2. Tools: Epistemologies, methodologies, anarchaeologies

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2. **Tools: Epistemologies, methodologies, anarchaeologies**

I would like my books to be a kind of toolbox that others can rummage through to find a tool which they can use, however they wish, in their own area. [...] I don’t write for an audience – I write for users, not readers.

– Foucault, ‘Prisons et asiles dans le mécanisme du pouvoir’ (2001e: 1391-1392)

What tools can we use to understand mobile mapping? When concerns of privacy and surveillance, of data and algorithms in mobile technologies are at the forefront of the mind, how can we excavate the deeper implications of these practices, the clash of epistemes, people, spaces, materialities and ideologies as they emerge in their particular moments? Before we get into the thick (description) of this book’s empirics, this chapter maps a series of epistemological, methodological and archaeological tools that we can use to try to move away from describing the manner and mode in which mobile mapping appears towards an analysis of how and why it has appeared in that way and the places and situations that it does. In two cities – Sydney and Hong Kong – carrying a small video camera, I walked with seventeen people as they carried out adventures, chores or explorations, and chasing threads of materiality, representation and practice between experiences, landscapes and archives. This strange method cast a warbled light, sometimes moving laterally (and sometimes literally), dancing between lines of inquiry, languages, gestures and geographies. It was this light that formed the shape of this book – an accidentally radical way of inquiring, teased onwards by those whose words fill these pages, and an intuitive reckoning of how it all fits together.

The ambition of this approach appeared, at least in part, because any attempt to map out both mapping and space exhaustively and to say anything concrete about their relationship in contemporary society is met with a pyrrhic victory. The rate of technological change bringing about new interrelations and apparatuses in society, the dissolution of representation

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into mutable, combinable and transformational interfaces and the complex network of relationships that bring forth situated, performative assemblages (especially in the case of geo-locative media) results in differential fixities that dissolve as soon as they catch hold. Therefore, there is a need for new ways to understand this phenomenon of mobile mapping that places the quixotic nature of transformation at the foreground of any analysis rather than simply accounting for it. Making tools is a difficult task and arguably one of the most significant challenges facing contemporary scholarship and made harder by the contrary, ambivalent and asymptotic appearance of everyday objects. Digital technologies still place the subject at the centre of a post-human world, fetishise the text in a post-representational age and valorise the consumption of an imagined present, always tumbling on as it formulates the future and disappears into the past before it even comes into being. In the context of Hong Kong and Sydney, even the dialectical oppositions that we traditionally understand between representation/non-representation crumble into a more complex foray between incongruous ways of thinking and being. And so, traditional narratives of now and post-now, mappings of there and not-there, and designations of this and not-this do not reflect the appearance of mobile mapping, or arguably, even contemporary cartographies more generally.

Furthermore, people – as I found throughout – are contradictory and mercurial. No sooner was a meaning interpreted than it was reneged and reinterpreted. This capriciousness comes through constant engagement with material-discursive landscapes (Barad, 2007) as well as pasts and futures. There is no consistent separation between the objects in the world – be they bodies, philosophies, ecologies or ghosts – and so, this became a project of suggesting relations rather than defining things. In a world where billions of people engage in mobile mapping practices every day, archaeology offers one way to navigate through the contradiction of mobile mapping. An archaeology of mobile mapping is not to analyse texts, per se, but to find statements where they appear, to map the surfaces of their emergence, to trace power as it appears and to find the rules which allow certain things to be said at certain times. In moving away from abstract descriptions of mobile mapping towards investigating how and why it appears, the conditions of specificity in which mobile mapping arises are crucial: it is not just any space, or place, or time in which mobile mapping occurs. It is in specific situations, where specific technologies, objects, rules, conditions and infrastructures exist to facilitate that moment. Significantly, it is equally important to consider the moments in which digital technologies aren’t used – moments of failure or nonchalance, moments that challenge a media-centred approach. How
do we understand how and why mobile mapping occurs, if we do not also investigate it in its full beyond-technology complexity?

As such, methodologically speaking, what I propose to do is to move beyond these debates. Rather than critiquing mobile mapping for not chasing its tail, so to speak, in search of a lost form or origin, or becoming absorbed in a labyrinth of connections and relations, this book aims to gather objects as they fall before us and to trace the patterns and themes that emerge. Mobile mapping, as a chiasm-of-thought-and-action, is enunciative: it speaks as it acts. But in speaking, it is not just what it says, but also what it does not say, the way in which it says it, and the vast array of values and objects from which it gathers its authority. Here, mobile mapping is more than just a map, or a technological device (or lack thereof), or a mapper or a landscape. It embodies more than a history or geography, more than spatial tension or historical conflict, more than its ideologies and its values. Rather, it is a sum greater than its constituent parts, party to an ongoing discursive conversation about spatial meaning, practices and being.

**Epistemologies**

Cartography, like geometry and mathematics, has a complex relationship with the notion of ‘truth’ and transcendence, born out of the Enlightenment through the scientific methods that produced it (Harley, 1988b). This relationship was further complicated in the second half of the twentieth century wherein geographic information systems (GIS) became increasingly widespread and solidified as a practice of science and engineering (Rankin, 2016), and thus embraced notions of authority and truth-as-fact even beyond the realms of earlier iterations of cartography (Pickles, 2000). Mobile mapping has inherited this relationship and expanded it into the quotidian, the mobile and the embodied, as mobile applications, GPS capabilities and any number of other kinds of geographic information systems intersect with everyday navigations. The discourses in mobile mapping, like cartographic reason, suggest that the information displayed on mobile maps are a higher truth: truth in scientific methods deployed towards the delimitation and calculation of spatiality and experience – and that such information can be trusted more than the perception of the user or the fallibility of the landscape. This is evident when maps and navigational devices make absolute claims about distances between places or the journey time that will be taken through algorithmic practices, or when drivers follow their GPS devices into rivers or the wrong way down one-way streets. It is also evident in its use of cartographic principles that Harley (1992) so criticised:
taxonomy, measurement, calculation. In addition to occupying the position of a higher transcendental truth achieved through scientific data-based inquiry, cartographic reason also suggests that it can lead you to some other higher truth through the description of the world in image and text. Together, these dual truths claim to be able to transform mobile mapping practices and lead to an externalised cathartic understanding of the space-times and subjects which mobile mapping represents, the metaphysical level of res mentalis which Leibniz described, or the dualism between Descartes’ mind and body. You are the blue dot, even though in the vein of Magritte’s Ceci n’est pas une pipe, you are not the blue dot (but yet you are, etc.) (cf. Gamson, 1991).¹ Thus mobile mapping is, in Olsson’s (1993) words, a chiasm of thought-and-action: thinking, being and doing all at once. The claims of authority that mobile mapping makes on the world are simultaneously representational, post-representational and non-representational, material and immaterial, and phenomenological and post-phenomenological. This makes its appearance near-impossible to disentangle through mapping either its materialism or the breadth of its objects, or by trying to trace its foundational structure.

