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Living the Map

Cartographies of Mobile Media Environments

Clancy Wilmott

Clancy Wilmott recently completed Honours in Cultural Studies at the University of Technology, Sydney, with a research thesis on mobile mapping. Nowadays, she is about to begin her PhD in Geography at the University of Manchester, researching the impact of mobile mapping on post-colonial cities and cultural geographies.

All images are the work of the author.

New cartographic technologies (such as Global Information Systems and Global Positioning Systems) have accompanied rising usage of mobile phones, resulting in a fundamental shift in human experiences of urban landscapes. As technological change occurs with increasing rapidity, it involves a growing number of fields of research, placing new emphasis on experimental and cross-disciplinary collaborations that aim to understand its social and geographic impact on a wider and deeper scale.

Moving away from semiotic, representative and deconstructionist approaches, this paper draws on theories of practice to offer a new framework for understanding mobile mapping as a contemporary urban practice that constructs and subverts notions of space, place and time. It explores pervasive mapping in a state of situatedness and its relationship to the urban environment – as a moment of repeated and habitual encounter between multiple forces (users, devices, spaces) and landscapes (physical, Hertzian, virtual).

This approach is framed via a consideration of the author's own experiences with mobile mapping in Sydney, and an interdisciplinary foundation from the fields

of geography, cartography, urban studies, philosophy and the humanities. Focussing on selected mobile applications, such as FourSquare, Google Latitude and AcrossAir, this paper examines how new elements of amateurism, temporality, dissemination and collectivism are constructing not only new urban spatial practices, but also new cartographies, communities and localities.

The delimitation of territories and identities through the dash and the line is at once and the same time a bounding and separating that does violence to the world and a practice that gives our present world the meaning we understand and use on a daily basis. The categories we use and the demarcations we draw produce identity/difference relations in terms of which the world is structured and understood.¹

The Babylonian *Imago Mundi*² (c. 600 B.C.E) is one of the oldest surviving world maps. Diagrammatic and annotated, it emphasises neither accuracy nor technicality but instead is cosmological - representing the world of the Babylonians as they saw it. In the centre lies Babylon, their home city, surrounded by a ring marking a heavenly ocean and seven (possibly eight) triangles, thought to be islands as viewed from the approach by sea. These islands depict the most distant points in the Babylonian's geographical imaginations, places of the Epic tales, myth and rumination inscribed in remnant cuneiform: "the animal which Marduk created upon the rolling sea", "... Ut-Napishtim, Sargon and Nur-Dagan king of", "... their interior no-one knows".³

This map is not unusual. A vast number of ancient maps remain, leftovers from the attempts of many civilizations to situate themselves in relation to their own memories, geographies and cosmologies. More often than not, these elements are amalgamated, inscribed with the beliefs of the people who drew them and reflecting how they may have seen the world. Maps, whether remnants of Egyptian maps to the afterlife, or *mappae mundi* centred on the Holy Land, or modern town plans, nautical maps, road maps, rail maps or poverty maps, each imply a greater notion of mapping practices that do more than represent worlds – they are defined by our worlds and design how we may exist within them.

Presently, cartography is enjoying renewed attention, where, as Georg Gartner argues, maps play a significant role in digital communication.⁴ Google Earth recently reached 1 billion downloads, a system that collates hundreds of thousands of satellite images to compose a highly specific and accurate digital globe.⁵ As if this is not enough, it also supports mash-ups and community-generated mapping activities, in which millions of individual users can use Google Earth (and related applications like Google Maps) to make their own maps. Using technologies, including mobile phones, users can input their personal information and experiences, uploading

them to the internet for other users to see and then add into their own maps. Conflating the roles of map-reader and mapmaker, this creates a complex system of feedback and community generation/interpretation/representation of spaces. Here, mapping geography becomes mass dialogue.

More and more, we are seeing map-making shift away from being a scientific endeavour practiced by trained cartographers to a more accessible and amateur movement. Mass distribution via the internet, rising digital literacy and recent calls to democratise cartographic systems have resulted in the ability of anyone with an internet connection and a nominal understanding of digital environments being able to create and disseminate maps with relative ease and low cost.

