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Inefficient Mapping: A Protocol for Attuning to Phenomena

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Introduction

This is a book about mapping and its potential for working methodologically with the complex readings of the world held in theories identified as speculative, emergent, feminist, immanent, post-, and critical. *Inefficient mapping: a protocol for attuning to phenomena* contributes to the book series Advanced Methods: New Research Ontologies by discussing how mapping inefficiently offers new possibilities for investigative thinking and process. Practices of mapping: recording features of the land, of places, of events are diverse. Mapping is materially, cognitively, corporeally, and digitally produced to function and perform the particular needs and agendas of each cartographer and each wayfarer. This diverse production and functionality historically established mapping as a trustworthy process in scientific and empirical research, however it also highlights the adaptability of different mapping practices to respond to the challenges of research projects that are intent on foregrounding uncommon perspectives. Indigenous place-based ontologies and Aboriginal wayfinding deeply influence inefficient mapping, however it is important to state at this point that I am a non-indigenous Australian woman, so I speak from this position. That is, I will not claim authority, and neither will I speak on behalf of Indigenous mapping practices and knowledges. I refer instead and throughout the book in my discussions about mapping directly to the scholarship, expertise and experiences of Aboriginal, Indigenous and non-indigenous others closely connected to Indigenous peoples and cultures.

Inefficient mapping is a methodologic protocol. The notion of a protocol is explained through the book and how a methodologic protocol offers results that can be artistic, can be cartographic, can be data, and which are closely connected to and push forward the research enquiry or curiosity. Inefficient mapping is presented as a methodologic protocol because the exacting controls of a protocol conversely spark creative problem-setting and problem-solving. Protocols are a common feature of artistic practice, so they are appropriate for inefficient mapping which uses different drawing techniques. My interest in drawing practices did not lead this experimentation, although I do love drawing and feel competent enough in drawing techniques to experiment with them. What lead me to this way of mapping was the challenge of how to think methodologically with speculative and immanent theories

and, how to bring theories into focus and make apparent “new forms of association”¹ through visually tracing affects and sensations in phenomena. I am curious about how new forms of mapping might offer different ways for visualising non-representational aspects through experimentations which embrace “not really knowing what the technique will help you do”², and through this, maintain the presence of immanent and speculative theories in the entire research sequence.

Books about methodologies should be useful and usable, therefore this book is designed to be taken out on mapping expeditions to be referred to, consulted with, and experimented with by those who are familiar or new to mapping. The core of the book explores a particular, *inefficient* approach to mapping, and how such mapping might take place as part of a research project. I refer throughout the book to my own project of inefficiently mapping urban citizenships and I provide example mappings from this research throughout the book to clarify and illustrate information. The method can be applied, however, to any investigation where mapping might be a useful tactic for reading phenomena.

This book organizationally follows the chronology of a research experiment, therefore the chapters are ordered so that the reader might find the book helpful as a practical guide to refer to, as inefficient mapping is trialled.

The chapter *Maps and mapping* introduces different practices and rationales for mapping and how western mapping practices have prioritized particular political intensions. The chapter describes how alternative mapping practices disrupt the semiotics of western cartographic practices, and different artist projects provide examples of the ways artists critically examine what it is to map the earth and what resides in mappings. Inefficient mapping is presented in this chapter as a critical mapping practice that critiques what constitutes an authoritative rendering of spaces and problematizes notions of cartographic authenticity.

The chapter *Chaosgraphics* follows and discusses how inefficient mapping records non-representational affects and registers in phenomena, in relation to speculative, immanent theories. This chapter presents the mapping documents as chaosgraphics; a neologism I have devised to describe how the mapping documents work singly or in layered arrangements. These single or layered chaosgraphs

¹ Derek P. McCormack, “Devices for Doing Atmospheric Things.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 105.

² McCormack, “Devices for Doing,” 99-100.

maintain the complexity of the happenings in the event. Chaosgraphs are presented as readable, however they forego easily digestible schematics of infographics in favor of abstract gestural marks, lines, and tracings that maintain their non-representational qualities. Chaosgraphs take longer to read because they aim to convey the chaos of activity in phenomena.

Following on, *Theoretical framework* discusses the theories that inform inefficient mapping and how inefficient mapping methodologically attunes to phenomena. The chapter asserts how immanent ontologies and the interweaving agglomerations of theory, critique, and practice are embedded in inefficient mapping and how inefficient mapping contributes to critiques of the dominance of Cartesian white, male, western exceptionalist perspectives on intellectual thought, scientific progress, and research. The book draws upon different speculative and immanent theories, including posthuman theories, feminist new materialist theories, critical-cultural theories, Indigenous and critical place inquiry. The chapter addresses some of the tensions that can arise when working with theories that espouse different readings of the world, and the focus of these discussions are around place-based theories and inquiry.

Experimental methods discuss critical readings of place and the problematics of applying methods designed to uphold colonial interests, to critical place inquiry projects. The chapter then engages with recent writing into experimental methodologies more broadly with a particular focus on non-representational methodologies, and how non-representational methodologies can pay attention to the *things* not commonly recorded in traditional research such as affects, registers, and sensations. Again, artist projects are included to help explain protocols as a methodologic practice.

Inefficient Mapping explores and explains the practices of mapping in situ and with various tools including paper-based materials as well as digital media technologies. The chapter has a practical focus and is intended to guide experimentations and trials with the process. Examples of mappings are included, and narrative accounts of their production help elucidate on details of the practice, and how they were directed by specific protocols. The chapter is sectioned via sub-headings to assist focused experimentation with materials, mark-making, and layering, and many mapping examples are provided to explain the processes in detail.

The chapter *Methods and data* considers the ways that inefficient mapping produces data, and this is framed within wider discourses of research norms and expectations and the tendencies to conflate methods and data. The chapter considers what data has come to mean in contemporary research, and what perhaps, are the new possibilities for conceptualising methods and data?

Finally, *Ethical wayfinding* examines notions of care and how practices of traversing the land must include an ethics of care for the histories and politics of a place. A wayfaring founded on an ethics of care generates wayfinding documents and practices that differ to colonial practices and the cartographic maps produced. Non-dominant navigational practices are proposed as an effective practice for wayfinding through phenomena, and the particular ways inefficient mapping aids wayfinding are discussed.

My hope is that this book prompts new reading for those who are unfamiliar with speculative and immanent theories, and critical place inquiry scholarship. I hope it will encourage further (critical) readings into cartographic and mapping practices and its cultural and political impacts. Mostly, I hope that this book ignites an interest and experimentation with inefficient mapping; as a stand-alone mode of research investigation or in partnership with other methods and tools. I look forward to seeing the evidence of this in the work and publications of others, and I am excited to see what directions inefficient mapping takes as researchers put it to work.

Acknowledgment to Country

I pay my respects to the Woiworung and Boonwurrung language groups of the Eastern Kulin Nations, on whose unceded lands I am fortunate enough to live and work on. I also pay my respects to the Turrbal and Jagera peoples, on whose unceded lands I conducted much of my mapping research.

In my acknowledgment to country I commit, as an educator, to embed Indigenous writing and scholarship in my teaching; as a friend, to speak up if I hear derogatory or ignorant views; as a parent, to nurture awareness and reconciliation as a core value; and as a person, to commit to supporting and building deadly Indigenous futures.

Maps and Mapping

Although mapping has been practiced across many different histories and cultures the dominance of western practices of mapping has influenced the mainstream ways space, place, movement and relationality are thought about. The very targeted “socioeconomic and political dynamics”³ driving western mapping has organized the world in terms of agricultural, economic, invasion, and governance potentialities, making land “readable as property”⁴ and an economic commodity due to these potentialities. Colonial mapping practices are so privileged and established it is difficult to think of the world through alternative geographic and geologic organisations. The ubiquity of western maps presents them as somehow impartial, reportage, reference documents free of any agenda, and faithfully charting the world without interpretation. Critical interrogation of western mapping calls out this ignorance however, by declaring that “Mapping always, at some level, involves violence”⁵ to the land, communities, the environment. The demarcating of land masses, seas, ice, and the linear recording of topologies and geographies via graphic simplification creates a frozen account of complex surface striations, non-human animals, communities, waterways that are always on the move. Western mapping has a violent history because it imposed bounded geographic edges to create countries and zones without consultation or permission or by paying any heed to the edges and boundaries established by those already living there (Cope 2018; Goeman 2008; 2009; Lucchesi 2019). The world became organized and determined through colonialism and war. Those orderings persist and the demarcations remain and maintain a violence through persecution experienced via governances that include migration, fishing, gambling, mining, dumping, bomb testing, religion and race.

Colonial forms of mapping, which segmented to assist trading and empire building also sought to erase cultures through toponymic practices that “voided the landscape of its history and legends”⁶. The act of changing a name is not only about

³ Paul Long and Jez Collins, “Mapping the Soundscapes of Popular Music Heritage.” In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 145.

⁴ Mishuana Goeman, “From Place to Territories and Back Again: Centering Storied Land in the Discussion of Indigenous Nation-building.” *International Journal of Critical Indigenous Studies*, 1, no. 1 (2008a): 1, <https://doi.org/10.5204/ijcis.v1i1.20>

⁵ Tom McCarthy, “Introduction.” In *Mapping it Out: An Alternative Atlas of Contemporary Cartographies*, ed. Hans Ulrich Obrist (London: Thames & Hudson, 2014), 6.

⁶ McCarthy, “Introduction,” 8.

cultural disregard, it is a violence of forgetting through erasure of ceremonial relevance, ancestral belonging, custodial duties and histories of that place. The smothering act of renaming halts the traditions of inheritance and care that are passed along over time. It also means that “for every ‘official’ map, there are two, five, twenty possible counter-maps”⁷. Counter maps are not simply maps that look different (if they are even a paper document at all), they can employ different modes such as through oral histories and stories (Goeman 2008b) to navigate and connect with diverse spatiality, readings and belongings to place, land, site and to the many material and living inhabitants that are in those places.

At this point it is important to assert that writing a book about an inefficient mapping methodology for publication in a series about new research ontologies is not suggesting inefficient maps have the same status as cultural counter maps. The maps produced by the inefficient mapping methodology do not endorse or continue western mapping agendas, however they are not disconnected from the colonial zoning and ordering of the world because they take place within it, including the hierarchies and privileges that exist because of these zonings. Inefficient mapping does however conceptually, theoretically and politically counter as it attends to different readings of space, life, community, presence, time, and belonging.

Western maps have been regarded as trustworthy due to their semiotics (Latour 2011), which infer “an accurate, even objective picture of the world”⁸. McCarthy recognizes however that maps can only do so much to chart the world, and that they do not attend to how actual living takes place “in the gaps: the oblique, morphing interzones between perspectival regimes”⁹ of the cartographer and the happenings taking place there. Even with the accuracies afforded by contemporary cartographic and GPS technologies, maps are partial because they are a specific reading of the earth. Maps created for purpose are “bound by the specific agendas of [their] creators and users”¹⁰ within contexts that purposefully omit or ignore details outside the context, meaning that much of the messy business of life is not regarded as worth noticing.

⁷ McCarthy, “Introduction,” 8.

⁸ Hans Ulrich Obrist, *Mapping it Out: An Alternative Atlas of Contemporary Cartographies*. (London: Thames & Hudson, 2014), 11.

⁹ McCarthy, “Introduction,” 9.

¹⁰ Obrist, *Mapping it Out*, 11.

The recent theoretical turns to complexity raise awareness of this messy business of life, which means mapping has great potential to go beyond recording topologies and geologies and to notice other aspects of this living world (Obrist 2014) such as movement, light, and time. Such maps might be made possible by rethinking cartography beyond its conservatisms and understanding that maps are an interpretation of place and space and that they are “artefacts people have created to do things with ... to establish the real”¹¹. Wood proposes that the interpretive foundations of maps makes mapping a “profoundly performative”¹² act to establish a factual account that has “ontological authority”¹³ over the topology but also the goings on, histories, and politics of a place. If mapping is performative, then mapping can be used methodologically and for other performances of reading the land, within other contexts and for other beneficiaries. The performative nature of mapping opens up methodologic possibilities for contesting notions of authenticity and neutrality, recording places in all their subterranean complexity and movement. Mapping has immense methodologic potential, then, due to its ability to immediately communicate diverse information pertaining to different agendas: political, economic, cultural, racial, spatial, environmental, historic, elemental, and more. Obrist sees that the semiotic complexity and openness of maps loads them up with “active and political potential”¹⁴ to chart different kinds of phenomena and occurrences within diverse critical theoretical framings.