The variety of methodologies that surround the current analysis of media have, like mobile mapping, a distributed and discursive relationship to certain epistemic traditions surrounding space and representation. What we see here is a contemporary constellation of philosophies, technologies, representations and practices that are firmly rooted in Western philosophical discourses, as they have transformed and dispersed throughout history and geography. I propose, here, that principles from Foucault’s archaeological method offer a productive way forward in bridging the contradictory, heterogeneous and fluid practice of mobile mapping, to look beyond the map, or the phone, or the subject. Foucault had similar questions to Olsson about the way in which discourse operates between bodies, institutions and knowledge. Deeply influenced by his mentor Jean Hyppolite’s ongoing engagement with Hegel, he sought to uncover the positivities that structure the world, grand systems of knowledge that seemed beyond question and reproach. In his own words:

At the moment when the broad system of scientific and philosophical rationality produced the general vocabulary with which people have

¹ Leighton Evans discusses this phenomenon of the blue dot and its phenomenological consequences in his ethnography of Foursquare users in Locative Social Media: Place in the Digital Age (2015).
communicated since the 17th century, what happens to those whose behaviours excludes them from this language? This is what intrigues me. (Foucault, 1985: 3)

This is a point of intrigue for me, too, albeit in a digital age. Here, Foucault points to a line of questioning that asks what happens to things, people and events that fall outside of the vocabulary, concepts and systems of knowledge that we use to understand, research and think about the world. What is particular is the way in which he suggests going about exploring these absences. Citing misgivings about the way in which contemporaneous zeitgeists (such as phenomenology) dealt with the perceptual position of the subject while, at the same time, reasserting a fundamental and transcendental search for purity in being, Foucault aimed to try to free history from the grasp of experience, while at the same time, undertaking a 'history of the present' (Foucault, 2002a).

To find these answers, Foucault looks to the archaeologists, who in digging into the ground, encounter remnants and objects scattered about the earth – a clay pot here, a copper coin there, at varying depths and locations. From this collection of objects, the archaeologist must interpret and piece together an ancient history. This means not considering the object alone but as a series of other objects, which have symbolic, linguistic and material similarities (regularities, in Foucault’s terms). While cautioning against a linear geological interpretation, Foucault still suggests that this method can be applied not just to a history of objects, but to a history of ideas. Arguing that the etymological fraternity of the term ‘archaeology’ bears relation to ‘arche’ (as in Grand Arche), he puts forward that such a method should focus on monumentality rather documentation, that discourses irrupt as events, words and things. Just as the archaeologists encounter fragments of the past through ad hoc collections of artefacts and relics, we, too, encounter discourses in similar disarray, an archive of similar statements scattered throughout all the things that have and have not been said, and have erected monuments to the shifts in thinking and understanding. This corpus of statements constitutes a discursive formation, that is a continuity of thought and action which has been dispersed and reassembled across space and time, scattered throughout the archive of all the things that are ‘already-said’ (Foucault, 2002a: 160). As Foucault writes, ‘archaeology tries to define not the thoughts, representations, images, themes, preoccupations that are concealed or revealed in discourses’ (Foucault, 2002a: 155), but rather attempts to define the discourses themselves, as practices. We find these statements in the formation of the cartographic – the naming of roads, and
GPS tracks – and also in absences, the ghostly spatialities that do not appear but haunt the surface of practice, memory and movement.

Furthermore, the pursuit of discourse allows opposing thinkers to be placed side by side and their systems of thought to be dissected from a lens of contemporaneity: Nietzsche, Freud and Marx, for instance, despite incompatible rifts in their philosophical work,\(^\text{2}\) epitomise in the nineteenth century shift towards interpretation as a mode of analytical reasoning: they deploy the same tools, but produce vastly different sculptures. In this, archaeology provides space to look beyond the textual questions surrounding mobile mapping, and to instead deal with it as both historical and material and yet also contemporary phenomenon: to place a seventeenth-century map next to a mobile digital map and ask what here are the similarities in thought and wherein can we find discord. At the same time, mobile mapping practices are lived, they also bear continuity with other parallel systems of thoughts, and even at certain points, intertwine.

The discursive statement has an inherent relation to other statements. It is easy to see how this may be understood in mobile mapping practices, for they are admittedly pastiches of discourses, languages and spatiotemporal performances that draw from many different space-times: coordinate systems are not always expressed by computers, but may be drawn by pen and paper, for instance; a phone has more uses than telephony; swiping and clicking is used for multiple kinds of navigation. Statements also have an associated field, which Foucault describes as a ‘domain of coexistence for other statements’. In essence, an associated field means that a statement enters into dialogue with other statements in that domain, as they shape and reshape each other. A mobile map on a phone, for instance, does not exist in isolation, but engages cartographic reason and transforms it, by providing models of reasoning in new and different ways, through different tools like computation, automation and sensing. A map on a mobile phone is part of a collection of other objects and processes that produces and is produced by it. This might include the form, content, meaning and structure of a map, as it makes reference to, borrows from and contributes to other mappings. Therefore, this field is always in flux. Here, we might find a reduction in the philosophical distance between epistemology and ontology in critical studies of mapping and GIS (Leszczynski, 2009a; Pinder, 2007), a lack of separation characterised by mobile mapping, but has proved difficult to overcome in theoretical work. So, when approaching the limits