Simultaneously, urban environments and digital technologies are surreptitiously inundating spatial experiences with unfiltered information via mobile phones. Rather than being static epistemological representations created and viewed non-contiguously, mapping has become deeply ontological, situated in time and occurring in the same space that is, or has been, mapped. Where once our cartographic records were painted or carved on rock walls or etched onto pieces of parchment, our remnants have now become a collection of overwritten bitmaps and bytes, mediated through complex digital networks.

Despite significant research on mobility⁶, urbanity and digital maps⁷, the specific study of *virtual maps* on *mobile phones* in *urban spaces* is still quite new. In discussing mobile mapping, we arrive at an intersection of ideas from numerous disciplines and discursive backgrounds; people, space, technology; and many different perspectives; cartography, geography, social science, cultural studies, psychology, art, literature and economics. While examples of critical cartography point to the ideologies and misconceptions embedded in maps⁸, John Pickles⁹ describes the mapping impulse as a practice which is not simply representative but also constitutive, bound up in lived experience and spatial practices. He references Sonenberg, a poet, who describes a similar process:

It has always been this way with the map-makers: from their first scratches on the cave wall to show the migration patterns of the herds, they traced lines and lived inside them.¹⁰

As Sonenberg describes, 'tracing lines' is a process of living, as much as a process of representation. By navigating the body through space and time we locate and situate ourselves within a larger framework, thereby building notions of localities and globalities, of ourselves and others by creating places and expressing (often through maps) what they mean. Moreover, mapping is imbued with aspects of affect and memory, with habitus and

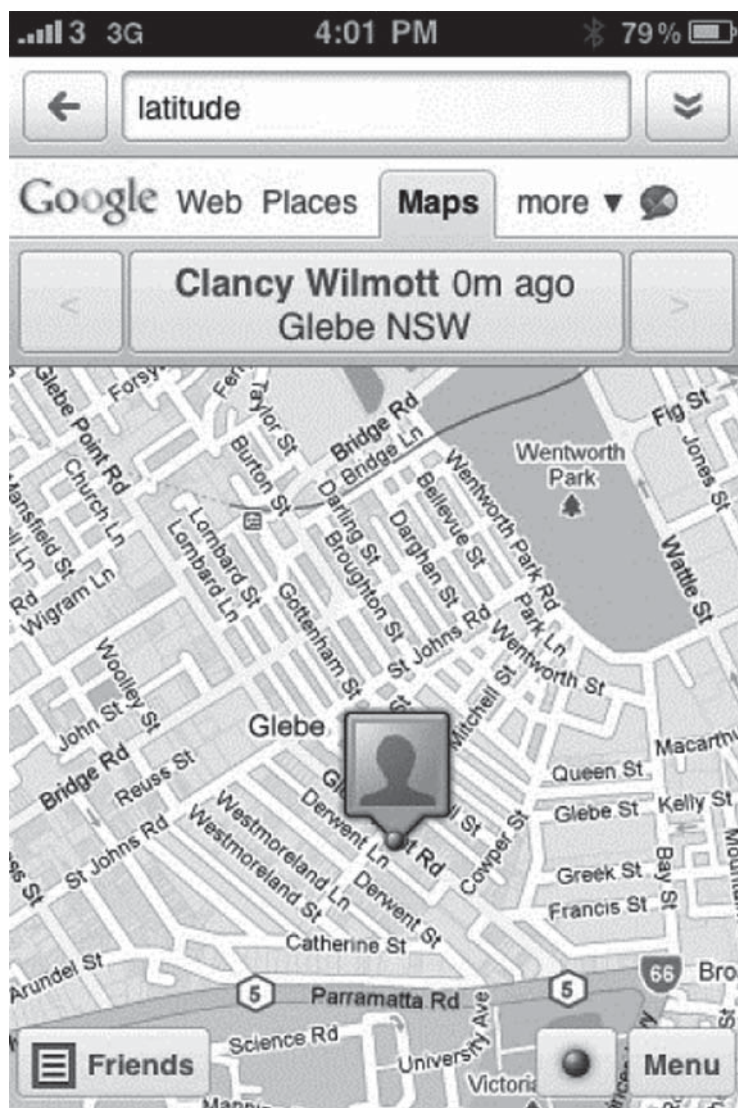
experience: “The drawing and reading of a line, the historical emergence of cartographic reason, the production and circulation of a map and lived experience are so thoroughly and historically intertwined and over-determined.”¹¹