Mapping practices have diversified significantly due to advancements in photography, GPS technologies, and computer-based rendering programs. Highly detailed maps can be generated by humans or machines, or by sonic waves from outer space, from deep underground or under water, and with vast scale ranges from the global to the molecular. These extensive possibilities assist projects to produce spatial readings not limited by human access. For example, *The Hidden Ecologies* project uses aerial photography, GPS tracking and microphotography to access and map forgotten-about sites in San Francisco Bay, in the US, and to collect a record of multiple aspects of the area including microbial life, colonisation, industrialisation,

¹¹ Denis Wood, “The Anthropology of Cartography.” In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 283.

¹² Wood, “Anthropology of Cartography”, 284.

¹³ Les Roberts, “Mapping Cultures: A Spatial Anthropology.” In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 13.

¹⁴ Obrist, *Mapping it Out*, 236.

abandonment, and migration (O'Rourke 2013). The maps in Chris Benton, Wayne Lanier and Marina McDougall's *The Hidden Ecologies*¹⁵ project are not neutral documents. They were created in relation-with and in thinking-with critical theories to consider the changes to urban lives and spaces due to political, environmental, technological, and social shifts in the Anthropocene epoch. In this example maps are not existing documents to interpret. Rather, mapping is a core methodologic practice for visually documenting how "urbanization occurs in and through a vast network of relationships, and within complex flows of energy and matter, as well as capital, commodities, people and ideas"¹⁶. Contemporary mapping practices can work closely with the chaos, with the messy and unruly and the hard to capture, and they can work closely with difficult theories of the land, culture, time, matter, space, speculation, and feminism.

Making maps as part of a methodologic research practice initiates thoughtful encounters with a place that are mindful of the impossibility of being able to capture everything, or even some things in their entirety. The marks, symbols and lines can only create partial visual spatial accounts. What visually appears in a map, even a digital map, is moving because of this partiality. The aspects not accounted for intervene as fluid addenda; components such as matter, affects, memories, climates, happenings across times, tenses, and spaces, extend the map beyond the time and location of its production (Del Casino Jr. and Hanna 2011). This is also the case in mainstream mapping. GPS wayfinding programs are periodically updated and are added to by users establishing favorite routes, points of interest, local landmarks etc. This creates maps that are "constantly produced and (re)produced ... through the democratisation of production"¹⁷ and through different partial stories and experiences. Latour conceived of graphic partiality as an absence that opened up possibilities for individual interpretation and connection. Diagrams and maps should have absences because these allow for "translation without corruption"¹⁸ of phenomena to generate diverse perspectives and understandings of a context.

¹⁵ The blogsite for the Hidden Ecologies project can be found at: <http://research-benton.ced.berkeley.edu/he/>

¹⁶ Bruce Braun, "Environmental Issues: Writing a More-Than-Human Urban Geography." *Progress in Human Geography* 29, vol. 5 (2005): 637, <https://doi-org/10.1191/0309132505ph574pr>

¹⁷ Vincent J. Del Casino Jr. and Stephen P. Hanna, "Beyond the 'Binaries': A Methodological Intervention for Interrogating Maps as Representational Practices." In *The Map Reader: Theories of Mapping and Cartographic Representation*, ed. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester, UK: John Wiley & Sons, Ltd, 2011), 102.

¹⁸ Bruno Latour, "Drawing Things Together." In *The Map Reader: Theories of Mapping and Cartographic Representation*, ed. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester, UK: John Wiley & Sons, Ltd, 2011), 67.

Maps are far more varied than the western vellum maps (think of the giant poster of *The World* on the classroom wall). For example, maps are *produced* by Indigenous communities through performative and corporeal practices. Irrespective of their different appearance maps contain semiotic texts through interpretive documentation and are read through symbols, gestures, marks and signs (Powell 2010).

The politics of who gets to do that semiotic interpreting, and the fact that western readings of the land have shaped particular meanings that erase histories and stories (Caballero and Tori 2018; Cope 2018; Goeman 2008a; 2008b), is a focus for artists using site-specific works to generate discussion and critical engagement around mapping. Particularly, artists explore how western stereotypes of the land as familiar, strange, and exotic are upheld through colonial documentary objects “which have the properties of being *mobile* but also *immutable*, *presentable*, *readable*”¹⁹. Tools such as vellum, pens, compass, and camera are transportable and accompany the cartographer, however what is recorded on them becomes a fixed statement of segmentation and ownership.

Artists examine the intensely corporeal nature of what it is to map the earth and how traces of muscle movement, skin flakes, sweat, hair, perception, ideas, routes taken, and breaths all reside in mappings. The foregrounding of the corporeal undermines the human/nature binary that underwrites histories of western mapping, celebrates the long histories of corporeal Indigenous mapping practices, and attends to the politics of interpretive and semiotic documentation to highlight how the creators of a map “see themselves in its images [and] reconstruct their own desires through this object”²⁰.

Trudi Lynn Smith created *The Breath Camera* as a performative work that addresses colonial double practices of revering and capturing the land. *The Breath Camera* comprises a camera-like contraption with a long, black, fabric black-out skirt that the wearer puts on over their head. The ‘camera’; an empty wooden box casing, references the box field cameras used in 1900s. It has a concertina front and a small glass viewing window that presents a sectioned view of the landscape. The user places their head inside the empty camera and sees the landscape through this small glass pane as they are encased within it and the claustrophobic tubing of the

¹⁹ Latour, “Drawing Things Together,” 66, original emphasis.

²⁰ Del Casino Jr. and Hanna, “Beyond the ‘Binaries,’” 102.

floor-length skirt. The fabric encasement, and the close-fitting camera bring into sharp focus the sounds of heartbeats and breath and the condensation caused by breathing faster, and it keeps these centrally present as the landscape is seen. *The Breath Camera* brings attention to breath as a way of accentuating physical human presence on the land and breath as an “unarchivable experience of the world ... for noticing multiple agencies and timescales”²¹. Lynn Smith’s *The Breath Camera* critiques practices that colonised land in the early days of photography and quantity surveying. This early photography captured the land; marking, objectifying, and subjugating while keeping the coloniser hidden behind the lens, and literally and metaphorically out of the frame.

Olafur Eliasson’s *Motional City Map* is a graphic work of the abstracted movements a person makes as they traverse the city. The movements, described in the map through words which include *density*, *automatic body*, *felt space*, and *now now now*, trace diverse concepts of internal, physical, and emotional movement experienced during the journey. Eliasson’s map transcends the borders between internal and external movement in the city-as-relationshipscape (Manning 2008) and the multiple movements that occur through those negotiations.

Adam Chodzko uses maps to create works about belonging, exclusion, and empathy. In *Night Shift*, Chodzko altered a map of the 2004 London Frieze Art Fair by superimposing the journeys a series of wild animals made through the exhibition marquee in the nights leading up to the start of the fair. The location of the tent was in an animal park next to London zoo, so at night animals including a wolf, deer, scorpion, skunk and python navigated their way around the deserted space. The superimposition of their tracks over the official Fair plan comments on the exclusionary semiotics of the almost non-existent labelling in the official Art Fair map, which contained a plan of the exhibition booths but virtually no writing. Mapping animal movements as they intervene on human occupation of the land makes Chodzko’s *Night Shift* an interesting subversion of the cultural trail. Chodzko wants to encourage visitors to the fair to use this alternate map to follow the “empathic pathway” of “a different kind of consciousness”²² and perhaps to experience art through the eyes of one of these animals. In doing so visitors

²¹ Trudi Lynn Smith, “The Breath Camera: A Prototype for Anitcapitalist Photography.” *Mapping Meaning, The Journal* 1 (Spring 2018): 35, <http://www.mappingmeaning.org/the-journal-issues-2018>

²² Adam Chodzko, “The Wrong Map.” In *Mapping it Out: An Alternative Atlas of Contemporary Cartographies*, ed. Hans Ulrich Obrist (London: Thames & Hudson, 2014), 23.

participate in performing a wry commentary on aesthetics, art, culture and the economies of nature and location.

Hans Obrist used mapping as a curatorial device for the series of *Marathons* that took place at the Serpentine Gallery, London, at the start of the millennium. Obrist saw the methodologic potential of mapping to generate transdisciplinary interaction between artists, architects, designers, the public and the Pavilion (an inflatable structure that housed the 24-hour Marathon sessions). Obrist saw how mapping was vitally important, particularly in the Interview Marathon held in 2006, because it presented new processes for “charting the activities of a city while acknowledging its perennial mutability”²³ as cultural figures, audiences, creative works, and the inflatable structure interacted.

Artists experiment with cartographic and mapping practices to interrogate the visual, contextual, semiotic, and political agency of maps. The examples included here demonstrate how artists recognize that “cartographies can be altered endlessly to reflect different priorities, hierarchies, experiences, points of view and destinations” and that “subverting cartographic conventions and cutting through layers of codes and symbolism”²⁴ generates critically charged interactions, reflections and recordings of space. Creative, interrogative mapping methods help those who might not think otherwise reconsider the “authority with which maps depict the ‘truth’ and question the very grounds on which we exist”²⁵. Mapping emerges as a potent research method for speculative-ontological projects that address the damages caused by settler colonial practices to cultures, places, environments, histories, and futures. Artists are pushing the methodologic capacities of mapping to experiment with ways of examining the world through these post-truth lenses.

Mapping produces a document that is open to amendment. Even if western maps have enjoyed a status of authenticity — a dominant, objectified, *truthful* reading of a place — even these maps-as-document cannot be considered fixed because the things they map are never static or unchanging. People relocate, floods and landslides occur, animals migrate, buildings fall down or are erected, earthquakes happen, seas rise, glaciers retreat. In this case mapping is a methodology that is flexible and adaptable to each context and concept. Maps are

²³ Obrist, *Mapping it Out*, 235.

²⁴ Obrist, *Mapping it Out*, 11.

²⁵ *Ibid.*, 11.

“detachable, reversible, susceptible to constant modification”²⁶ as those contexts and concepts alter. The artist mapping examples take different forms and are inherently experimental, even if this is not always revealed in the appearance of the map itself. Margarita Gluzberg’s *A Rhizomatic Navigational Device for the 21st Century* explores these issues of translation in a speculative work that complicates and challenges navigational *truths* including the relationship between data and mapping as well as what data is counted and used in the first instance. Gluzberg’s reference to Deleuze and Guattari’s work on the rhizome concept is taken up visually through a delicate drawing of an organic form. The form prompts us to think about the constantly interacting and intercepting navigations of multiple things, and to recognize that things are always taking place on a plane of consistency, i.e., the world is always shifting and moving. Therefore, any map can only ever be the result of a series of macro and micro selections made by the cartographer during its creation.

Given this interpretive basis, what makes a map different to art, or graphic design? Critical mapping studies say that it is harder to delineate the differences between image classifications given that contemporary artists and designers work across domains and practices and collaboratively. Additionally, contemporary maps, drawings, paintings, photographs and so on literally *look* different than they have historically so it is harder to easily identify a map from a drawing or a piece of art that uses GPS technology. And this is not only due to visual works looking alike; the rationales and theories informing visual practices are far less distinct, often now crossing over and converging. As Roberts states, contemporary visual practices have “blurred the epistemological boundaries that police understandings of when we might consider a ‘map’ as distinct from, say, an image”²⁷. The point here is not to resist such developments but to suggest that mapping is at a point of being open to experimentation. Visual epistemological classification boundaries have stretched, who is permitted to be a cartographer is relaxed, and the cultural restrictions on the rationales and purposes for mapping have opened up.

A key shift in this respect has been the influence of posthuman theories on how space, nature, and the non/in/human world are conceived. The long-standing assumption that maps should be about human need and thriving (Roberts 2012) is

²⁶ Del Casino Jr. and Hanna, “Beyond the ‘Binaries,” 103.

²⁷ Roberts, “Mapping Cultures,” 4.

deeply contested when mapping now springs from research ontologies that think beyond settler colonialism and human exceptionalism. The influence of immanent theory on mapping releases maps from their symbol legends and semiotic restrictions and enables them to look entirely different (Wood 2012). There is also much greater interest, awareness, and respect by western critical cartographers of different cultural practices of mapping and the processes that Indigenous nations have perfected and relied on to support a nomadic lifestyle or to locate remote sacred sites. Indigenous ways of mapping (discussed in detail in chapter 8: *Ethical wayfinding*) use performative documentary practices that are flexible and mobile, “infused with meaning through contested, complex, intertextual and interrelated sets of socio-spatial practices”²⁸ built up over generations and through collaborative consultation.

