as media co-creator. Although it is not considered an interpersonal technology, it can nonetheless be seen to expect new relationships between people and places. *Urban Tapestries* is likewise described as expecting and promising a reinvigorated sense of social and spatial belonging based on the ability to play with boundaries and identities.

Ultimately, I argue that the desire to augment reality is not a desire to use technology to replace people, places or activities, but rather one that expects to amplify or extend the most vital qualities of our lives in order to multiply possibilities for future connections. A primary expectation that informs all these research projects is that future technological applications would, and should, facilitate playful or transformative experiences, dense with aesthetical and ethical action. In this way they position themselves against a totalising vision of ubiquitous computing, and situate their applications as temporary or partial interventions into everyday urban life.

Chapter 7

In keeping with my dissertation's goal to provide multiple entrances and exits, the final chapter is dedicated to identifying particular issues and concerns that deserve further consideration.

Reconfiguring the structure presented in the other chapters, I divide my discussion into two broad categories: ethnographic methods and social studies of technology, space and culture. In each section I summarise what I consider to be the main contributions of my thesis, and end with a set of possible questions for others to pick up.