Here, it becomes necessary to talk about mobile mapping as a spatial practice, because major technological changes have meant that the fundamental nature of the map has changed. Thrift proposes that practices are the ‘stable feature of a world that is continually in meltdown’¹²; practices which are not necessarily definite, but which leave ghosts of themselves long after they have fallen out of use or been transformed into something fundamentally new or different. It is a coming together, a loosely arranged philosophy-come-methodology. In focussing on ‘movement’, a suitable framework can be formed, adding a sense of mobility to understand the changes to how, when and where map-making occurs.

Because of its immediacy, mapping is an everyday occurrence of the spatial imagination that feeds into the design of ‘the self’, situating subjectivities in the temporality of the past, present and possible. Through mobile maps, the everyday communities, localities and spaces that we create and inhabit (i.e. the lines that we trace) are no longer simply imagined, but can actually be communicated via the map and practiced through mapping. My “local” area, which previously was a hazy and undefined blur of visiting practices, can be described through mapping, as I draw my journey through the day. Foursquare (a check-in based application designed around places), Google Latitude (a tracking application on Google Maps), and Layar (an augmented reality application that lays photos or articles over the landscape that they describe via the camera) create a personal cartography tracing my paths through space, binding my daily routines to specific geographies.

A typical day, as recorded through these apps, might go something like this:

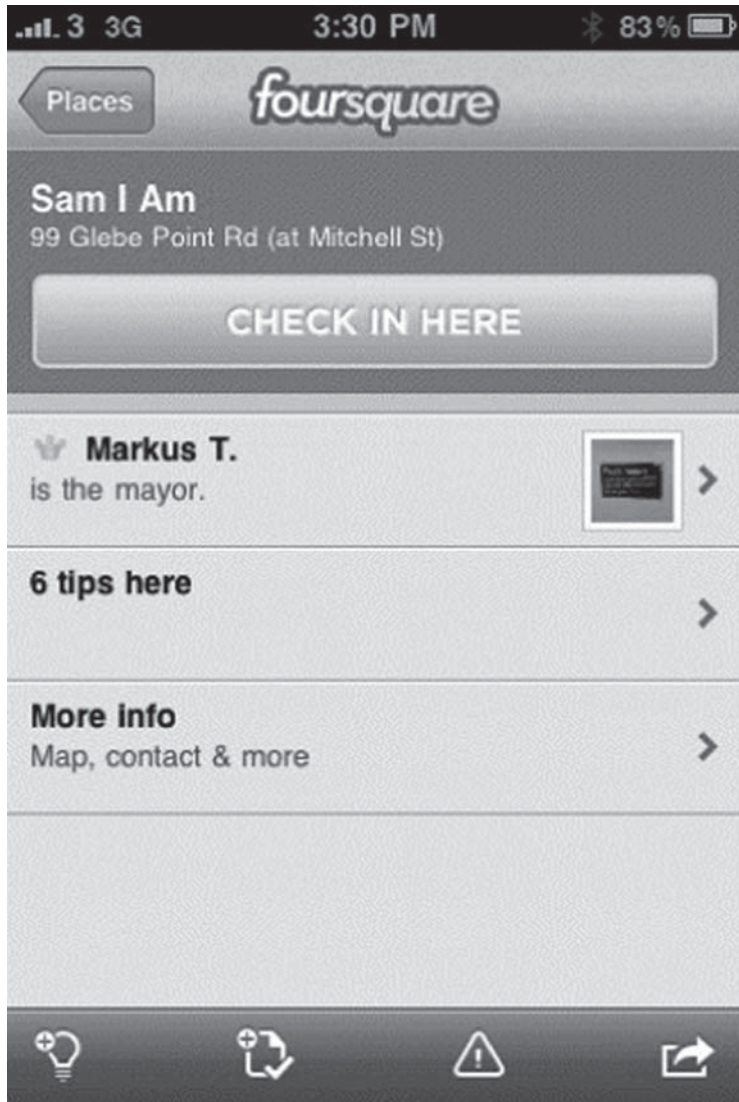
I wake up and track my morning jog for speed and distance, then check-in to my favourite cafe and get a discounted coffee because I’m their most frequent (foursquare) customer. I see which bus a colleague is on (via Latitude) and choose to get on or wait, and then travel into the city, noting whose paths criss-cross my own, and meet-up with one of them for lunch at a nearby restaurant recommended by a stranger three weeks ago. When I see an unusual building, I open AcrossAir and read a Wikipedia article about it, and view a few photos taken by others at night, during the day and before it was even built. Several stray pictures sneak by, reminding me that the harbour isn’t far away, and of the day last year when red dust covered the city. Heading home, I search for my local grocer (name unknown) but find their phone number on Google Maps and call to see if they’re open. They’re not, so I locate a take-away down the road and order while I’m on