This book attends to the rise of new research ontologies emerging in reaction to global conservatism and a neoliberal research culture. Such methods — what Vannini calls a “new experimental genre” — resist the strictures of conservatism and persist in thinking about complexity and uncertainty. These new methods, which include inefficient mapping, are a “hybrid genre [of method] for a hybrid world”²⁹. In my own projects for example, inefficient mapping has activated my investigations into cities and the strange, chimeric, biospeculative human, insect, weather, animal, refuse, bio-matter, cultural, and historic urban citizens that populate cities now and in the future. I use the inefficient mappings as a geontologic methodology to bring arts practices and speculative theories together through critical, creative praxis to theorize on urban life in the Anthropocene. The mapping methodologically activates concepts and ideas and sharpens my intentions and interests in relation to my specific projects and the possibilities for new thinking about urban citizenships. Specifically, these ideas percolate through my immersion in theory and in my acts of drawing and visualizing.

The rising influence of immanent research ontologies and the methods (such as mapping) that emerge through them help to contest the subjugatory agendas of colonial projects. As an example, the performative basis of immanent mapping practices “offers productive possibilities”³⁰ for critiquing western cartographic

²⁸ Del Casino Jr. and Hanna, “Beyond the ‘Binaries,” 102.

²⁹ Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*. (New York: Routledge, 2015a), 3.

³⁰ Del Casino Jr. and Hanna, “Beyond the ‘Binaries,” 103.

traditions of the impartial cartographer who codifies land in terms of its agricultural, mineral, or developmental potential, while ignoring its cultural and historical significance (McCarthy 2014). Methodological experimentation also provides openings for different ways of thinking about the rights and responsibilities of knowledge and how this responsibility is as much about rethinking the modes of information gathering as the theories informing those methods. Methods that are porous enough to soak up and hold theories, and which extend those theories through their methodological practice, have great potential to produce challenges to dominant ideas and systems. Methodological innovation has led to emergent critiques of whiteness and colonialism and the global damage colonialism wreaks on people, lands, nature, and the environment.

Inefficient mapping is a valuable example of such a method. The onto-epistemological power of maps activates critique and a reimagining of conventional practices of reading space for particular purposes. As Roberts observes, critical mapping practices are especially relevant because they are now less fixated on “what the map *is* ...[than] what it does in any given context or milieu”³¹. Shifting away from the faithful rendering of a map document and onto the act of mapping is methodologically productive. Mapping rather than maps is the key focus of this book because it changes the focus from the dead evidence (map) to the active and lively process (mapping). Furthermore, the embracing of partiality or inefficiency and the focus on other/ed aspects of a space undermines conventional ideas of evidence, proof, and the dominant ontologies that have been central to western cartography. Inefficient mapping critiques what constitutes an authoritative or faithful rendering of zones and spaces and problematizes what is counted as authentic map data. Roberts suggests that hacking normative mapping processes enables a reclamation that undermines “the *idea* of the map as a disciplinary apparatus of ...the state, the global military-industrial complex, multinational corporations, scientists and technocrats”³² and presents a minor reading of the world that is ethically and affectively attuned.

There is no claim here that inefficient mapping is a new invention because many emergent and counter mapping practices already exist (Roberts 2012). Inefficient mapping does however notably contribute to this vibrant lineage

³¹ Roberts, “Mapping Cultures,” 4.

³² Roberts, “Mapping Cultures,” 10.

Through a process of *chaosgraphing* (explained in chapter 3: *Chaosgraphics*) inefficient mapping prioritizes the interrelationalities between immanent theories and methodological practices and how these coalesce through creative practice. Inefficient mapping is gestural, drawn marking that takes place in situ, recording affective relations within the milieu in ways that do not emanate from the human but through ethically entangling with, observing, and modestly witnessing (Haraway 2004) the already-movements of matter and/in spaces.

Chaosgraphics

This chapter discusses how inefficient mapping generates data on non-representational affects and registers in phenomena, in relation to speculative, immanent theories. An important task of a methodological act will generate data that are useful and readable to the researcher. Methodologies do this differently of course, however the nature of the data produced should uphold the intentions of the methodology, and in relation to the conceptual and theoretical frames informing the research.

The graphic orientation of the inefficient mappings allows for visual notation of multiple activity: the overlapping, simultaneous, and multiple movements, forms, and elements in phenomena that are occurring irrespective of human presence. The layering is an important curatorial process for documenting the movements in the chaos, and to see how some details and marks start to disappear or fade out under the layers. The random layering presents the mappings as *chaosgraphics*; a term I have devised to describe how the mappings work very differently to infographics.

Chaosgraph is a neologism that describes the presentation of visual data as it was originally recorded, which is, as it traced the chaotic arrangements of things happening in phenomena. That is, rather than translate those chaotic arrangements into tables or analyses, the data remain in the arrangements of marks that were made, through the visual, drawn marking of the partial traces of their movements and appearances onto a mapping surface. As the examples through this book demonstrate these marks are not carefully arranged on the page. The marks often overlap, sometimes cross over, sometimes they are densely clustered in a small area of the mapping. The arrangements plot objects, sounds, times, atmospherics, the lingering sounds from things already done, the intense presences of things to come. The mappings create chaosgraphics that do not attempt to simplify the richness of the occasion. Chapter 6: *Inefficient mapping* describes how the mappings are a non-representational reading of the full detail of what is happening, and that the mappings partially note the detail of things through gestural scratches and marks. These original markings do not get translated from being *raw data* as can happen in other types of research. The mappings generated *in situ* continue to be used in that raw form, and the process of layering the different mappings creates visual research reporting that is a “new rendering, a new possibility, a new

(re)presentation”³³ of things that were and continue to be already always in movement. Making chaosgraphs highlights the complexity of the energies and matter across phenomena. The layerings can be collections of mappings made in different places, at different times, and drawn to different scale. The layering can also be of mappings made in the same spot in quick succession. Even when standing in one spot and making a series of mappings, each mapping has its own level of detail, its own particular gestural marks, its own scale, its own focus. Rather than distilling data as in an infographic, chaosgraphics maintain the detail of multiple data of movements across differing scales, times, and speeds. Data is the gesturing of the phenomena, presented as a mark amongst clusters of others on a single layer, and added to layers of others still. These visualizations create chaosgraphics.

Chaosgraphics, and the chaosgraph documents contain lines and marks that are lively and complex through compositions where “categories, meanings, and plays of force become generative in the course of something taking place”³⁴.

Chaosgraphics visually convey theories and ideas about lively matter by recording movements, shimmerings, sounds, smells, spaces, histories and subjects.

Chaosgraphics differ to infographics because data is not organized or summarized through visual, schematic representational translations as is commonly seen in an infographic. Chaosgraphics differs from infographics in that the information chaosgraphs communicate may take time to read, whereas infographs purposefully aim to be an “easy-to-understand reductive symbolic picture”³⁵ of large-scale or complex qualitative or quantitative data sets. As discussed in chapter 6: *Inefficient mapping* the lines and marks in the mappings have no conformity, they are gestural and hold meanings in their own way rather than filtering, essentialising and summarising data through easily readable visual symbols. The mappings create chaosgraphs that remain with the complexity of the time-place-event, but that are a readable archive of a research event.

³³ Vincent Del Casino Jr. and Stephen P. Hanna, “Beyond the ‘Binaries’: A Methodological Intervention for Interrogating Maps as Representational Practices.” In *The Map Reader: Theories of Mapping and Cartographic Representation*, ed. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester, UK: John Wiley & Sons, Ltd, 2011), 102.

³⁴ Kathleen Stewart, “New England Red.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 26.

³⁵ Steven Heller and Rick Landers, *Infographic Designers’ Sketchbooks*. (New York: Princeton Architectural Press, 2014b), 6.

Inefficient mapping differs to the infographic, schematic tendencies of conventional maps that fuse “signs onto a common plane”³⁶. The translation of three-dimensional space to two-dimensional map through “assigning correspondences between abstract symbols and physical points of reference”³⁷ is disrupted. Inefficient mappings do not attempt to correspond meaning between the 3D and the 2D. The abstraction of the 3D remains in the 2D, and in fact the abstraction persists because the random layerings create irregular connections between times, places, things that were not originally in relation. The data that appear in inefficient mapping are sensuous signs (Deleuze 1972) of phenomena, conveying the semiotics of non-representational, speculative, immanent affects and registers of places and spaces.

Chaosgraphs are readable, however they forego the schematics of infographics in favor of abstract gestural marks, lines, and tracings to convey the chaos of the phenomena. In this way they graphically record things that are difficult to standardize or schematize. The non-representational, affective nature of chaosgraphics visually and conceptually critiques the metrification of life, particularly after the datalogical turn (Clough 2015).

Infographics have become a ubiquitous mode to read data and research findings since the advent of a technologic life and the arrival of Big Data (Yikun and Zhao 2015). Infographics is tasked with sifting and translating Big Data on any number of topics to publics and audiences. Contemporary infographics pepper news and media sites, newspapers, web platforms, and research reports. They visually present trend data and snapshots of the world. The ubiquity of infographics in journalistic media has shifted the responsibility and capability of designers “who a decade ago would never have thought of themselves as ‘information architects’, to become makers of some form of information visualization”³⁸. Manipulating Big Data to create infographic translations is not a purely decorative process but is now highly skilled and difficult work. Graphic designers renamed *information architects* produce *data journalism* through the use of sophisticated programming, computational and statistical analysis that wields Big Data into a schematic, easily-digestible form that removes the reader’s encounter with complexity. As Yikun and Zhao assert “data

³⁶ Denis Wood, “The Anthropology of Cartography.” In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 289.

³⁷ Karen O’Rourke, *Walking and Mapping: Artists as Cartographers*. (Cambridge, MASS: The MIT Press, 2013), 177.

³⁸ Heller and Landers, *Infographic Designers Sketchbook*, 6-7.

journalism is a new kind of news storytelling enabled by the vast amounts of digital information collected by companies and governments”³⁹. The emphasis for the information architect is to mine the data for “relationships - between people, organisations, and governments”⁴⁰.

This is an alarming situation. What data the public sees and what interpretation they get access to, is data translation informed by the purpose and frames of reference of the information architect. The information architect is professionally tasked with converting data into an infographic, so they are responsible for translating that data. The information architect, however, is not reading the theories related to the topic of the data, their interest is to refine and excel in their knowledge and competency in data analytics programs.⁴¹ Their job is to elegantly translate large bodies of complex information into a static or animated schematic that will be read on a media or news platform in a matter of seconds.

Yikun and Zhao describe how the “basic elements of data journalism design are numbers, graphics and colors”⁴² realized through standard schematics to enable quick reading, skimming over, browsing. The infographics scholars also assert that “the media tend to report data-based news visually because it is a more effective way to communicate such information” therefore “data journalism requires deep data mining through repeated extraction, screening, and reorganisation, focusing on specific information to filter the data, and interpreting the information in order to visualize it and produce news stories”⁴³. The primary aim of the information architect is not to examine the data through critical theories of race, settler colonial privilege, Indigenous rights, feminism, diversity, or environment, but to animate and pictorialize dense and complex information. The impact is the public is given filtered information that persuades the reader to focus on specific aspects and not to imagine or wonder about it, or to think through other critical framings.

I am not calling for the end of data journalism or the cessation of image use to convey information. Infographics provide “opportunity for the reader to interact with the information ... Data journalism collects, filters, and presents information in new

³⁹ Liu Yikun and Dong Zhao, *Visual Storytelling: Infographic Design in News*. (Mulgrave, AUS: The Images Publishing Group, 2015), 7.

⁴⁰ Yikun and Zhao, *Visual Storytelling*, 7.

⁴¹ Role descriptions of the Information Architect establish that the level of research required for each project extends to interpreting the raw data only. See <https://www.freshgigs.ca/blog/information-architect-job-description/> and https://www.youtube.com/watch?v=_lwzWdO8Al8 for further explanation.

⁴² Yikun and Zhao, *Visual Storytelling*, 11.

⁴³ Ibid., 8-9.

ways ...from everyday social issues to deep social trends, it helps to provide reliable insights and predictions”⁴⁴. Infographics convey data analysis in interesting ways, but it is a translation and a summary. Summarising and translating are not a problem per se but the assumption that the translation is efficient, empirical and telling enough of the story is a problem. The following examples demonstrate how data journalism employs highly creative tactics but essentializes extremely large and complex data sets.