\(^\text{2}\) Even Foucault, at one time describing his position and dalliances with Marxism, said that to be a Nietzschean communist would be laughable (Foucault, 2001a).
of the epistemological in this research, there are also slips into questions of being and experience. As Olsson explicitly states while exploring the concept of representation in geography (of which cartography is a crucial member): ‘The braiding of epistemology and ontology is inevitable, even though the former activity tends to dominate during some periods, the latter during some others’ (Olsson, 1991b: 205). He argues that by rejecting the power of this dichotomy, as well as its links to both the phenomenon and the subject, the ideas of Lacan, Barthes and Foucault (who we are dealing with here) reject the Cartesian faith of certainty in representation (that cornerstone of cartographic reason). Understanding – or knowing – does not always have to be linguistic, even though its communication must be. And so, the epistemological stance of this research instead embraces the question of representation/reality as a space where we might excavate, critique and rework what Olsson has called ‘the revolting ambiguity of the taken-for-granted’ (Olsson, 1991b: 121).

Methodologies: Walking through the archive

This research was gathered from seventeen video-recorded walking interviews (nine in Sydney and eight in Hong Kong), where those-who-walked went wherever they wished and I followed along: chatting, asking, listening. These interviews were followed by a period of archival research, where I traced the patterns and ruptures of these walks in the formalisation of cartographic reason and the materiality of the landscape. As I wandered through space and time with each of these navigators – people who were kind enough to let me tag along, as they went about their everyday lives – mobile mapping proved to be an amorphous and powerful practice. Because of the disintegrating fixity of the mobile mapping, and the increasing rigidity and expansion of cartographic logics, these walks became a series of fuzzy but still political statements – not in dusty documents or books – but in the archives of memories, spaces and landscapes where cartographic reason has succeeded and failed. Furthermore, unspoken unities began to appear, collections that were not necessarily representational, but were embedded in gesture, in practice, in a lack-of-words, or an intuitive feeling, hauntings, ghosts: things that keep messing everything up. As I understand it, these frictions form the membrane between space and the fixity of representation, and by inching towards it through the discourses that irrupt and the wounds that they open we may perhaps be able to get a better sense of what mobile mapping is.

This project is implicitly critical of the restrictive nature of unified theories regarding knowledge and the tendency towards cohesive, univocal
epistemologies that act as colonising forces (Foucault, 2003; Massey, 2005). Through searching for ways out of the fixity of representation, this research sought to trace the momentary, multi-pronged assemblage of heterogeneous spaces, cartographies and digitalities. This was the focus of the methodological design – to see if it was possible to trace a path into a mode of research that was one of valuation, not evaluation (Manning, 2015). This process was at once focused on the embedded and porous, sibylline and delicate. Clifford (1997) argues that sociological ‘street-corners’, or ‘sub-cultures’, and anthropological ‘villages’ are no longer isolated, no longer distant enough from the transnational forces of globalisation where the local and global collide in immersive ethnographic work. Humans may be, as Olsson (1991a) suggests, still bound to thrash within the epistemological limits of representation as we struggle to imperfectly conceive and communicate our bodily lives in a world shaped by cartographic reason. Such limitations are also housed in within the paradigms of methods. In a digital age, two lines – 0 and 1 – have come to increasingly define the scope of research and representation, from the archive to the village to the street, in a symbolic exchange that Baudrillard (1993) argues is entirely self-referential. But not all lines are the same; even vectors can be transformed and systems warped. As Haraway (1991) suggests, we still maintain the possibility of shaping our research and our concepts into regenerative politics, journeys towards elsewhere, and relentless artifactualism. Against the fetishisation of modern, rational, scientific methods, and their manifestation in cartographic desires for calculation, categorisation and homogenous systems of order, we can instead focus our methods on movement rather than fixity (Sheller and Urry, 2006), possibility rather than validity (Denzin, 1989), knowledges rather than facts (Saukko, 2003), as they emerge in the course of heterogeneous experiences.

In *Eye of Power*, Foucault writes:

> A whole history remains to be written of spaces – which would at the same time be the history of powers (both these terms in the plural) – from the great strategies of geo-politics to the little tactics of the habitat, institutional architecture from the classroom to the design of hospitals, passing via economic and political installations. It is surprising how long the problem of space took to emerge as a historico-political problem. (Foucault, 1980: 149)

There are two forces at work here. One represents the ‘great strategies of geo-politics’ as the dispersion of statements across time and space, through
processes like rationality and colonialism. The other, the ‘little tactics’, are the banalities through which the discursive formation becomes spatiotemporal, and which create spaces of surveillance and control, both explicitly and implicitly. For Foucault, space is that which allows discourse to scale between the grand narratives and histories of the Western world and the habits and practices of everyday life. Between open-ended walks and archival research, we can see how, with colonialism, imperialism and globalisation, discourses have travelled across the globe to be situated in landscapes and geographies far removed from those in which they were dreamt: Why have some discourses travelled, while others have not? Why did the flat survey prevail when other forms did not?

Discourse, for Foucault, is a ‘series of events’. However, thinking of discourse as ‘series of events’ is less helpful in its linearity. Foucault attributes this linear framework to his study of history, a discipline that is chronological and deeply teleological (in Wade, 1978), yet it still foregrounds the expansion of Foucault’s thinking from the temporal into the spatial (Foucault, 1984; Crampton and Elden, 2007). The complexity of the digital map as interfacial, interactive, graphic and coded means that even within its own systems of representation it may embody multiple discursive statements at once: coordinates, codes, colours, computation. Furthermore, because the map is drawn from a server to be instantaneously reproducible and personalisable on multiple devices – a system of thinking, rather than a fixed representation – when this system flows down onto multiple phones, the same map makes multiple statements at the same time yet in different spaces. Finally, each of these statements appears at different points and modulations along a trajectory of transformation: a map on a phone, like those of Lt Cook, for instance, may embody the semiology and hermeneutics of the Age of Reason but may also be coded and recoded, adhering to epistemological logics old and new at the same time. Thus, a ‘series’ is inadequate if it is the only axis along which statements are understood to disperse: this series must have a spatial axis, as well as a temporal one. Instead, I suggest emphasising the spatiality of discourse through Foucault’s descriptions of statements as ‘archives’, ‘fields’ or ‘domains’. The spatial dispersion of cartographic reason – from its first encounters with landscapes to its unyielding tracking of bodies – lies within the residues of space, as well as time, and so for this reason, this method focuses less on the event, but on the moment. Thus, drawing on McFarlane’s (2010) writing on comparative urbanism, the question is less about ‘when’ the moment is buried and exhumed, but ‘where’.