the bus to avoid the queue, and as the food is good, I say so on foursquare, as I check-in before I go to bed.

Tomorrow, these traces will still remain, and, as I use these maps more and more, my (and thousands of other people's) past present and future experiences (and thousands of other people's) cloud together through the highly contrived mapping architecture.

Unlike traditional mapping, mobile mapping operates across myriad landscapes, engaging a virtual landscape of an almost infinite number of (sometimes contradictory) geographic representations; a physical landscape (in which the user and the device are situated with a full range of affects); and also a Hertzian landscape¹³



comprised of signals and bytes, visible to the eye only via antennae and transmission towers.

Right now, as I write this, I am at a desk on level 3 of a library in Haymarket. Beyond this sensual data, Google Maps places me at 33°52'50.56"S and 151°12'7.72"E. There are seven automatic teller machines, dozens of restaurants, a market, five shopping centres, an entertainment centre and any number places nearby, with comments, ratings, feedback and recommendations attached. There are hundreds of photos and articles about my immediate locale, displayed over the landscape. There are more than 5000 registered radio frequency assignments within my local postcode of 2000 (ACMA)¹⁴ that are sending invisible signals through the air.

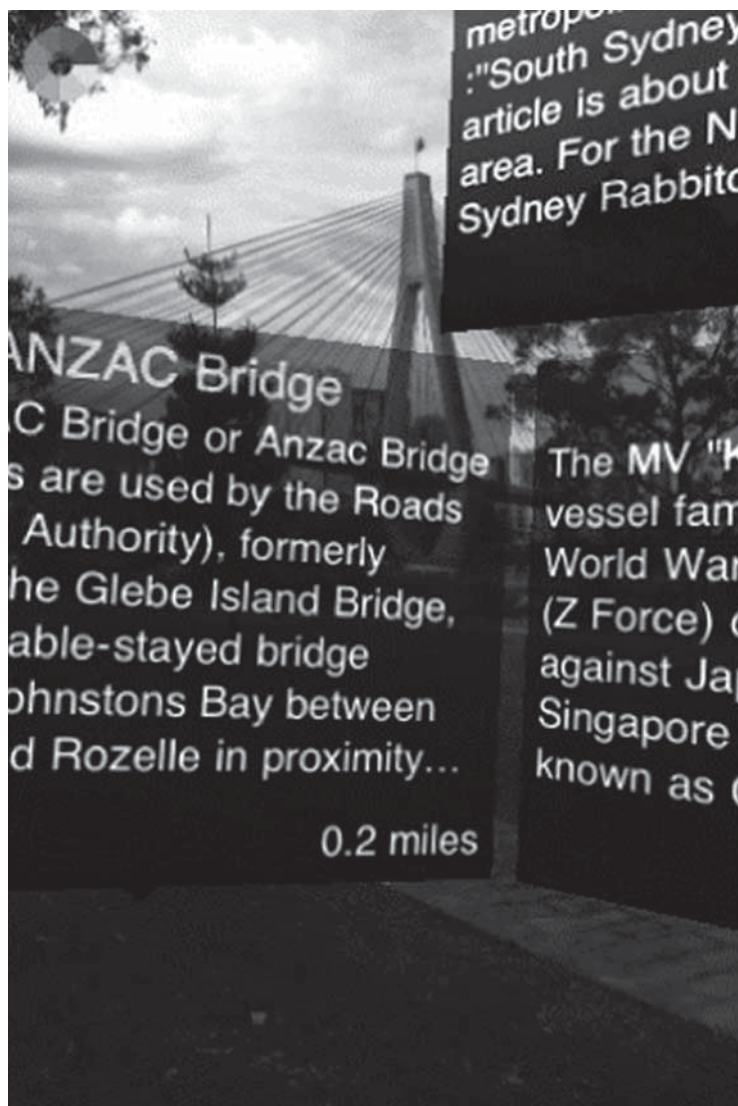


Figure 1

In the midst of this network, a signal is emitted from my phone, framing my presence by activating digital exchanges.

Rather than creating separate or alternate realities, the mobile map merges multiple landscapes into the same moments of experience. As each landscape layers over and through each other, they form hyperrealities, whereby, the physical landscape is magnified, information inundating the user. The map as a cartographic text becomes 'more real than real' because it is embedded into ontological and situated moments of lived experience where the experiences of the user are framed by the ghosted imprints of other users on the virtual landscape and then

reframed through the physical landscape and communicated through satellite systems and coding. These suggestions compound into memory and decision-making, wayfinding, daily routine and habit and other spatial practices, generating hyperspaces, built upon hyperrealities, where spaces become more real than real:

... postmodern hyperspace – has finally succeeded in transcending the capacities of the individual human body to locate itself, to organize its immediate surroundings perceptually, and cognitively to map its position in a mappable external world.¹⁵

In this ‘hyperspace’ we are inundated with information, our subjectivities contending not only with our own experiences, but the inputted experiences and knowledge of everyone else. As if to build an opportunistic clarity in the midst of my spatial and informational vertigo, software-maps step in (as traditional maps often did) to help us map/locate ourselves.

However, unlike traditional experiences of mapping, here I may occupy several spaces of being and perform several versions of my self over different landscapes, each with their own spatial *modus operandi*. Through different maps I am a runner, or a coffee drinker; a worker or a shopper; a local or a foreigner; a friend or stranger. The nature of the phone means that I may be represented in different ways in different landscapes simultaneously – where the self may be sidelined to the periphery of the physical landscape, in the shadows, inside a building, in absentia (and unlike a traditional map that shows neither time nor people), my digital imprints can remain on the virtual and Hertzian landscapes, indicating my past visitations to anyone and everyone. Here, my personal check-ins, photographs and signals linger indeterminately, intermingling with the spectres of other users’ perspectives and experiences, mapping my histories across space and time and gaining notoriety or infamy as a user in the space, a member of the community, some-one who has been here and done that (or whatever other impression I may decide to give). Here my experiences as a local in the space hold a certain gravitas, and my comments, check-ins, photos and tags may influence other users to take sidetracks or detours to discover sites of my experiences.

But these additional landscapes also design a highly temporal subjectivity. Digital mobile maps are not technologies fixed in space, they are transient, coming into existence when called upon by the phone and then expiring after they have been used. Digital maps are dynamic representations, updated constantly as information is fed and received continuously via GIS and GPS. These unceasing updates mean that mobile maps change constantly, and rather than building a coherent structure of ‘a map’, they simply pinpoint

when and where mappings have occurred, shifting emphasis from what information is displayed to what *kind* of information is displayed.