Luisa Milani and Walter Molteni are co-founders of *La Tigre*, a design company that produces infographics that the founders claim, “helps in understanding data on a molecular level”⁴⁵. Milani and Molteni’s *The Big Feast* project summarized in kilos, foods eaten in Germany in a single year. The massive body of data was distilled into food icons sized relative to the proportion of consumption. The infographic Milani and Molteni created looked like a supermarket display window, with easily recognisable food icons placed in a tile arrangement. Milani and Molteni aimed to produce an image that enabled quick information conveyance to a broad audience of large sets of specialized and complex data. The aim of *The Big Feast* was to make it easy for the general reader to have an overview of the data however because the aim of an infographic is to convey essentialized information very quickly, *The Big Feast* focused on the top results; in this case, foods typically eaten in western cultures. Such a large data bank would have included very rich data on foods eaten across different cultures or across different levels of wealth, however these are not featured. This is not to say that *The Big Feast* data was doctored or incorrectly visualized by the information architects, but rather, because the aim of the infographic is to be very quickly read it often does not include much of the molecular or complex data results. An infographic works with more impact by using high impact results, so in the case of *The Big Data* it may have been that only particular data samples were referred to for the infographic, leaving alone the data on income brackets, food diversity etc. The point here is not to debate the accuracy of *The Big Feast* but to use it as an example of how infographics prioritize instant visual impact, and this determines what data is used.

⁴⁴ Yikun and Zhao, *Visual Storytelling*, 7.

⁴⁵ Steven Heller and Rick Landers. 2014a. *Raw Data: Infographic Designers’ Sketchbooks*. (London: Thames & Hudson, 2014a), 176.

The Product Space charts global trade through the relationships of manufacture, production, and supply at local, national and international scale. The appearance of the infographics that are generated within *The Product Space* are extremely detailed and seem almost incomprehensible, however they are not chaotic. The charts, although extremely complex⁴⁶ distil information even though it is not easy reading. Color coding and node sizing are employed to help with reading multiple pathways and clusters, and to represent different trade classifications, such as agribusiness, cereals, forest products, machinery, chemicals etc. as well as the geographic proximity of trading. The complex charts present information via statistics and summaries.

Artist Nathalie Miebach produced a three-dimensional sculpture for the *Hurricane Noel* project. The sculpture is a 3D visualisation of a musical score developed from the path of Hurricane Noel through the Gulf of Maine, U.S. in 2007. Miebach took the measurements of the seismic changes to air currents, moisture and temperature that the hurricane generated and translated the data into a musical score. Miebach then produced a three-dimensional sculptural form of the score. *Hurricane Noel* explores how the arts might translate information generated by scientific investigations in experimental ways, however the creative appearance of *Hurricane Noel* should still be understood as an infographic because it continues to visually communicate distilled data.

As the examples detail, infographics distil and visually convey complex and large-scale data to an audience. The three examples do this quite differently, however each uses schematics and semiotic visual coding to make that data understandable. In each example the information architects provide the audience with “prime, lean data ...[via] a detailed annotated schematic”⁴⁷. Although inventive and visually pleasing the three examples avoid critically thinking about who or what does the data represent, make invisible, ignore, or prioritize, and the data is treated as historic, fixed; sorted and arranged and given meaning through those organisations. Heller and Landers argue that “data-viz has changed from the facile and virtually undesigned to the conceptually rigorous” although their assertion that

⁴⁶ A fuller description on *The project Space* is found in Cesar Hidalgo, Bailey Klinger, Albert-Laszlo Barabasi, and Ricardo Hausmann, “The Product Space Conditions the Development of Nations.” *Science* 317, vol. 5837 (2007): 482-487. <https://doi.org/10.1126/science.1144581>

⁴⁷ Heller and Landers, *Infographic Designers' Sketchbooks*, 6.

the change is to “meet an increased demand for digestible information”⁴⁸ indicates that the conceptual rationale for infographics has not shifted significantly.

Beautifying Big Data through eye-catching infographics effectively dodges public discussion and diverts awareness of the politics of data, who are the main beneficiaries of Big Data, and the impacts on research becoming under greater pressure to communicate findings through newsworthy, dot-point reporting. The tendency towards using infographics to represent research does however fuel public conceptions of what *bone-fide* research looks like. This means that Intellectually rigorous and critically theoretical research or research about immanent, speculative futures or about diverse subjects, lives and places is looked on suspiciously or as less valid. It is important therefore to have modes for presenting data in ways that maintain its complexity that are not persuaded to quantify or distil or that prioritize mainstream and privileged lives.

Inefficient mapping chaosgraphs translate and visualize the multitude of movements and happenings taking place within phenomena. Examples of chaosgraphs appear throughout the book, however the example shown in Figure 1 shows that chaosgraphs include many minor moments that happen to be seen, felt, heard, tasted, touched, encountered, thought about, and remembered. The inefficient mappings are layered, and these layers collectively create a chaosgraphic that maintains the unpredictability and complexity of what is happening across times, scales, and durations, from different occasions but also different moments in an occasion, by not distilling it and translating it through a graphic schematic. The chaosgraphs do not essentialize via schematics, they visually report on events and the flat ontological planes, assemblages, phenomena and all the moving parts of these.

⁴⁸ Ibid., 6.



Fig. 1 Chaosgraph. Source: Linda Knight. Permission granted by Linda Knight

Chaosgraphs are political because they disrupt conventional ideas about what counts as data, and how data analysis is visually reported. The chaosgraphs also disrupt the semiotic conventions of data reporting because they do not present easily digestible and promptly-readable research conclusions detached from their theoretical and critical frameworks, however they do offer a possible mode for communicating on research that is interested in speculative readings of phenomena and of things in movement.

Theoretical framework

This book proposes that inefficient mapping is a creative practice that puts to work immanent, speculative theories. It is important therefore to discuss the theoretical framework that informs the methodologic protocol. Inefficient mapping thinks-with⁴⁹ immanent ontologies and the interweaving agglomerations of theory, critique, and practice (Springgay and Zaliwska 2015). Recent speculative, processual, and new materialist turns, as well as critical race, critical geography, and biospeculative theories have been particularly at the forefront in producing research that is building this field intellectually and conceptually. Speculative theories and investigations into the transmaterial interrelationalities of non/in/human collaboration emerging from diverse groups of scholars and artists including trans* scholars, women and feminist scholars, crip scholars, Indigenous scholars, and others (Jørgensen and Wirman 2016; Kim 2017; Ogden, Hall, and Tanita 2013; Parker 2016; Plumwood 2000; Shelton 2019; Tsing and Yanagisako 1983; Tuck, McKenzie, and McCoy 2014) contributes to wider critiques of the dominance of Cartesian white, male, western exceptionalist perspectives on intellectual thought, scientific progress, and research. These diverse voices are collectively refining immanent research ontologies and are thinking-with practice, critique and theory to disrupt and challenge research hierarchies and propose instead symbiotic and experimental relations across non/in/human collaborations.

I am interested in the extraordinary intensities of sites and how feminist, geontologic (Povinelli 2016), and speculative thinking helps to disrupt the usual readings of place in favor of readings that pay attention to ethics and agencies of non/in/human citizens. In my own projects, inefficient mapping has so far activated my investigations into cities and the strange, chimeric, biospeculative human, insect, weather, animal, refuse, bio-matter, cultural, and historic urban citizens that populate cities now and in the future. The mapping methodologically activates concepts and ideas and sharpens my intentions and interests in relation to my specific projects and the possibilities for new thinking about urban citizenships. I use inefficient mapping

⁴⁹ Think-with is a term that references Donna Haraway's proposal that theory is not a solely human activity but sympoietic: an open, lively and messy agglomeration of human / material / bio / immaterial agents that work constantly and interrelationally to make the world and its meanings. See Donna J. Haraway, *Staying with the Trouble* (Durham: Duke University Press, 2016).

as a geontologic methodological protocol, bringing arts practices and speculative theories together through critical, creative praxis to theorize on urban life in the Anthropocene. Reference is made throughout the book to my urban citizenship project, to help elucidate on concepts and points discussed.

Inefficient mapping visually articulates and produces immanent readings of the earth, its inhabitants, and its substances. Inefficient mapping reads differently the peaks and pits, the things in light and shadow in a scene, and regards matter through different classifications: as agentic and vibrant and organized not through perspectival grounds but within affective, atmospheric, and active registers.

Inefficient mapping, rather than other forms of recording (such as a running record or a video recording) can be a way to enter into a milieu, to notice some of what goes on without claiming to represent a comprehensively truthful or whole account of a given time-place. Partiality is openly declared in inefficient mapping. All other maps are also always partial because they are not able or willing to capture all the aspects of a place (Seigworth 2011). They are always bound by the specific purpose of their creation.

Seigworth notes how the flat, graphical orientation of the traditional map is a frozen moment in time because “traditional sorts of maps are notoriously limited when it comes to displaying, say, ‘emergent processes’”⁵⁰ such as things in development or the passing of time and the changes occurring in a place across each moment. The world is moving and perpetuating and the map acts as a static account of movement, “a momentary hold on an emergent scrap of something”⁵¹ that may well come to fruition or fail completely (think of the precarious business of developing agriculture in colonized locations). Conventional maps were tasked with representing place, time, and space, and the map became a fabulist story of a time and space that might continue to be read as a true account of a place that is no longer exactly the same as it was. Time and movement continue so the fixed map cannot guarantee its “self-same place position onto a mapping of empirically based actualities”⁵² but is often trusted to do so. The graphic conveyance of buildings, roads, trees, landmarks and so on give the map degrees of content and authority. All maps in effect are inefficient in that they are always past tense and

⁵⁰ Gregory J. Seigworth, “Maps and Legends.” *Communication and Critical/Cultural Studies* 8, issue 3 (2011): 316, <https://doi-org/10.1080/14791420.2011.595950>

⁵¹ Seigworth, “Maps,” 315.

⁵² *Ibid.*, 316.

always a fictional account of the present. Maps remain fixed while all else is moving, so being in the time-place and mapping inefficiently is in a sense all that can be done.

A distinction between conventional maps and inefficient mapping is that the attention to inefficiency in inefficient mapping openly addresses the incapacity of any map to be comprehensively accurate. The patchy, sparse and irregular conveying of information in inefficient mapping is purposeful in openly addressing how maps can only ever capture “just a fraction of the excessive potential”⁵³ of the activities and goings-on of things in the world. Maps also have edges, whether that is the edge of a page, a sheet of paper, or the digital screen. Edging is regarded as an important aspect (Haraway 2004) in inefficient mapping because it “embraces the limits of data”⁵⁴ and thus infers there is life beyond the map. Additionally, limits and edges are regarded not as break-off points, but as interesting, rich zones, where “the continual emergence of modes of coming-into-existence (or fading from existence)”⁵⁵ happens. One intention, then, of inefficient mapping is to *document* immanence. Document is emphasized here because documentation happens through absence in inefficient mapping as well as through visual marking. The absences, as much as the inclusion of details mean that inefficient maps visualize immanence. Absences bring attention to the edges of things “abstract and concrete, actual and unfolding”⁵⁶ that are about to come into focus. As an example, Figure 1 is part of a series that map posthuman urban citizens. The project regards water as an inhuman urban citizen and so maps were produced that charted urban creek water. The map in Figure 1 marks the rapidly changing shadows in the creek water as it flows. Multiple shadows appear and disappear, moving and changing as quickly as the water is shaped by the current and the surfaces it encounters along the creek bed. The map documents immanence, it contains visual marks of the water and these marks emphasize how water in the flowing creek exceeds the edges of the paper and comes into and out of view of the perimeter of my gaze. The sparse cluster of marks maps the water and also purposefully emphasize the excessive activities happening beyond each mark.

⁵³ Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation.” *Cultural Studies - Critical Methodologies* 15, issue 2 (2015): 139, <https://doi-org/10.1177/1532708614562881>

⁵⁴ Ibid., 139.

⁵⁵ Seigworth, “Maps,” 317.

⁵⁶ Kathleen Stewart, Kathleen. 2013. “Regionality.” *The Geographical Review* 103, no. 2 (2013): 284, <https://www-jstor-org/stable/43915992>



Fig. 1 Urban water citizen. Source: Linda Knight. Permission granted by Linda Knight

Attuning to the immanence of movements and things⁵⁷, takes note of the trans-border crossings of matter and energy and the merging and traveling of things in unregulated ways. This presents inefficient mapping as a political research practice concerned with critiquing colonial mapping that is not about immanence but is more concerned with geographically fixing, ordering and segmenting details within specific bounded locations. My project into posthuman urban citizens exemplifies how inefficient mapping transcends these orderings and segmentations (Kontturi 2013) because the mapping works with immanence and speculation. Going back to the creek water map, although I mark the few momentary shadows I manage to spot in the water, I am also mapping the wider affective and non-representational residues present in the whole creek. In Australia, mapping a creek also maps the non-representational impacts of colonial control of water through its redirection due to hydroelectricity⁵⁸ or irrigation schemes⁵⁹. My inefficient approach to mapping the

⁵⁷ Deleuze and Guattari describe the continuously moving arrangements of everything in a scene as the milieu. See particularly "1730: Becoming-Intense, Becoming-Animal, Becoming-Imperceptible..." In: Giles Deleuze, and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, (Minneapolis: University of Minnesota Press, 1987), 256-341.