This is where we turn to the stories laid out in the coming chapters of this book: these stories are filled with moments and statements that
brush the edges of the membranes of our knowledges. Foucault’s event is focused on the enunciation of a statement (why here, why now, why not something else) and the conditions that made it possible for it to be said, buried or unspoken. Here, Foucault (2001f) identifies a ‘moment of discourse’:

Each moment of discourse must be welcomed in its irruption as an event; in the punctuation where it appears; and in the temporal dispersion that allows it to be repeated, known, forgotten, transformed, wiped out down to its slightest traces, and buried far from every eye in the dust of books. Here is no need to retrace the discourse to the remote presence of its origin; it must be treated in the play of its immediacy. (Foucault, 1998: 306)

The moment at which discourse appears is the ‘play of its immediacy’, the moment when it is spoken above all other discourses. Immediacy is not interested in the origin, the alluring promise of comprehension that was so tantalising to the thinkers of the seventeenth century. It is interested in the coming together, the conditions of possibility and the surfaces of emergence, the platforms that are built through discourse so that it can be spoken. The play of immediacy is where the dispersion of statements across space and time (geography and history) becomes localised into the personal, the habitual, the encountered and the experience.

Central to mapping ‘moments’ is an appreciation of shifts in the way in which statements themselves are dispersed: mobile mapping, as a discursive practice, is not characterised by a discursive singularity. In the final chapter of *Rethinking Maps*, Dodge, Perkins and Kitchin (2009b) put forth a manifesto for rethinking the way in which mapping has been studied. This manifesto explores three themes for consideration: modes, or the way in which mapping emerges through interface, algorithms or visual cultures; methods, undertaking approaches that focus beyond the map-text – economies, affect, or visual cultures; and moments, or performative situations of mapping which serve a heuristic purpose. They offer what they term a ‘tentative list’ (ibid.: 243) of potential kinds of moments: moments of failure, points of change, rhythms of mapping, memories, research processes and moments of creativity. Moments such as these accommodate the processual nature of mapping, and in doing so, they argue, are more likely to allow for critical modes of inquiry. What I want to argue here is that the conceptualisation of mapping ‘moments’ can be understood as more than a simple tool for uncovering political structures but rather as discursive and imbued within political structures that are thoroughly spatial.
These moments are not evenly distributed terrain. Since the moment is both spatial and temporal, the politics of scaling is apparent in everyday moments of mapping traced through this research. Povinelli describes in a conversation with Berlant that the nature of a quasi-event in a state of late liberalism: ‘quasi-events have a different kind of force depending on where they occur in the socially distributed world’ (Berlant and Povinelli, 2014). Two events, equally minor in detached comparison may be immensely different in the space of their occurrence, even in the monotone spaces produced by cartographic reason. Where settler-colonialism and global forces construct monuments, a quasi-event which shows little by little how the same trickle of water can create rivulets and canyons, each speech-act collecting together. In the quasi-event, the moment becomes more quotidian, more political and fluid. Playing with the idea of the quasi-event, Povinelli explains how she prefers, instead, the term ‘becoming-event’: ‘the moment when peopled places gather whatever creative energies they have left to derange and arrange these kinds of flattening nothings into charging somethings’ (Berlant and Povinelli, 2014).

Again, like Massey, Povinelli finds in potential a gathering to ‘derange and arrange’ openness and positive heterogeneity: Why artificially flatten the world when its uneven textures speak for such possibility? As moments, mobile mapping practices encompass a multitude of scales. However, rather than space stretching between two points – one near and one far, all discursive scales appear at the same time. From feelings to buildings to digital maps to grand visions of universality – all of these elements emerge and speak at once – a conversation in which individual voices are barely perceptible. And so, they must be amplified. Thus, there is also a possibility in space for the moment to be a point at which other knowledges begin to have valence in silent presence and absence. Moments of mobile mapping are filled with friction, multi-temporality and coevalness while being beset by technological failure and communication breakdowns. Each moment is a glimpse of simultaneous and dispersed encounters between the near and the far. Again, this is a particular project to reopen space to possibility and draw it away from being a flat surface of inscription but something that is generative and productive.

What Foucault (2002a) wished to emphasise in talking about enunciation is that speaking is closer to utterance than to creation. This makes subject/author (say, the mapper) and object/creation (say, the map) more ambiguous. We could think, here, about a piece of code that does not have a single author who remains in charge of that creation but its constant emergence as it acts. Similarly, passages from a book may be cited or reinterpreted.
by another author (as in here), a map may be copied, transported, used in
different situations for different purposes, code may be amended, engaged,
copied and pasted into different software and transformed by plug-ins, new
data or other iterative practices. What we can learn from the moment is a
way in which we can imagine an archaeology that reaches beyond the flat
statement of a text or a body. Instead, we can begin to define and collect
moments together, moments where maps fail, people get lost or remember
or discover, moments where space and representation constellate, and
consider this in light of discursive formations.

Understanding the impact of the dispersion of cartographic reason,
encountering its appearance into mobile mapping practices, and sensing
the silent presences and notable absences created in its shadows is central
to how we can conceive of an archaeology as it is encountered or as it is
dispersed through space and time. At the same time, the ambiguity of
ownership of stories, histories, pasts, memories and experiences does not
excuse the uncritical capturing of other people’s knowledge under the
guise of what Gordon (2008) calls ‘empirical safety nets’. The question of
‘whose voice, whose words, whose image?’ is at the forefront of this book.
Given the open nature of the interviews, the majority of the stories, experi-
ences, vernacular epistemologies, philosophies and mapping practices are
not mine to claim. With their permission, I have used the first names of
each of the people who appear in this book or used a pseudonym of their
choosing. Names, we will learn, are important, as are words, experiences
and memories. This methodology avoided the axiom of anonymisation that
comes with institutional research where, in specific situations, vernacular
knowledges are set against academic and scientific authority, without
recourse for talking-back or claiming knowledge by participants (cf. Nespor,
2000).