This means that mapping practices construct a self that is at once fractured and fluid, with multiple states of being coming into existence across multiple maps and landscapes, linked through a mobile device. The process of self-location and wayfinding is mediated through digital infrastructures, our ontological presence embedded in the map functionality: I use the phone to call upon the map via an application which then uses the phone's hardware to locate my position, which is then displayed on the map. Lost in this process is the requirement to personally identify my positionality on the map – I no longer need to find myself, the map does it for me.

When this process was limited to a design of the landscape – contours curving or rhumb lines streaking across the world – the ideologies inherent in systems of representation (particularly rationalism) shaped the way in which the space was perceived. Map-makers were influenced by broad social conventions of the time – religion, imperialism, colonialism, capitalism – and told map-readers exactly where localities lay, where countries ended and where their community loyalty should lie¹⁶. Embedded in this was a subtle and subconscious axiom of objectivity, “operating behind a mask of a seemingly neutral science”¹⁷ further refigured in the mobile map – a living, ergodic¹⁸ software-text that subtly articulates mapping (and also spatial) practices to a limited set of choices.

Software, Thrift and French¹⁹ argue, is different to traditional texts. It “...is a space that is constantly in-between, a mass-produced series of instructions that lie in the interstices of everyday life, pocket dictators that are constantly expressing themselves”²⁰. Like software, in mobile mapping, cartographic practices are spread beyond the textual interface into codal systems, where my location becomes a set of numerical coordinates, traced to the nearest phone tower, situating myself within the network of communication receivers across the globe.

The code engineers how I represent space and the kinds of information that feature, framing my spatial imagination, my spatial practices, and thus, my subjectivity. Just as there are ideologies in cartographic images, there is a concurrent hegemony of logic-based discourses around coding as programming languages are based upon Leibnizian number systems, and necessarily biased towards binaries and dialectics²¹. Invisible longitudinal and latitudinal lines frame our perception of space, while the code that inhabits the ‘back-end’ of the mapping program frames our practices in space.

The mapping architecture then forms the foundation for mapping practices, which ultimately situate myself in the world. As

they are mobile and temporal, an ontology of movement comes forth where practices, mapping and space intersect. When using Foursquare, I begin to map out a series of encounters. Checking-in at each location (the supermarket, café, park, work, bus stops, train stations and also bus routes or train lines), my encounters of mobile mapping are not momentary snapshots. Instead, they flow, in constant movement as I plot my routes as drop-in points across both space and time. This forms my own 'personal geography'²², where the application acts as archive, tracing my movements throughout the day:

It is true that the operations of walking can be traced on city maps in such a way as to transcribe their paths (here well-trodden, there very faint) and their trajectories (going this way and not that). But these thick or thin curves only refer, like words, to the absence of what has passed by. Surveys of routes miss what was: the act of passing by.²³

Though Certeau's mapping may only refer to past practices and encounters, mobile mapping occurs in-situ, engaging the tactic of mobility – I don't just watch the spectacle of the city through maps on my phone, I participate in it. The mobile map is living, much like the city-text that Certeau saw when staring down at Manhattan from the 110th floor of the World Trade Centre. It is ever-changing, depending upon people's mapping practices to 'write' it and imbued with the 'everyday', tiny moments of subconscious existence, constantly transforming. As I wander, satellites trace my position (as with Google Latitude) and feedback into the map. In movement, acts of mapping become embedded within 'the act of passing by': walking operations become embodied mapping operations²⁴. They intersect with lived experiences, building a multitude of transitive and nebulous personal cartographies that interact with one another. Although these interactions dissolve on the physical landscape under the flows of bodies, they linger momentarily on the Hertzian landscape, long enough for them to be read and rewritten. Through these practices, old forms of cartographic subjectivity are transformed – no longer static and adamant, mobile maps begin to reflect new ontologies, more personal, present and dialogic.