⁵⁸ An example of this in Australia is the Snowy Mountains Hydro Scheme.

⁵⁹ The Murray Darling Scheme is one Australian irrigation program that has attracted controversy due to its preference to provide farmers with water for cattle and cotton farming. Parts of the Murray Darling river, which

creek water literally and conceptually leaves spaces on the page for these non-representational aspects. Reading and mapping the world through the non-representational and through speculative in/non/human perspectives can speak against white privilege, human exceptionalism, and economic extractivism. Such research can demonstrate that power emerges through the intense affects generated through posthuman interrelations of matters, times, meanings, and atmospheres (Martin 2013).

An important acknowledgment for posthuman research is to see how the researcher and their tools of investigation actively contribute to the complex happenings in an event. The relational movements that occur within agglomerations of things, meanings, materials, presences, acts are described by Barad as *the phenomena*. Phenomena are understood as an event with “registers and capacities”⁶⁰, as something that is irreducible but that can be examined and thought about critically, methodologically, philosophically, politically, intellectually, and analytically. Barad’s concept of phenomena does not uphold a separated subject/object, or human/nature binary, rather all aspects in the assemblage are included and all are affecting the “differentiating patterns of mattering”⁶¹ of other components present as particles of matter continually form and reform through the passage of time. Barad proposes that unformed protean energies of matter with “ontologically primitive relations - relations without preexisting relata”⁶² become activated into specific material forms and properties that are identified through concepts and meanings as well as through their materiality. In Barad’s phenomena differentiation between matter is formed as much by discourses of culture, gender, race and others as by classificatory names, terms and descriptions.

Barad’s concept of phenomena is central to inefficient mapping because it articulates the complexity of what is happening during an event. Meanings and understandings of the event emerge through the constant movement of matter and the movement of matter is understood through different interpretive registers that include physicality/materiality and non-representational components such as affects,

has cultural significance to local Aboriginal communities, have become salinated or dried up due to this redirection.

⁶⁰ Kathleen Stewart, “New England Red,” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 21.

⁶¹ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. (Durham: Duke University Press, 2007), 139.

⁶² Barad, *Meeting the Universe*, 139.

the sensorial, the cultural, the historical, and the political. The mapping is an attempt to present phenomena “in a nonmodern way, a nonhumanist way, ...putting into practice a nonobjectifying aesthetics”⁶³.

The world can be reimagined through speculative and immanent theories. There is, however, some tension and care needed in using posthuman theories alongside those that critique settler-colonial privilege – or, specifically, theories emerging from critical readings of place, and Indigenous sovereignty. Tuck and McKenzie applaud non-representational theories for breaking down “the distinctions between the social and material ...to understandings of materiality as encompassing of, rather than singling out, social relations”⁶⁴. However, they suggest that the new thinking ironically remains tethered to humanism and that “the focus is more on how other forms of materiality affect and interact with humans”⁶⁵ and how differently the domains of land, place, and space feature in Indigenous life-worlds, how matter and life actively shape intellect, learning, history, and identity. The concern here is that the focus of new materialist and posthuman theories toward purely topological readings of space, time and matter “misses the point” around Indigenous understandings of material land and sovereignty. Posthuman shifts toward the topological have potential because space is not just a surface on which human life takes place, however Tuck and McKenzie’s critique of posthuman theories lies in its dismissal of place as geometric (representational). Indigenous and critical place theories are open to posthuman and new materialist theories to a point but that “does not mean forgoing representation altogether”⁶⁶. The challenge of emerging methodological protocols such as inefficient mapping, which experiment with non-representational theories, is to also ensure the mapping centralizes rights and responsibilities, citizenship, custodianship, and Indigenous sovereignty and relations with place.

Anderson and Ash suggest that non-representational components are atmospheres and that these are the meshing layers of force that hold a scene

⁶³ Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds*. (Minneapolis: University of Minnesota Press, 2017), 32.

⁶⁴ Eve Tuck, and Marcia McKenzie. *Place in Research: Theory, Methodology, and Methods*. (London: Routledge, 2015a), 42.

⁶⁵ Tuck, and McKenzie, *Place in Research*, 42.

⁶⁶ *Ibid.*, 124.

together and exist “beneath the thresholds of humans’ conscious awareness”⁶⁷. The unseen or unnoticed is considered as vital to the condition of the event and space. Even though it is unseen, it is noted and *included* in the analysis, encounter, account and so on. Researchers become political once they see themselves as a modest witness to the world, and that they can only partially record what can be seen, and that what is seen is only ever a partial account of the whole thing. The focus on affect and non-representation by speculative research ontologies begins to address a bad habit of humans placing themselves centrally in the situation. Inefficient mapping contributes to this new methodological ontological space because although the maps contain marks of things decided on by a human in a space, the commitment the person makes to mapping inefficiently is a commitment to decentralising them self in the space or event. The multitudes of changes and movements occur at a scale and speed beyond the gaze of the human as phenomena occur.

Jane Bennett (2010) describes phenomena through scales of vibrant matter that have affective impact on the world and disrupt human / more-than-human binaries. Rather than simply acknowledge the importance of *things* other than ourselves, however, Bennett advocates for bringing posthuman theories into the reading to “theorize a vitality intrinsic to materiality”⁶⁸ that elucidates the scales of difference within the more-than-human world, so that the things that are not human are not reduced to backdrop, *other*, or atmosphere. Theorising materiality complicates the sameness of not-human matter and sees instead that it is a “turbulent, immanent field in which various and variable materialities collide, congeal, morph, evolve, and disintegrate”⁶⁹. Consequently, a complicated, posthuman theorisation of phenomena requires that readings of spaces and sites must “identify the contours of the swarm and the kind of relations that obtain between its bits”⁷⁰, recognizing that the human is only a small aspect of this collection.

Posthuman theorisations of matter’s vitality and vibrancy push and extend socio-political understandings of contexts and situations. Such readings also help to extend the capacities and scope of the human gaze with its tendencies towards *brut*

⁶⁷ Ben Anderson and James Ash, “Atmospheric Methods.” In *Non-Representational Methodologies: Re-envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 42.

⁶⁸ Jane Bennett, *Vibrant Matter: A Political Ecology of Things*. (Durham: Duke University Press, 2010), xiii.

⁶⁹ Bennett, *Vibrant Matter*, xi.

⁷⁰ *Ibid.*, 32.

readings of the world. Posthuman theorisations bring about a timely opportunity for methodologic processes to activate research projects that are not purely technoscientific. For example: Bennett's (2010) studies on food, metal, and rubbish do not focus on these objects in situ alone. The orientation and production pathways leading up to their existence are regarded as part of phenomena just as the intensities around the pathways — the compositions of those pathways — are also brought in. For Bennett, the aspects of affective, non-representational properties of "technologies, winds, vegetables, minerals" extend the scope and detail of phenomena beyond the obvious, or clearly seen things. Bennett sees that attending to vibrant matter presents sites and spaces as bursting with "non-personal, human forces, flows, tendencies, and trajectories"⁷¹. These thick dimensionalities are difficult to pull into the controlled format of research tables, descriptions, and statistical organisations; they require methodologies that are equally thick and open to the flows of information that move in different scales and registers.

Bennett calls for "a cultivated, patient, sensory attentiveness to nonhuman forces operating outside and inside the human body"⁷². This is a call for methodologies that are interested in the atmospheric, the affective, the micro: the shimmering, vibrating forces that jolt through things and that constitute the world in the physical sense as well as the metaphysical sense. Bennett sees that "the capacity to detect the presence of impersonal affect requires that one is caught up in it"⁷³, immersed in the thick of things not just as a participant, but as a researcher, a recorder, a commenter and an intellectual processor. Becoming attuned to the richness and complexity of phenomena "can uncover a whole world of resonances and resemblances — sounds and sights that echo and bounce far more than would be possible were the universe to have a hierarchical structure". It is pressing to disrupt research conventions where method follows theory by nurturing symbiotic approaches for intellectual doing and thinking about "'talented' and vibrant materialities"⁷⁴.

Scale impacts on the ways vibrancy and materiality, or matter, is conceptualized. Karen Barad's work on the ethics of mattering and intra-active entanglements (described as 'agential realism') examines matter through the

⁷¹ Ibid., 61.

⁷² Ibid., xiv.

⁷³ Ibid., xv.

⁷⁴ Ibid., 99.

extreme scale dimensions that nano-technologic microscopes provide. Barad explains how exploring the edges of things in minute scale exposes the intense vitality of the universe. Common concepts of the singularity of things are challenged through microscopic technologies that can zoom in to such a scale to show how matter is not static or object-bound but lively and porous. Proton and photon particles do not stay fixed within an object but travel back and forth between objects and the energy fields around them, so that what are commonly assumed to be material edges are in fact lively animated zones of particles and energies in movement. Barad suggests that matter should be thought of as constituted by energetic agents moving in much bigger arrangements, and that these arrangements are the world and the universe. Movements are constant, meaning that “the world is an open process of mattering ...through the realisation of different agential possibilities”⁷⁵. Movement occurs in different directions with temporal, physical and spatial impact, creating shifts that “entail an ongoing reworking of the notion of dynamics”⁷⁶ as multidirectional and multidimensional rather than sequential or chronological. Conceptions of location, demarcation, space, site, and things are no longer concrete or distinct because “matter is neither fixed and given nor the mere end result of different processes. ...Matter is agential, not a fixed essence or property of things. Mattering is differentiating”⁷⁷. Barad establishes that matter is impactful: it matters, and that this mattering is generated by matter and occurs differently, and for different others. Matter is not neutral, dead and inert and brought into being by others, it has active agency in generating different impacts on different others. Barad developed the theory of agential realism for thinking about the consequences and reasons and the values and meanings that get assigned to matter in its different configurations. Inefficient mapping is informed by Barad’s agential realism because the act of mapping is seen to happen through clusters of actions which emerge from collections of tools, papers, muscles, temperatures, light, humidity and so on that are differentiated through their respective agencies. The key importance of this is that the human cartographer is not centrally placed, they are figured and refigured in the act of mapping through the differentiating agency of these collections, with each impacting on the event.

⁷⁵ Barad, *Meeting the Universe*, 141.

⁷⁶ *Ibid.*, 141.

⁷⁷ *Ibid.*, 137.

Grosz takes up the notion of agentic matter and shows how art and creative production are vital to new research ontologies because they demonstrate and visualize the impossibility of total replication. Art emerges from a reconfiguring of materials and energies in the world, through “sensations, affects, and intensities ... bodily forces, and their qualitative transformations”⁷⁸ of ideas, contexts, events and happenings. Grosz points out that Indigenous arts especially, provide important examples of the relationship between creative practice and immanent theories of phenomena, matter, and material agency and how this is interconnected with contextual and conceptual understandings of the force of life and belonging to/known country or place. Indigenous performative processes, which mediate everyday life, can be navigational to facilitate “movement across ‘country’ and all culture”⁷⁹. The narratives of Indigenous arts can tell about the movements of communities or ancestral beings across the land, or how the land was formed and became culturally and spiritually significant. Indigenous cultural practices of mapping and navigating are discussed in more detail in chapter 8: *Ethical wayfinding*. Mapping practically activates theory through performance, thought, gesture, corporeal interaction, speculation, movement, attuning, observation, and inscription to participate in the dynamism of a milieu. This activation is however also a curation because it is a partial encounter. Only certain pathways are taken, only some things are looked at, only some marks are made, only so many breaths are taken, only some particles are inhaled, only certain residues are deposited. Being in a place changes the dynamism and organisation of matter and makes new orientations and arrangements take place. Cutting into the milieu to extract values and meanings (data) seems at odds with immanent theories that talk against fixity and separation. Barad does not regard the things that incite changes in matter within phenomena as neutral or separated, Barad names these as apparatus⁸⁰.

Apparatuses can be something or someone that acts on matter to make it change however they are not separate but are “a property of the phenomenon ...[inseparable from] the object and the measuring agencies”⁸¹ of times, scales, and movements. Within the swirl of mattering of the event or site, inefficient mapping is

⁷⁸ Elizabeth Grosz, *Chaos, Territory, Art: Deleuze and the Framing of the Earth* (New York: Columbia University Press, 2008), 3.