I was unprepared for the full force that the stories and moments of other
people would wreak upon this research. Gladly, I gave up the roles that I
would normally take on, and each person – Marianna, Kyja, Tania, Sarah,
Nick, Shaun, Cliff, Benjamin, Cassie, Daren, Ellen, Ravi, Vicki, Taylor, Camille,
Magdalena and Mohammed – were pilots and navigators in their own
journeys, and I, a curious co-pilot, being shown the ropes of their lived
spatial practices. This inversion was disruptive in more ways than one. I
did not steer or guide their journeys, even though I knew both cities quite
well. The process of sitting on a bus as we moved past the stop, took a wrong
turn or a different street, walked a different way, climbed steep hills, read
the map for five minutes when the building was right in front of us (I could
go on) created levels of discomfort and disconcertment (Law and Yin, 2009)
that were challenging. This discomfort was productive and critical. It sat as a constant reminder of both the politics of research and that subjugation and resistance occur in heterogeneous ways.

Literature in both anthropology (Coleman and Collins, 2011) and the social sciences (Williams and May, 1996) underscores the problems of positionality, gaze and authenticity within interview techniques, especially in light of the ethnographic criticisms of traditional pseudo-objective anthropological research methods (Clifford and Marcus, 1986). The theoretical lens of this research was implicitly critical of how cartographic reason overemphasises calculation and classification in understanding spatial experiences. This concern bled into the empirical design, too. It was difficult to find modes of recording that do not bear the hallmarks of calculation – especially in a digital age. Still, there was potential for reflexivity in this process, too. To ‘cut’ (Manning, 2015: 58) is to append a kind of fixity in research, either towards organisation or openness, in the hope of generating immanent critique. The decision to use an ‘action-camera’ (a small digital video camera designed for recording extreme sports) was quite pragmatic, but not perfect. Action cameras are small, lightweight and weather-resistant devices that addressed some of these issues. They can be worn attached to the head leaving the hands free to use mobile phones, to press buttons, to drink water or whatever else was required during the interview. Action cameras have also already been used in field research where researchers and participants were required to undertake active or laborious activities (Brown et al., 2008). The camera required a constant embodied attention, holding the weight in one or both hands and mediating the subject of the film and my movement through space.

However, even in digital video, there is a ‘seductive veracity’ (Banks, 1990: 16) to the use of audio-visual or photographic recording methods: an illusion of verisimilitude interpreted as ‘the pure voice of the “other”’ (Banks, 1990: 16). Yet, even at the level of the digital visual rendering this seductive veracity was challenged. The lower resolution of the standard definition

3 I chose to use a Sony® Action Camera because of the ‘Steadyshot’ shake-reduction technology. The ‘Steadyshot’ set the field angle to 120 degrees rather than 170 degrees, and artificially smoothed the jarring. Video was shot as MP4 at a mid-range resolution (or standard definition) of 1280x720 with a frame and playback rate of 30 frames per second – any higher in definition and the file size was too large, any less and it was unwatchable and inaudible. A higher aspect ratio allowed more spatial data to be included and reduced the risk of the participant disappearing from the frame. I habitually carried spare batteries and, on rare occasions, had to interrupt the interview in order to change batteries. This led to multiple video files for single continuous interviews that I grouped together and moved to a secure drive after each interview.
recording produced a dream-like quality, blurring lines and undefining visual geometries. The lines of the bitmap appear skirting the edges of clarity. Strangely on the hotter days, the image warbles, steam forms in the inside of the waterproof plastic case and when it is windy, sand, dust and pollution obscure, blur and warp the picture. Imperfect pictures led to disconcertment – the stills you see throughout this book are not pristine, absolute evidence. Instead, I present partial moments, fuzzy and suggestive to give impressions of how space, cartography and the digital might emerge together and apart – even in discomfort.

By way of writing, this discomfort continued. I have chosen not to smooth over any of the disconcertments and tensions. These are productive, for they disrupt both my gaze and yours, reminding us that our knowledge is modest, our practices hegemonic, and our research, always colonial. For the same reason, in the translation of words into writing, the language used in the conversation has not been corrected – people speak how they do, and so I use the words that they speak, in the way that they speak them. Short of letting you hear their voices and see their faces as they were recorded, the best I could do is be reminded of Stewart’s use of Bakhtin’s translinguistics: ‘It is an effort to evoke some of the intensity and texture of expressive forms that voice a cultural poetic embedded in a way of life and the politics of constant subversion and reproduction’ (Stewart, 1996: 10).