Embodied mapping operations are not arbitrary singular encounters – through repetition they become embedded in everyday habits. As I map throughout the day (either by checking in or tagging photographs) I am creating a personal geography, and also making a spatial claim, offering a proposition about the space itself. As I continue to do this, I construct a personal cartography, creating an example, and an argument, about how spatial practices may occur. Here, I am announcing a presence on the landscape at one point or another, but I am

also participating (to a degree) in framing how the landscape is perceived, imagined and experienced by others, and thus, how space is produced.²⁵

Here, my experiences feed back into the mobile map. Moreover, participation in this exchange is dependent upon physical presence in the space, on being 'local' to both the physical and digital landscapes. Thus, my locatedness has a certain authority. More than reporting my experiences, the simultaneity of encounter and mapping builds conversations and communalities within the local area. While admittedly, an application such as Foursquare may reinforce consumption by emphasising places like shops and cafes where things may be bought, it also supports a space for an exchange of knowledge that is based in local experiences. Here, through mapping practices, space becomes placialised, of check-ins to points of personal importance (whether it is 'home', or the 431 bus or a local park) against the impersonal and homogenous blocks of colour that might normally occupy a road map or city plan, and my personal cartography builds a skein of ontological 'local-ness', weaving a new sense of place-based memory over formal boundaries like suburb edges and postcodes:

If the time-line is spatial in its continuity and homogeneity, it is at the same time "placial" in its constitution by means of positions, that is, a series of points arranged on the line and grasped, all together, as the line.²⁶

However, our ability to track our personal pasts and present through space, into possible futures, dissolves the sense of linearity that Casey evokes. Instead, mobile mapping uses space as well as time as a foundation for records: my route through time is tracked over space and place, rather than my experiences of place tracked over time and memory: when I return to a place, only via my GPS position can I see how the dialogues have transformed since I was last there, how my comments have influenced or been refuted. Through mapping, a sense of locality is reinforced, of belonging to a geographical and social clique or group. Licoppe and Inada offer a ludic example, from a location-based game using maps:

The existence of personal and collective territories stems from the fact that claims over items in some areas were made or recognized and from particular mobility practices such as avoiding (or conversely being compelled to visit) some sites, detours, etc."²⁷

The 'local' area becomes a circumscribed imagined cartography, a 'placial' space within which I exist. In locality, however, time is not completely lost. Rather, it is a layering over space, as my past paths (and other people's) cross over one another, building

a sense of place and locality into a nexus of history and memory. Through the placialisation of space an 'imagined community'²⁸ forms on a local level. This imagined community is not necessarily influenced by nationalism and statist ideology, but rather through the communication of shared experiences of local geographies over time. The space that this community inhabits, the 'local', is bounded by implied practices and contexts, which are often too contradictory and transitory to be mapped singularly. This kind of communication is at once distanced and intimate, an acknowledgement of shared, dynamic spaces, of social rules and personal geographies without any face-to-face contact. Each map-marking remains as a trace for other users, a limited group of people who have the resources and knowledge to decode the information that has been left, like a form of digital tagging, where your presence (or absence) is noted indefinitely like graffiti tags left on walls, footpaths and cars. These inscriptions declare a 'locality' an assertion of the self existing and being in this space, a marking of personal and geography territory.²⁹

Mobile mapping does more than simply build textual interfaces. Like tagging, it marks urban practices that are in absentia on common maps allowing for the expression of the deeper, personal and affective experiences of the user as they are happening. As an everyday accompaniment to wanderings and gatherings, it moves against authoritative cartography, slowing forging new maps and iterating previously silent subjectivities via the slow building up of alternatives – elephant paths or goat tracks that mark not just what is in a space, but also who is in the space, and how they define it. Here, these sidetracks, inchoate and ad-hoc navigations through the various landscapes develop a kind of power and authority that, as dialogues grow larger and more popular, and as technology changes to encapsulate different kinds of information and media, increasingly has the potential to challenge representational cartography and prescribed spatial practices.

Notes

1. John Pickles, *A History of Spaces: cartographic reason, mapping, and the geo-coded world*, New York: Routledge, 2004, p.18.
2. The Babylonian Imago Mundi currently resides in the British Museum.
3. British Museum, Babylonian Map of the World, http://www.britishmuseum.org/research/search_the_collection_database/search_object_details.aspx?objectId=362000&partid=1&searchText=Babylon+Map&fromADBC=ad&toADBC=ad&numpages=10&orig=%2fresearch%2fsearch_the_collection_database.aspx¤tPage=1 last accessed 17/8/2011.