⁷⁹ Brian Martin, “Immaterial Land.” In *Carnal Knowledge: Towards a ‘New Materialism’ Through the Arts*, ed. Elizabeth Barrett, and Barbara Bolt (London: I.B. Tauris, 2013), 196.

⁸⁰ Barad, *Meeting the Universe*, 139.

⁸¹ *Ibid.*, 139.

not separate to phenomena, it becomes a part of that configuring and reconfiguring as an apparatus that intercepts the milieu. The decisions and choices informing gesture (such as walking), marking (such as visually notating), or oration (such as storytelling or composing), create new boundaries between what is noted and what is ignored. Barad declares that, as well as being in phenomena, apparatuses “are themselves phenomena”⁸² comprised also of particles, energies and forces with different forms and meanings. Barad’s description of apparatus critiques tendencies within the sciences to maintain a separation between the scientist and equipment, and the things being investigated. Barad sees apparatus not as separate mechanisms that act on a world, but diverse, complex agents that incite a change. In my particular case, and as an example, I wear glasses, I have a fused spine due to scoliosis and I am left-handed. My spectacles; the fused bone and titanium rod that comprise my spinal fusion which makes me walk, sit, and stand in certain ways; the impression of the back brace that I wore as a child; my lack of exposure to sports; my left-handedness; the pens, pencils, tools, books, and paper of my art lessons; the hours drawing and my muscles moving in habitual ways — are all apparatuses, and phenomena. Apparatuses are not separate from phenomena they animate it, enacting a separation and forming “a resolution within the phenomenon[’s] ..indeterminacy”⁸³. When I am inefficiently mapping my drawing tools, body movements, spinal fusion and so on are only part of the apparatus. The maps I create are also apparatuses because the maps reconfigure the ongoing dynamism of movement and matter in phenomena. The drawing materials are also *my* apparatus because they work with muscles, materials, memories, thoughts, air currents, that constitute and refigure me.

Matter becomes organized through the agential cuts of apparatuses to create “relata-within-phenomena ...[and] exteriority-within-phenomena”⁸⁴. In Figure 1 the marks and scratches I place on the paper are made using the apparatuses of paper, pen, muscle, body, breath, memories, prior drawing acts. The matter of the water and its surroundings in phenomena becomes organized through these marks on the page and in doing this, new relations between matter in phenomena occur. The marks on the paper take aspects of matter in phenomena and create its condition of

⁸² Ibid., 170.

⁸³ Ibid., 140.

⁸⁴ Ibid., 140.

exteriority-within-phenomena. The moments of how the matter was, are inefficiently put together in the form of a map, but, remain in phenomena along with the apparatus (myself, pens, paper etc.). Apparatuses spark the movement of energy and matter into becoming organisations, and this movement perpetually forms different 'things' within phenomena. Energy drives particles to gather in particular clusters that are "not arbitrary but in fact materially specified and determinate for a given practice"⁸⁵ and this creates difference. Manning suggests that this perpetual separation is a diverted organisation of duration as much as matter and that forms emerge from a "schism in linear time"⁸⁶, which is to say, the disruption of a usual tempo is the precursor to the separability yet-to come. This disruption in time takes the form of a pre-emptive pause, or halt before the change in energy for a future actualisation to take place.

Exteriority, or formation within phenomena is emergent because it is brought about through changes in time or matter. Methods must take notice of the intra-active, ongoing emergent organisations that are constantly taking place and that they become a part of. Inefficient mapping, for example, can attend to the emergence of a breezy shift in the air, the breath in and the flex of a muscle before each stroke of a pencil, the flight of an insect, the flicker of sunlight, the grip of the sketchbook, the flow of water, the placing of the feet. Methods can only capture small moments of the continuous movements of multiple potentialities cycling around and returning. Other perpetually prefiguring pauses, actions, movements, thoughts, scapes, and matters are being continually generated and these perpetually alter phenomena. What is recorded, what is noticed and not noticed, and how the task fails in its capacity to capture an impartial, complete, rational account. Objects and subjects are recorded with an understanding that so much more is happening than can be included. This intentional failure highlights the speculative nature of inefficient mapping. The layered, multiple, simultaneous scratches and marks that emerge might be perceived as frenzied and hopeless. They do not distil or represent, nor do they produce a vista. Neither do they anchor phenomena in some settled state. Instead they record snippets here and there, glimpsing snatches of the complexity of a scene. Through partiality, inefficient mapping launches a visual critique on locking down a static,

⁸⁵ Ibid., 155.

⁸⁶ Erin Manning, *Relationescapes: Movement, Art, Philosophy* (Cambridge, MASS: The MIT Press, 2008), 24.

essentialized account (Yikun and Zhao 2015) and the limitations of representative data. Methods such as inefficient mapping, which contribute to the new research ontologies, are speculative, impure, imperfect, sometimes abstract and question “what *exactly* is prosthetic and what is biological”⁸⁷, in other words, what exactly is the separation between observed and observer in phenomena.

Of course, there remains a human in the scene; walking, moving, drawing, looking, selecting what to attend to, while much takes place irrespective of this activity. The human continues to have distinction in phenomena, even when experimenting with immanent ideas of in/non/human relations, because “the enactment of a cut ...depends on the specific embodiment of particular human concepts”⁸⁸ of value, interest, and relevance. Even though the mapping is making intra-active cuts in phenomena, it would be naive to think that it is an egalitarian event, that all aspects of the scene are equal. The human isn’t entirely centralized however because phenomena has agency which comes to bear on the activity. Grosz for example describes how “the forces of living bodies, by no means exclusively human ... create, through their efforts, networks, fields, territories”⁸⁹. Phenomena actively and directly participate in shifting the mass of energies, matter and particles - what Grosz (2008) calls the chaos into new configurations and new productions. Additionally, Manning infers that a body needs relationality to move, and that phenomena have a force that “acts causally on the sensing body in movement, dispersing its inertia”⁹⁰. A body needs an *else* or *other* to trigger incipient energy. So, although immanent and speculative theories help to orient away from human exceptionalism, it is difficult to delineate between human and more-than-human agency and power because of this co-constitution.

Speculative theories have extended ideas about thought, knowledge, and matter, and raised critical awareness of how dominant knowledges are formed and privileged, and how these have maintained the centrality of particular understandings and interpretations. Research in theoretical sciences emerging from feminist perspectives has been particularly instrumental in this speculative turn because feminist scientists were among the early voices that declared, “knowing does not come from standing at a distance and representing but rather from a direct material

⁸⁷ Manning, *Relationscapes*, 24.

⁸⁸ Barad, *Meeting the Universe*, 154.

⁸⁹ Grosz, *Chaos, Territory*, 3.

⁹⁰ Manning, *Relationscapes*, 54.

engagement with the world”⁹¹. As theories emerging from the post humanities and sciences expand scale, slow time, and hone our capacity to see, research ontologies must also become more refined to be able to respond to this different world intellectually and methodologically. The influence of theoretical concepts on the sciences must also shift humanities research to innovate new processes and strategies that draw theory through every aspect of the project. The influence of theoretical physics on the humanities is a challenge to the dominance of representation through a turn to the material and molecular. The take-up of physics theories by humanities researchers has resulted in a form of micro observation: “the idea that the world is composed of individuals with separately attributable properties”⁹². In mapping this means paying attention to micro-events such as movements and edges.

In terms of mapping, feminist philosophy, science studies, and immanent theories critically extend on western traditions of cartography and landscape painting that are motivated by ownership, colonisation, power, economy, trade, and nationhood. Theoretical sciences-influenced humanities research which includes new materialism (Alaimo and Hekman 2008; Ringrose and Coffey 2016; Willey 2016), object oriented ontology (De Hertogh et al. 2019; Schwartz 2018; Taylor 2016), posthumanism (Alaimo 2016; Braidotti 2013; Neimanis 2017), feminist geographies (McDowell 2018; Nxumalo and Cedillo 2017) and critical race theories (Asch 2017; Crenshaw 2018; Sturgeon 2016) think with theoretical sciences methodologically and draw scholarly attention to the preference and dominance of particular knowledges and accounts of the world. Collectively these theories show that phenomena are accented by tensions and uneven distributions due to disadvantage through poverty, race, gender, ability and more.

It is useful at this point to discuss another example of a creative project that complexifies phenomena. BUSH gallery is an outdoor, site-based gallery located across residential Indigenous urban and remote territories in British Columbia, Canada. BUSH Gallery is curated by First Nations artists Peter Morin and Tania Willard to foster “gatherings of like-minded folks united under questions concerning art making, land, Indigenous art history and interventions into the colonial”⁹³. BUSH

⁹¹ Barad, *Meeting the Universe*, 49.

⁹² *Ibid.*, 138.

⁹³ Peter Morin and Tania Willard, “Site/ation.” *Cmagazine*, 136 (Winter 2018): 8.

Gallery is important to my inefficient mapping project because BUSH Gallery centralizes interrelationalities between land and culture and how the human does not script the land but is embedded in it and connected to it. Morin and Willard interact with the land and with artists through “dialogue, experimental practice and community engaged work”, asserted as much by the land as by the artists to “articulate Indigenous creative land practices which are born out of lived connection to the land”⁹⁴.

BUSH Gallery practices “site/ation”; a transcorporeal knowledge system embedded within [First Nations] Indigenous ways of being, that enables exploration through the complexities of Indigenous knowing along with an active disengagement with western logic”⁹⁵. Morin and Willard’s site/ation is a play on the word citation which is the practice of acknowledging the impact of others on our own intellectual growth. Site/ation reciprocally and respectfully acknowledges deep history as well as ongoing politics through creative practice and between non/in/human open-ended collaboration. The practice of site/ation by BUSH Gallery artists is a more-than topological relationship to land, it is a complex “labyrinthine”⁹⁶ vision of place and land shaped by “all of the complexities that build contemporary Indigenous art, Indigenous knowledge, history, ancestors and future ancestors fusing time streams in a non-linear constellation of meaning, history and futurity”⁹⁷. Site/ation is not fixed to a linearity, or space, or identity that has been established by colonial occupation. Site/ation, is a practice of being in and on and with the land, through matter, histories, emotions, and politics. Site/ation is a practice of creating through connection to land, not by regarding its topologies or via a schema but by noticing through long association and connection and belonging and being defined by that relationality.

BUSH Gallery artist Billy-Ray Belcourt sees how site/ation is a practice for attending to the residues of histories, events, pains, lives, politics, religions, and bodies with varying rights. Belcourt’s photographs of the decay of now-disused buildings from the notorious Canadian residential schools focus on details such as rotten doors and empty forest scapes to show that “what remains exceeds the infrastructural remains. [First Nations] are caught up in the afterlife of captivity

⁹⁴ Morin and Willard, “Site/ation,” 6.

⁹⁵ Ibid., 8.

⁹⁶ Billy-Ray Belcourt, “To Be at the Mercy of the Sky.” *Cmagazine*, 136 (Winter 2018): 13.

⁹⁷ Morin and Willard, “Site/ation,” 8.

...infused with the violence of being left to float in the air like an unanswered question"⁹⁸. Belcourt's images read physical topologies as well as the non-representational, affective, metaphysical surfaces that remain through the violence of memory and experience. Belcourt's shock of seeing "white people ...camped on the shores of lesser slave lake, just a few feet away from this prison house" and appearing completely unconcerned about its history jolts Belcourt into the realization that, for white people, not thinking about that violence "is a way to think the world"⁹⁹. As Parker states, "attention to spatial and temporal difference and flexibility with gendered and other analytic frames"¹⁰⁰ is a vital attention for white and otherwise privileged people to commit to, to begin to do the work of acknowledging their role in history, and their ongoing colonizing practices. Diffractively reading spaces to see "the production of difference patterns"¹⁰¹ is not only a useful metaphor, as Haraway implies, it is a commitment to searching out and methodologically tuning-in to complexity.

It is important to expose the otherwise subterranean influence of settler-colonial practices and bring them into the open to understand how they affect phenomena. Elizabeth Povinelli sees how lives and worlds deeply affected by western dominance and white colonialism possess a different agency when theorized through posthumanities and immanent theories. Povinelli asks the question "How might we turn from an ontology of potentiality to a sociology of potentiality in which potentiality is always embodied in specific social worlds?"¹⁰², in other words, rather than look through the lenses of pathologizing or savior discourses to see fringe/poor/non-white communities as helpless and deny the specificity of lives and places dealing with disadvantage, poverty, racism, and colonisation, we can understand that these conditions for living are due to the ongoing power dynamics of colonisation and white supremacy, and that such lives are not already historicized through disadvantage but are vibrant and enterprising. Immanent theories shift a view of communities and sites impacted by colonialism from "catastrophes that seem to necessitate ethical

⁹⁸ Belcourt, "To Be at the Mercy," 13.