For perhaps the same reason, some people agreed to have their faces shown – even though I checked twice, and once more again as this book moved into publication. Most were keen to have images shot with the action camera that now accompany their words on these pages. Those who wanted their anonymity preserved chose their own names, and let their hands, their words, and the spaces where we walked might speak for them. Finally, on questions of race, ethnicity, class, gender and sexuality – these were not an explicit part of this project. That is not to say that these social, cultural and economic inequalities are unimportant. Rather, I wanted to give each participant room to shape their own narratives, to let these kinds of macro issues which have been profusely written about in academic literature on cartography emerge in the everyday, under the terms, categories and classifications that each person wished. This wound back into the implicit distrust of the uncritical acceptance of categories and classifications – especially of bodies, pasts and spaces. These emergences have appeared at the behest of spaces, memories and bodies – rather than that of the map, the academe or the desire for clarity. Thus, they, too, are muddy, winding with other experiences, labelled otherwise or not at all, and inchoate in their textures into the world.
In the coming chapters, the writing of these stories is presented as a series of moments, falsified, in a way, into text. But what made these particular emergences important is that they appeared in the stead of something else. Sometimes this was the full force of discourse, shaping the world, and sometimes it was a moment in which the unspeakable made itself known in different ways, casting the powerful to the side. This is a less-traditional reading of Foucault, for whom knowledge and language are intertwined. The discursive practice of mobile mapping, most especially here-now of the statement or speech-act, is at the ‘limit of language (langage)’ (Foucault, 2002a: 126). The limit of language, a precipice upon which Gunnar Olsson made his home, is, in his own words, abysmal (Olsson, 2007). Discourse is always linguistic, language always discursive, locked in a battle that is fixed on the mode of representation that Massey so laments. Unlike Olsson, Foucault suggests that there is no precipice, no chasm and no abyss: even the smallest instances of language remains on this side of that edge: ‘the sudden appearance of a sentence, the flash of meaning, the brusque gesture of the index finger of designation, always emerge in the operational domain of the enunciative function [...] the conditions according to which the enunciative function operates’ (Foucault, 2002a:126). For Foucault, there is nothing but language, nothing exists beyond it and so the excavation of something otherwise – space, and perhaps haunting – which enunciates in ways that we do not always comprehend seems perilous. When we consider these limitations of language, perhaps here we are better visiting the teetering house of Olsson and Massey, rather than the more secure one of Foucault. There are always words that are untranslatable from one language to the next, founded on inherently contradictory principles of imagination, discourse and belief. This trouble is seen time and time again in postcolonial contexts – the inability to accurately translate street names between Cantonese and English in Hong Kong, for instance, the mistranslation of the meaning of songlines in Australia, another; and the uncomfortable hybridisations between Indigenous and Western mapping practices that followed colonisation.

I use the term 'Indigenous' here following Hostetler (2001) as a way of avoiding prevalent Western narratives of progress in describing mapping practices: the terms 'traditional', 'primitive', or 'early' imply that there is a natural course of cartographic development, and that non-Western societies were slow to develop along this axiom. This is not an accurate depiction. Mappings across the world occupied many traditions and forms, and were replete with diverse values and functionalities that worked in the specific context of those cultures. A cartographic paper map of the terraforma of the Sahara dunes would not have been useful – the dunes shift and change with time: navigation by stars was more practical. In mapping, pragmatism is embedded in
For every word spoken, there is a host of other words which were not. So, the descriptions in this book are about moments of knowing rather than a pure archaeology of knowledge: Why and how did they come to be in this space and time? This is where discourse is also material, or ‘material-discursive’, according to Barad’s (2007) reading of Foucault. Foucault specifies that every statement must have a materiality. For a statement to be enunciated it needs to enter the world in some material form. The first kind of materiality that Foucault describes is a substance, like an image or a piece of film. But, in the complexity of mobile mapping, we might also find materialities in bytes on a memory chip, sound waves, vibrations, the touch between a body and a screen, an element on a landscape like a building or graffiti or a mark, silence, fumbling, a trip or fall, a facial expression. The second kind of materiality is a status, a type of longevity with rules for transcription, or re-transcription: use and re-use to become part of a field of statements. It is here that I argue the openness of space and the fixity of cartographic reason come into most contact. Status relies on the potential for dissemination – for a map to hold authority through its form as an (im)mutable mobile against the silence of the raw memories and ghostly matters. Yet, haunted spaces and subjugated knowledges have also have different modes of translation (if not transcription) through invisibility and hypervisibility. This is a key interest here: matter matters (Barad, 2007), for the same reason that the ghostly matters (Gordon, 2008). Cultures have ways of handing down their stories and their fleeting impressions of the world one way or another, in secret or otherwise. Sometimes these are left behind to be rediscovered (sites of trauma, for instance), others are ceremoniously given over to a new era, stories that may be told, or written or drawn or etched over millions of years into the landscapes. So while it may not be very appropriate to call this form of materiality a transcription or inscriptions when we are not specifically talking about scripts – matter retains information in ways that are deeply cultural. Whether these are landscapes which hold the past and determine, the waves made by voice boxes, instruments, animals or atmospheres or glitches that arrive when circuits malconnect, signals trip and lights stutter and die, discourse always has a material form. At the same time, while the discursive must be material, the material does not always need to be discursive: storms rage without human eyes, and stones stand without human words.

discourse: the European need for precision and mathematics came from the measurement models used to navigate ships, and the perils of the triangulation being off. Different practicalities were needed Asian and the Australian continents.
Anarchaeology

What Foucault’s explanation of discourse offers is a stabilisation of sorts between representation and performativity, somewhere between Descartes and Leibniz (while being nowhere near them at all), and, like Massey (2005) between representational fixity and topological fluidity. Archaeology suggests that statements in and of themselves are less important than the rules of formation which they contain – a dissolving map interface, a transforming landscape, even a wandering user, are not superficial texts, but rather profoundly intertwined with other things that have been said and done in other places and times. Thus, in investigating discourses, in trying to identify the politics and grand structures of knowledge and language which appear in mobile mapping, the text and iconography of maps that critical cartographers such as Harley (1988a), Wood and Fels (1992), and Cosgrove and Daniels (1988) once analysed, are not as important as the regularity between ways of thinking. In short, what we see here less a deconstruction of a text (pace Derrida) than the uncovering, mapping and analysis of ideas. These ideas are at their root dispersed across space and time, they are processual, building from ‘previously formulated statements’ – they link between the minute and the massive, between memories and institutions.