4. Georg Gartner, 'Telecartography: Maps, Multimedia and the Mobile Internet' in Michael Peterson ed., *Maps and the Internet*, Oxford: Elsevier Science B. V., 2003.
5. 'Google Earth hits 1 Billion Downloads' *The Australian*, <http://www.theaustralian.com.au/australian-it/google-earth-hits-1-billion-downloads/story-e6frgakx-1226159764462>, October 6 2011 Last accessed 10/10/2011.
6. See for instance John Urry and Mimi Sheller, *Mobile technologies of the city*, New York: Routledge, 2006.
7. See for instance Martin Dodge, Rob Kitchin and Chris Perkins, *Rethinking Maps: new frontiers in cartographic theory*, New York: Routledge, 2009.
8. This is particularly true of the various approaches of John Brian Harley, Denis Cosgrove and Jeremy Crampton.
9. Pickles, *A History of Spaces*, p. 18.
10. Maya Sonenberg, *Cartographies*, Pittsburgh, University of Pittsburgh Press, 1990, p. 3.
11. Pickles, *A History of Spaces*, p. 5.
12. Nigel Thrift, *Non-representational Theory: space, politics, affect*, London, Routledge, 2008, p. 8.
13. The term 'Hertzian Landscape' was coined by William Mitchell in *Me++ : the cyborg self and the networked city*, Cambridge (Mass.): MIT Press, 2003, referring to an earlier idea of Hertzian space attributed to Anthony Dunne.
14. This refers to assigned radio-frequency emission licences granted by ACMA, as of October 10, 2011. The exact number for the CBD was too high to be counted by the ACMA database.
15. Frederic Jameson, *Postmodernism, or, The cultural logic of late capitalism*, Durham: Duke University Press, 1991, p. 44.
16. Benedict Anderson, *Imagined Communities*, Verso, 1991.
17. John Harley, 'Deconstructing the Map' in Trevor Barnes and James Duncan eds. *Writing Worlds: discourse, text, and metaphor in the representation of landscape*, London: Routledge, 1992, p. 328.
18. Further reading on ergodic text is best found in Espen Aarseth, *Cybertext: perspectives on ergodic literature*, Johns Hopkins University Press, 1997.
19. Nigel Thrift and Shaun French, 'The automatic production of space.' *Transactions of the Institute of British Geographers*, 27(3), 2002.
20. Thrift and French, 'The automatic production of space.' p. 309–335.
21. See for instance Lawrence Lessig, *Code and other laws of cyberspace*, New York: Basic Books, 1999.
22. William Cartwright, 'From Mapping Physical and Human Geographies to Mapping 'Personal Geographies': Privacy and Security Issues' in William Cartwright, Michael. Peterson and

- Georg Gartner eds. *Multimedia Cartography*, Berlin: New York, Springer, 2007.
23. Michel de Certeau, *The Practice of Everyday Life*, Berkeley: University of California Press, 1984, p. 97.
 24. Laurene Vaughan 'Walking the Line: affectively understanding and communicating the complexity of place' *Cartographic Journal* 46(4): 316–322, 2009.
 25. Henri Lefebvre, *The Production of Space*, Cambridge: Blackwell, 1991.
 26. Edward Casey, *Getting Back into Place: toward a renewed understanding of the place-world*, Bloomington, Indiana University Press, 1993, p. 93.
 27. Christian Licoppe and Yoriko Inada, 'Geolocalized Technologies, Location-Aware Communities and Personal Territories: The Mogi Case' *Journal of Urban Technology*, 2008, 15(3): 5–24. p. 7.
 28. Anderson, *Imagined Communities*.
 29. See Gregory Snyder, *Graffiti Lives: beyond the tag in New York's urban underground*, New York University Press, 2009, for a comprehensive study of urban graffiti practices.