⁹⁹ Ibid., 13.

¹⁰⁰ Brenda Parker, "Feminist Forays in the City: Imbalance and Intervention in Urban Research Methods." *Antipode* 48, issue 5 (2016): 1347, <https://doi-org/10.1111/anti.12241>

¹⁰¹ Donna Haraway, "Modest_Witness@Second_Millennium." In *The Haraway Reader*, ed. Donna Haraway (New York: Routledge, 2004), 234.

¹⁰² Elizabeth Povinelli, *Economies of Abandonment: Social Belonging and Endurance in Late Liberalism* (Durham: Duke University Press, 2011), 14.

reflection”¹⁰³ by those in privilege and power to a view that holds them in the open to show their vitality and their quivering energy. New methods that can bring into the open the observations and proposals embedded in speculative and immanent thinking and do the work that is needed are vital in this regard.

Povinelli espouses the value of immanent theories and particularly how the posthumanities critique the conditions of life and the importance of the “materiality of the social”¹⁰⁴. A posthumanities critique considers life beyond the social, the human, and the discursive to include histories, affects, politics, environments, matters, and critters, exposing “the parts that have no part but are nevertheless living among us”¹⁰⁵. An immanent posthumanities critique of the social not only dislodges anthropocentrism, it theorizes life and the effect of mainstream conservatisms and power dynamics. Similarly, inefficient mapping can visualize the spaces between and make them more noticeable. As an experimental method, inefficient mapping can articulate how complexity occurs and makes the world.

¹⁰³ Povinelli, *Economies of Abandonment*, 13.

¹⁰⁴ Ibid., 5.

¹⁰⁵ Ibid., 77.

Experimental methods

Inefficient mapping responds experimentally to the methodological needs of scholarship concerned with critiquing dominant ideas and conceptions of land, place, and space. This chapter into experimental methods first discusses critical readings of place and the problematics of applying methods designed to uphold colonial interests, to critical place inquiry projects. Critical place inquiry advocates for the development and application of new methods that are not only capable of producing diverse research records, they also work against the perpetuation of colonial privilege. The chapter then engages with recent writing into experimental methodologies more broadly with a particular focus on non-representational methodologies, and how non-representational methodologies can pay attention to the *things* not commonly recorded in traditional research such as affects, registers, and sensations. The strong creative seam running through non-representational methodologies is then discussed in relation to some of the strategies artists use to methodologically investigate non-representational affects and atmospheres. The chapter examines how artists use protocols as a methodologic practice for interpreting and recording within investigative projects. The chapter concludes with discussion on what experimental methods, such as the methodologic protocol of mapping inefficiently does for thinking about the world. Examples of inefficient mappings are included throughout the chapter to detail how methodologic protocols facilitated careful recordings and deeply theorized non-representational readings of places and spaces.

Inefficient mapping: a protocol for attuning to phenomena is an account of a research methodology that thinks-with immanent and speculative theories that recalibrate the ontology/methodology relationship. Recent immanent and speculative theories are not the first theories to question western scientific research practices. St.Pierre (2014) for example, cites Foucault and Derrida to argue that ontological critique as articulated by poststructural theories offer ways of rethinking conventionalized ideas about reading the world, and what/who counts as a subject and as a voice of authority. Poststructural scholars including St.Pierre (2014), Lather (1992), MacLure (2013) Chaudry (2000) have commented on connections between ontology and methodology and the ways that scientific discourses can uphold research conservatisms that fixate on proof, empiricism, and the attraction of

distilled reporting that has broad public translation and appeal. Denzin (2013) also comments how “posthumanist, postempirical, and postqualitative frameworks call for new models of science, second empiricisms, reimagined social sciences, capacious sciences, sciences of difference”¹⁰⁶ (Denzin 2013, 353) to overhaul the persistence of a Cartesian rationalist research agenda which primarily serves neoliberal, hegemonic, heteronormative interests. Further, Tuck and McKenzie consider how new materialist, sociomaterial theories, and Indigenous research “highlight potentially fruitful research methods for better considering land and materiality in critical place research”¹⁰⁷ that seeking out seams of convergence to establish new methodological modes for understanding the world, not from an exclusively human perspective.

Experimental methods can reimagine the possibilities for research activity and data. Experimentation doesn’t only invigorate research practices; new approaches begin to challenge research norms and habits that are focused on neutralizing “the agency of people and politics”¹⁰⁸ in the research project. Western scientific research traditions that equate neutrality with purity and reliability have fostered investigative models that prioritize the importance of methods and data management over political/theoretical/conceptual/ideological intentions. Springgay and Truman see this fixation on method as one of the great western research habits, describing how “methods are determined in advance of research ...to aid a researcher and/or participant in gathering some kind of evidence”¹⁰⁹. Long-standing requirements around research impartiality have established research norms that are far from neutral however, because these readings “empirically and methodologically skew away from feminist contributions and complex studies of inequality”¹¹⁰. The notion of the impartial, *invisible* researcher has emerged from a privileged position, with research neutrality coming from a view of the world whereby whiteness, heteronormativity, masculinity is normalized. Privilege, which is often the result of

¹⁰⁶ Norman K. Denzin, “The Death of Data?” *Cultural Studies - Critical Methodologies* 13, vol. 4 (2013): 353, <https://doi-org/10.1177/1532708613487882>

¹⁰⁷ Eve Tuck, and Marcia McKenzie, *Place in Research: Theory, Methodology, and Methods*, (London: Routledge, 2015a), 101.

¹⁰⁸ Eve Tuck and Marcia McKenzie, “Relational Validity and the ‘Where of Inquiry: Place and Land in Qualitative Research.” *Qualitative Inquiry* 21, issue 7 (2015b): 633, <https://doi-org/10.1177/1077800414563809>

¹⁰⁹ Stephanie Springgay and Sarah E. Truman, “On the Need for Methods Beyond Proceduralism: Speculative Middles, (In)tensions, and Response-ability in Research.” *Qualitative Inquiry* 24, issue 3 (2017): 205, <https://doi-org/10.1177/1077800417704464>

¹¹⁰ Brenda Parker, “Feminist Forays in the City: Imbalance and Intervention in Urban Research Methods.” *Antipode* 48, issue 5 (2016): 1339, <https://doi-org/10.1111/anti.12241>

dominance assumes the possibility of the invisible observer due to having a sense of rights and entitlement to access and observe all aspects of the land, people and environments, and to be able to construct *objective* readings of these (Parker 2016) due to the observed differing from the privileged group.

Tuck and McKenzie's work on critical understandings of place in research (2015a; 2015b) challenges the invisibility of the privileges embedded in research impartiality by exposing how place-based research is rarely neutral and that the researcher is rarely truly impartial due to their own subjectivity. Tim Ingold extends this point of researcher subjectivity as he declares, "Our reflections ...must also extend to the instruments we use, and their orchestration"¹¹¹, meaning that the researcher shapes how theories and methodologies inform projects. Thus, researcher subjectivity is as responsible as are critique, theory, and method for the treatment of investigative evidence. As Tuck and McKenzie explain, the implications of maintaining research neutrality — i.e., a rational, impartial, apolitical standpoint — affect almost everything about a research project. Using critically-theoretically informed methodologies is vital in projects such as those in critical place inquiry whereby a key seam underpinning the work might include issues of "Indigenous sovereignty, refusal, and the non-abstraction of land"¹¹². Tuck and McKenzie flag the problems with methodological impartiality and instrumentality and the impacts this has on Indigenous research, explaining that even critical theories can be ineffective unless "Indigenous theories, methodologies, and methods [are] at the center, not on the periphery"¹¹³. Tuck and McKenzie articulate how, in critical place inquiry, methodology is crucial because much of the research is not a straightforward sociological project but is often about the "spacialized and place-based processes of colonization and settler colonialism". Innovative, responsive methodologies can "take seriously the conceptual and empirical contributions of Indigenous epistemologies of land"¹¹⁴ to lives and knowledge systems. In critical place inquiry, experimental methodologies are centralized to facilitate "approaches that are informed by the embeddedness of social life in and with places ... [as] a form of action in responding to critical place issues such as those of globalisation and neoliberalism, settler

¹¹¹ Tim Ingold, "Foreword." In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), viii.

¹¹² Tuck and McKenzie, "Relational Validity," 636.

¹¹³ Ibid., 636.

¹¹⁴ Ibid., 635.

colonialism, and environmental degradation”¹¹⁵. In effect, Tuck and McKenzie present critical place inquiry less as a conventional academic discipline and more as a methodological practice of ideas, understandings, and acts that work speculatively together to examine the ethics of research that is “responsive to people and place”¹¹⁶. The concerns that Tuck and McKenzie raise around representation and materiality illustrate the persistence of settler colonial perspectives in research, not so much in relation to the methods applied but “the *logic of procedure and extraction* that needs undoing”¹¹⁷ to topple the centrality of white exceptionalism and to fully instigate new methodologic and datalogic possibilities. Non-representational theories and methodologies hold much potential in this regard. Non-representational methodologic protocols have helped researchers to attend to “conceptual undercurrents in their work, such as vitality, performativity, corporality, sensuality, and mobility”¹¹⁸, attuning to what can be seen but not necessarily obviously, what can be felt, and how energies and components of phenomena intra-act.

Because methodologies can be instrumental in upholding politics and prejudices, new methodologies need to be critically responsive and effectively able to bring stories into the open in ways that pay attention to the politics of subjectivity, and resist perpetuating colonial subjective, cultural and racial hierarchies. Being critically responsive rethinks notions of care and enables experimental methodologies to “generate [possibilities] for other ways of relating”¹¹⁹. Research methodologies that are immersed in complexity, and methods that attempt to map complex interrelationalities must therefore not only advocate for difference, they must require it. The inefficient mapping methodology for example must foreground “anti-racist and feminist theoretical, methodological, and empirical insights” (Parker 2016, 1337), especially when mapping in the urban context to dismantle the centrality of whiteness and offer diverse readings and perspectives. Figure 1 provides such an example. A small group of early childhood academics sit in a circle with educators who work at a kindergarten. The group of women have different nationalities and speak English as their first, second or third language. They each are differently

¹¹⁵ Tuck and McKenzie, *Place in Research*, 2.

¹¹⁶ Tuck and McKenzie, “Relational Validity,” 633.

¹¹⁷ Springgay and Truman, “Beyond Proceduralism”, 204.

¹¹⁸ Phillip Vannini, “Non-representational Ethnography: New Ways of Animating Lifeworlds.” *Cultural Geographies* 22, issue 2 (2015b): 317, <https://doi-org/10.1177/1474474014555657>

¹¹⁹ Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis: University of Minnesota Press, 2017), 65.

educated and professionally expert in the area of early childhood education. They sit together, discussing a collaborative project that will introduce kindergarten science learning through nature play. As they talk their hands gesticulate their ideas and speech, adding a corporeal dimension to the discussion. This inefficient mapping traces some of these gesticulations, making marks that convey the speed, directions, and size of the gestures and the traces that fingers and hands make in the air. While the research project that the women are discussing will go on to produce additional bodies and types of data, this inefficient mapping foregrounds Tuck and McKenzie's other ways of relating through marks that map the complex interrelationalities between diverse feminists/women as they communicate.



Fig. 1 Inefficient mapping, hands. Source: Linda Knight. Permission granted by Linda Knight

Experimental methodologies such as inefficient mapping is sensitive to the ethico-political undercurrents of the world and are able to scratch open the aspects usually concealed. In the Figure 1 example, the mapping of hands pays attention to the ethico-political importance of collaboration between women working in early childhood education, and is a feminist noticing of the importance of conversations as intellectual work that takes place in a sector that has a predominantly female workforce, and that is often intellectually dismissed and under-regarded.