But this is not a complete solution: Foucault makes much of words and things as enunciated factors of discourse. Yet, the digital elements of mobile mapping are characterised by the increased velocity of the world, where both words and things are rapidly approaching the asymptote of immediate obsolescence. What I suggest here is to reconsider words and things: to find the rules of discourse that is characterised in mobile mapping in that moment. As knowledges and experiences collapse, can we mark out the moment of discursive appearance as both an epistemic and practised at once? Mobile mapping constitutes a performed knowledge, as well as a knowledgeable performance. Can we conceive of mobile mapping as an archaeology of experience, of the moments in which a statement is enunciated, an archaeology of the act of knowledge? De Certeau (1984) certainly thought so, marrying Foucault’s work on mechanisms of power with a Bourdieusian analysis of practices. However, much of De Certeau’s analysis of the relationship between Foucault and Bourdieu’s conceptualisation of ‘strategies’ rests upon control and the bio-political disciplining of bodies and spaces. This, too, is important in considering mobile mapping. But this particular relationship has already received attention from various researchers interested in the way in which certain mobile geo-technologies produce certain practices (Galloway and Ward, 2006), hybridities (De Souza...
e Silva, 2006), experiences (Richardson, 2005), patterns of consumption (Hjorth et al., 2012) and social norms (Hjorth and Khoo, 2015). What we need to consider is that the disciplining of mobile mapping is already built into practices, through the discourses like cartographic reason which received and conceived particular forms of language, terms of engagements, technological desires and spatial reasoning. Before mobile phones and digital maps, the disciplining of the body had already begun in equations that fixed the centre point of the world, modes of reasoning and rationalisation and defined the relationality of the subject to it (Olsson, 1991a; Serres, 2011).

Here, the practice of mobile mapping becomes linked again to the textual and the material. These walks were starting points for research, but not its entirety. This was a geographical archaeology in the moment, digital speech-acts *in situ*, a moving archive (Anderson, 2004), where, during the interviews, the cartographic apparatus branched out into time and appeared altogether at once in space and spatial encounters (Dittmer, 2014). The statements of the apparatus formed fragments of a living archive in mobile mapping assemblages. These fragments – cartographic imaginations petrified in landscape, images and architectures, and embodied in contemporary practices – then directed me back towards the archive itself. I drew upon Foucault’s writings on Deleuze where he cites difference and repetition, recurrence and phantasm, becoming and return – ‘the materiality of incorporeal things’ (Foucault, 2001: 947) – as key modes of considering representation.

The dispersion of statements, across history and geography, across time and space, is a central preoccupation of Foucault, and one of the factors which distinguishes his ‘history of the present’ from the teleological concerns of traditional historians. This, to a degree, reflects the way in which mobile mapping has integrated multiple trajectories of recurrence into the here-now, in both Sydney and Hong Kong, cities that were the products of a global imaginary from their beginning (Jacobs, 1996; Abbas, 1997). Both cities contain complex discursive interactions as a result of their colonial pasts and presents, germinated across multiple spatiotemporal scales: the immediate, experienced and situated intertwines with the historical, the geographical and the global. Foucault’s archaeology specifically highlights this kind of dispersion, providing coherence to the scattered archive of documents, names, places and experiences, moments, memories and landscapes. Significant theorists like Said have extricated a spatiotemporal emphasis from his notion of dispersion. In a time of colonialism, the geographical travels of European epistemes created a new geographical imagination.
(Gregory, 1994) which gazed upon alien landscapes with the eyes of colonial rationalities, or to borrow Ryan’s (1996) phrase the ‘cartographic gaze’, via the transportability of ‘immutable mobiles’ (Latour, 1986) such as Cook’s maps of the east coast of Australia used by La Pérouse. This notion of dispersion is important in understanding how Leibniz’s calculus or Descartes’s grid system comes into being in spaces thousands of kilometres away, several hundred years later, while the delight of the Kerala mathematicians in solving calculations for no practicable purpose (Joseph, 2011) occupies a different realm. It is also important in discovering in the unities of statements made through mobile mapping with maps, images, or stories or writings made in other spaces and times.

As such, the interviews described above were accompanied by a period of archival research in both Hong Kong and Sydney (Lorimer, 2009). Foucault (2002a: 145) writes that an archive is a ‘density’ of discursive practices made up of statements – that is, a collection of things that have been said. The role of the scholar is to do what Nitecki calls ‘making connections’ (2008: 37). Through archives, the process of the cartographic inscription into space could also be traced: what kinds of discourses appeared in the archive at the point of ‘conceiving’ space and how they were then inscribed into the landscape. This focused on the role of the ‘representational’ in the ‘more-than-representational’, or ‘putting maps back into ethnographic mapping’ (Brennan-Horley et al., 2010: 92). Dodge et al. (2009b) emphasise the processual aspects of mapping – or how maps and plans (and in turn, landscapes) come into being. Although many of the early maps of Hong Kong and Sydney were either available online in digitised archives or historical atlases, I was particularly interested in any earlier ‘draft’ versions of these maps that might be available and the kinds of cartographic techniques that planners and map-makers used. By considering largely forgotten sketches, it was possible to also reconsider the archive as ‘epistemological experiments’ (Stoler, 2002: 87). That is, in effect, to view the archive as something living (Hall, 2001) which produces varied affects and evokes memories in different spaces and at different times, which can be reworked into a critical tool for reimagining everyday life (Kirsch and Rohan, 2008).

In Les origines de la géométrie (2011), Serres critiques the origins of the arch and archaism in European thought, and its links to the hierarchical. From the archaeological to the architectural, to the archive and the archaic, the sacred geometry of the parabola invades so much of European symbolism and materiality, embedded in history and buildings, living and dwelling. For Foucault (2002a), the arch is monumental: a perfect bow, a sublime geometry, an erection to triumph, a rainbow crossing the sky. The curve is
repetitious and recurrent, appearing wherever we look. For Serres, the *arche* also demands hierarchies of knowledge, based on reason and the power of visibility: ‘power lies in knowledge, the way the invisible lies in what allows seeing’ (Serres, 2017: 47). So, in a subtle counter to the monumentality of geometry, and its necessary basis in hierarchies, discursive relations, Serres (2017: 41) questions ‘if an anarchical system can be conceived’? This kind of system decries hierarchies of knowledge and decentres the centre – sun, king or model – and does not gaze from above (and forget how we are complicit in making the world) or below (and accept our subjugation as ordinary). Given the back to front aims of this research, the subjugation of the formal to the vernacular, the past to the present, the geographical and geometric to the geo-? (Reichert, 1998), the known to the unknown, could we not think of this project here as an exploration of the anarchive, anarchaic, anarchitectural: an anarchaeology? Can we not flatten the hierarchy, and create new ones?

Thus, by situating this method into the every day, the banal, or what Gerlach (2010) has called the ‘vernacular’, the epistemological foundations of this approach are not monumental but momentary, not formal but formational, not final but fluid. Like the anarchic, these are conversations about the meaning and experience of the heterogeneity of space – an anarchaeology as it is encountered through discourses and ghosts lingering in space, stirring up memories and shaping practices with their lingering traces. This is a conversation about what it means to live in postcolonial landscapes somewhere between discourse and space. In digging through the present, it is inevitable that other debris, too, will be upturned: landscapes that predate rationality and hauntings of the subjugated knowledges do not exist in lines, or points, or curves or squares. Rewatching each interview and tracing differences and repetitions, recurrences, phantasms, I searched through the archives looking for discursive regularities or dissonances in the irruption of cartographic reason, for material enunciations of abstracted ideas; the difficult border between order and disorder. Such a search was not limited to the form of statements, but rather to epistemic and discursive formations: numbers, geometries, quantifications and taxonomies as they appeared in maps, sketches and plans. The documents obtained from the search, therefore, included journals, newspapers, paintings, sculptures, architectures, correspondence and fiction. They are also sometimes draft

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5 All readings of *Les origines de la géométrie* are from the original 1995 French version published by Juilliard. However, given a recent translation has been released, direct quotes in English are taken from the 2017 version *Geometry* published by Bloomsbury.
documents, leaves of preformal knowledge, lemmas in materialisation, cartographies in formation, made with pencil, charcoal or chalk. In Hong Kong, I visited the Central Map Library, the Survey and Mapping Office and the Public Records Office. In Sydney, I visited the Mitchell Library at the State Library of New South Wales (NSW), and the City of Sydney Archives. I also visited the National Library of Australia in Canberra, where I spoke to archivists about their collections and to the curators of a special exhibition of antipodean cartography, *Mapping This World*. Moving through the catalogues of primary materials dating from 1770 in Sydney, and 1830 in Hong Kong, I requested documents from collections that specifically focused on the urban design of each city in the formation of its first 50 or so years, and major events after that which made their ways into the interview dialogues – the culverting of the Tank Stream, the development of the Central-Mid-Levels escalator and walkway system, the production of the Kai Tak Airport, the Great Depression and the building of the Harbour Bridge etc. I kept notes of documents from archives that I had viewed, and information that was given to me by archivists, curators and map librarians about where I could find information if the archives were not available.

These uneven processes created uneven levels of depth. Despite the apparent regularity of a field of statements, such a field is neither whole nor complete – the teleology of statements is not linear, and nor is their spatiality even – in Foucault’s words, groups of statements are not a totality, but ‘an incomplete, fragmented figure’ (Foucault, 2002a: 141). The complexities of colonial archiving (and post/colonial control over documentation), at times, created a frustrating skein, many archives maintained maps that were copies (and sometimes photocopies) of the originals. Many sketches were not digitised, and so no preview was available. Furthermore, the semantic meaning of what a ‘sketch’ was, changed from archive to archive (and, indeed, from document to document). Given that many of the more official historical maps in Hong Kong had been relocated to Kew as part of the British withdrawal, it was far easier to find sketches and correspondence, because this was mostly what had been left behind. Yet, these abject, discarded and resolutely material items had a power in their own right which appear in each of these stories. Often beyond the ken of the walker, they still emerge and bubble beneath the surfaces of both each moment, as well as the process of research: ghosts of still-colonial hauntings, of the politics of knowledge, ownership of documentation and who has control over history. Across both interview and archive, we find hauntings persist.
Here, hope is offered to us – a wisp of the potential to, however temporarily, grasp mobile mapping practices in the moment of their occurrence, and to begin to untangle the skein of discourses, subjugated knowledges and pre-discursive agents that fill up that moment. The moment is not extra-discursive, it is not beyond discourse itself, yet it is beyond a single discourse; it is outside the statement in the singular. The moment is a singular that extends between the pluralities of discourses in space and time, between the distant and the immediate. What the moment allows us to see is the way in which statements are formed and enunciated, across the field of statements, and across the width of discursive formations. As becoming-event, immediate and immense, what the moment does is let flux free (in the mode of Whitehead). This moment is a fluid moment that is not still like a photograph, but rather has the sense of a hand placed in running water, as individual droplets spill and reform, creating different densities of force and flexibility of viscosity as it renegotiates streams, breaks, collects dust and dirt and turns into mist. A moment of mobile mapping is a frame by which we can undertake an archaeology as it is encountered in the everyday, in the banal and the boring: it allows us to move between the near and far, the side-by-side and the dispersed.

Yet, who is the subject and where do they appear? From where are discourses brought forth? This is a key investigation in this book and a key reason for the use of stories and ethnographies – the technology speaks, as does the landscape, as does the user, interfaces, graphic representations, algorithms, law, institutions, data. Mobile mapping has brought about enumerate subjects that speak at once in a cacophony of voices. Part of this project is to map these voices – to consider who, at particular times, is the enunciative subject/s and how their discursive statements enter into dialogue with power. These are discourses which continue to be lived but also need to be situated in the historical and the geographical. They are built into landscapes and languages, through which they come into contact with the ghostly. The formalisation of cartographic reason already has material-discursive residues which linger in the dispositif, to be encountered within the mobile mapping assemblage. Such phenomena include urban structures (such as streets, plans and pathways), toponyms, architectures, monuments and landscapes, whose documentary origins may be found within archives and traced into the present space of the research. With similar specificity, a subject is not the same as an author, but rather someone (in the vaguest possible sense of the word) who may utter, or bring into being the statement at this particular time and place. The collaborative nature of mobile mapping means that there are multiple invisible authors who speak at once
through countless channels: design, engineering, programming, interaction, planning, information, regulation and governance, advertising, philosophy. This is precisely what this book hopes to uncover: the conversations between discourses, between ways of knowing and being which occur in moments of mobile mapping. It sits somewhere between the flash of ghosts in the constellations of bodies, technologies and space-times, that which exists in the pre-discursive, that which cannot be expressed, and that which is expressed instead: an archaeology of mobile mapping.