Inefficient mapping contributes to methods that connect to the complex and difficult aspects of the world, and that address ethical questions and contexts. As the example in figure one shows, research methodologies such as inefficient mapping, that work with speculative and immanent theories can critique prejudices and privileges through paying attention to incidences of “respectful collaboration, dynamic storytelling, and reciprocity”¹²⁰. Centralising these usually concealed moments helps to build research processes that challenge the “colonizing practices”¹²¹ of gathering particular types of data that upholds the interests of a privileged few. Inefficient mapping contributes to this challenge by critiquing common mapping practices, and by thinking-with theories in ways that are sensitive and attentive to “the insensible, immaterial, and untimely dimensions”¹²² of the world. Experimental methods that think-with and act-with immanent and speculative theories, such as inefficient mapping, can take note of the intense zones that are difficult to quantify, such as the movement of hands during a conversation. In this way new, experimental methodologies such as inefficient mapping purposefully pay attention to the subjective, the material and metaphysical through the histories, power and significance of the more-than-human world. New ways of thinking about the world (Puig de la Bellacasa 2017) can make us care-fully attend to alternate readings of space that include the impacts of whiteness, masculinity and colonization on human as well as in/non/human things and agencies. Puig de la Bellacasa sees that caring is critical in current times, but it must be a caring that is political and not necessarily rewarding. Critical care takes place in the thick of life in the hope of transforming the “affective perception of things”¹²³. In the context of research, critical caring emerges through the development of methodologies that may be more laborious because they expose mainstream perceptions of contexts and situations that are usually, and ironically “concealed in research”¹²⁴. Methodologies that attend to what is commonly overlooked can provide richer readings however, because they explore the subterranean presence and impacts of “gender, race, and intersecting

¹²⁰ Christine Rogers Stanton, “Crossing Methodological Borders: Decolonizing Community-Based Participatory Research.” *Qualitative Inquiry* 20, issue 5 (2014): 573, <https://doi-org/10.1177/1077800413505541>

¹²¹ Rogers Stanton, “Crossing Methodological Borders,” 573.

¹²² Kathryn Yusoff, “Insensible Worlds: Postrelational Ethics, Indeterminacy, and the (K)nots of Relating.” *Environment and Planning D: Society and Space* 31 (2013): 208, <https://doi-org/10.1068/d17411>

¹²³ Puig de la Bellacasa, *Matters of Care*, 65.

¹²⁴ Tuck and McKenzie, “Relational Validity,” 635.

inequalities”¹²⁵ that are not accounted for through methods that prioritize neutrality and impartiality.

Turns toward immanent and speculative theories generates the need for new, experimental methodologies that will provide “better, profounder, more accurate vision”¹²⁶ of phenomena, read through analyses that remain in the mess (Ahmed 2013; Pratt 1986), i.e., analyses that do not distil or schematize the complex ways that materiality, corporeality, politicality and feminism are present in the world. This need for a more profound and more finely tuned observation of complexity challenges the pervading authority of representationalism over the design of research methods, including those methods used in qualitative research (Springgay and Zaliwska, 2015). Despite this pervading authority, representational methodologies are problematic because they organize the “abstract qualities”¹²⁷ of each contributing facet of the multiple goings-on in the world into reductive schema. These schematic organisations are “effectively concrete in their becoming related”¹²⁸. Deleuze and Guattari refer here to the ways that individual components of the milieu can become particularly coded, and collated, fixed, and attributed to certain schema. Representational methods, then, counteract the desire to remain in the mess because they privilege attempts to reduce the “manyness” of things to “the One”¹²⁹ comprehensive image.

By contrast, non-representational methodologies uphold the expansiveness of the world in the research project by tuning into affects, occasions, lights, sounds, disruptions without collating them into a fixed schema. Non-representational methodologists such as Mimi Sheller and Philip Vannini propose that non-representational theory “concerns itself with practice, action, and performance”¹³⁰ as modes of investigation and analysis to attune to things and elements that are not easily described. These investigative modes help to “reveal old and new potentialities”¹³¹ that might be otherwise regarded through specific representations.

¹²⁵ Parker, “Feminist Forays,” 1337.

¹²⁶ Puig de la Bellacasa, *Matters of Care*, 97.

¹²⁷ Giles Deleuze and Felix Guattari, *Anti-Œdipus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1983), 263.

¹²⁸ Deleuze and Guattari, *Anti-Œdipus*, 263.

¹²⁹ Giles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia* (Minneapolis: University of Minnesota Press, 1987), xiii.

¹³⁰ Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*. (New York: Routledge, 2015a), 4.

¹³¹ Vannini, *Non-Representational Methodologies*, 7.

In this way non-representational methodologies test “the very value of empirical research, the nature of data, the political value of evidence”¹³² and undermine human exceptionalism through the honing-in on different registers and capacities, questioning “the anthropocentric narrative that has underpinned our view of humans-in-the-world since the enlightenment”¹³³. Non-representational methodologies are vital (Sheller 2015), deeply and critically theoretical, embodied thinking and theorising that generate and create relations with the world through physical engagements. They sprout affective associations between registers, spaces, times, and scales and complicate relationalities between thinking and being in and with the world. Figure 2 demonstrates how an inefficient mapping tuned in to the non-representational, affective registers in an Australian rainforest.



Fig 2. Inefficient mapping, Australian rainforest. Source: Linda Knight. Permission granted by Linda Knight

¹³² Ibid., 2.

¹³³ Barbara Bolt, “Introduction: Toward a ‘New Materialism’ Through the Arts.” In *Carnal Knowledge: Towards a ‘New Materialism’ Through the Arts*, ed. Elizabeth Barrett, and Barbara Bolt (London: I.B. Tauris, 2013), 2.

The mapping connects to place, space, history, colonization of Aboriginal lands, and the multispecies geographies of nonhuman citizens within the space. The rainforest is small, it sits as a lush patch of green amongst large stretches of farmland. When white colonists came and took the land from the local Gubbi Gubbi Aboriginal communities, the section of land that is now the rainforest reserve was preserved in perpetuity by a white colonial family. The dense vegetation of the rainforest, compared to the sparse greenery of the vast farmlands that surround it means that the reserve contains concentrated numbers of wildlife, including small mammals, marsupials, and many birds. The mapping traces the call sounds of the Australian native male and female Eastern Whipbird. Mapping the bird calls pays specific attention to the shapes made by the notes, however the mapping also attends to the ecological impacts of colonization on the availability of wildlife habitats. The high concentration of wildlife in the rainforest reserve is directly related to the colonial destruction of the wider rainforest in the region.

Non-representational theories and methodologies hold much potential in helping researchers to attend to “conceptual undercurrents in their work, such as vitality, performativity, corporality, sensuality, and mobility”¹³⁴ (Vannini 2015b, 317), attuning to what can be seen but not necessarily obviously, what can be felt, and how energies and components of phenomena intra-act. Non-representational methodologies are performative, eventful ways for finding out about the world through taking note of affects, sensations, memories, atmospheres, movements, politics, trails, pathways, and sounds. McCormack sees this attuning performativity as offering loose “yet often exacting ways of enacting thinking that involve cultivating attentiveness”¹³⁵ to the animacies in the world. The researcher and acts of researching are subsumed and “attuned to the qualities of phenomena”¹³⁶. Attentiveness is thinking, thinking is tuning-in, and thinking/tuning-in is variable and generates intense relational impacts on the field event/phenomena.

The discussion and mapping examples show that, as a new experimental method, inefficient mapping extends beyond the descriptive capacities of language and writing to use artistic strategies and practices, specifically through gestural

¹³⁴ Vannini, “Non-representational Ethnography”, 317.

¹³⁵ Derek P. McCormack, “Devices for Doing Atmospheric Things.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed Phillip Vannini (New York: Routledge, 2015), 94.

¹³⁶ Kathleen Stewart, “New England Red.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed Phillip Vannini (New York: Routledge, 2015), 20.

drawing. The wider field of drawing research has focused on the power of drawing to aid memory (Salamon 2018; Wammes, Meade, and Fernandez 2016) and drawing beyond an artistic practice (Duff and Sawdon 2008; Farthing et al. 2007). Inefficient mappings are a research-based drawing practice; however, drawing is not the only mode that counts. In the case of inefficient mapping, the material (which include drawing materials, and the things in a place/event); the visual (which include marks, scratches, lines, smudges); the physical (which include muscles, breaths, steps, positions, of the mapper and of other beings in the vicinity); and the metaphysical (which include politics, identities, histories, futures, ideas) are equally important, working in interrelated ways and remaining present in the mappings produced. As stated in chapter 4: *Theoretical framework* aspects of phenomena, including the material, visual, physical, and metaphysical remain via the deliberate spaces and absences in the mappings, as what is noticed and inefficiently recorded through drawn marks. The mappings are a form of observational drawing, but not only that. Springgay and Zaliwska see diagramming for example, not as instructional drawing but as “an open process that is emergent, vital, and abstract”¹³⁷, the mappings, similarly, are a theorized, gestural, visual, and partial (hence, inefficient) account of a research fieldwork event. Inefficient mapping is a hybrid arts practice, partly visually marking snippets of phenomena, partly theorising on the world, partly speculating on futures and pasts, partly and curiously touching the tenses and registers of the space.

Methodologies that centralize creative practice (arts-based research and research creation being clear examples) offer methodological possibilities to “resist representation”¹³⁸ and maintain a complex reading of the world. As an example, Karen O’Rourke sees the labyrinth as a potent trope for addressing the affects of location. O’Rourke (2013) catalogues a series of artist installations that use wayfinding as a political comment on exclusion, oppression, and politics, including:

- The labyrinths designed by the Situationists to critique the orderliness of western civilisation;

¹³⁷ Stephanie Springgay, and Zofia Zaliwska. “Diagrams and Cuts: A Materialist Approach to Research-Creation.” *Cultural Studies - Critical Methodologies* 15, issue 2 (2015): 137. <https://doi-org/10.1177/1532708614562881>

¹³⁸ Springgay and Truman, “Beyond Proceduralism”, 204.

- Artist installations at the Stedelijk Museum, Amsterdam that disorient visitors via “immersive spaces through which the visitor walks”¹³⁹; and
- The installations of corridors and claustrophobic spaces, such as Robert Morris’s *Passageway* and Ilya and Emilia Kabakov’s *Labyrinth (My Mother’s Album)* that recreate discomfiting journeys back into childhood trauma.

O’Rourke fixes on the labyrinth because it “reappears every time we make a decision for which we have trouble predicting the consequences ...we learn to mistrust our senses. When we see the end in sight, we may be in reality farthest from our goal”¹⁴⁰. The circuitous, circular organisation of the artist labyrinths and corridors halt a sense of surety, the straight march of the colonizer, and of the segmenting divisions of the urban plan with its associated social hierarchies and tiers. The usual navigatory processes will not work, other things take over, affects and sensations direct choices and the way through is uncertain. The artist installations create situations and environments that expose audiences to the affective, historic, cultural, multispecies, messy ways that spaces are, and how differently they can be experienced and known.

As another example, the artist Kevin Lynch interviewed US city dwellers over a period of five years, asking them to create local wayfinding maps. Taking the maps, Lynch devised a grounded theory of five elements of urban dwellers’ movements to show how people “perceive and find their way in urban space”¹⁴¹. The five elements, which move from the micro to the macro are effectively linear readings of the city. At the micro level they include paths and walkways, and at the macro are city districts: “shopping areas, residential zones and historical city centres”¹⁴². Creative, practice-based methodologies embrace experimental textual, corporeal, gestural, visual, sonic means to take note of and create intellectual responses to the world. This is not about inserting arts practices into research projects because the arts have their own symbolic, connotative, aesthetic agendas and these will not simply slot into the space occupied by the methodological task. But the modes by which corporeal, gestural, sonic, and aesthetic works are created can and should be used

¹³⁹ Karen O’Rourke, *Walking and Mapping: Artists as Cartographers*. (Cambridge, MASS: The MIT Press, 2013), 105.

¹⁴⁰ O’Rourke, *Walking and Mapping*, 111.

¹⁴¹ *Ibid.*, 113.

¹⁴² *Ibid.*, 113.

methodologically because they attend to the non-representational, the affective, the micro, the matter(ing). Inefficient mapping does not use creative practice to make a removed drawing/artistic work of a place. Inefficient mapping advances new experimental research methods because it entangles the gestural and corporeal with the conceptual, the political, the theoretical, through visual responses that do not become separate, independent artistic works. Inefficient mapping remains with the research question/provocation and uses gestural marks that bring the concepts and propositions within speculative and immanent theories into view.

Bennett asks, “what method could possibly be appropriate for the task of speaking a word for vibrant matter? How to describe without thereby erasing the independence of things?”¹⁴³ Bennett’s questions articulate the need for more rigorous methods that can acutely activate the ideas and concepts in speculative and immanent theories. These are methods that have the modal capacity to attend to and reveal multiple aspects of detail across different scales and registers of phenomena in uncompromized ways. Experimental creative practice has influenced inefficient mapping, particularly in projects whereby artists interrogate method and how methods and protocols produce trustworthy or rigorous evidence. Protocols can activate artistic thinking to speculate on phenomena. This kind of activation is important for new research ontologies that are attempting cross-pollinated, elastic processes that are in-creation with and rigorously conceptualize the research investigation. A protocol is an official system of rules such as the accepted or established code of procedure or behavior in any group, organization or situation, whereas, a method is a particular or established procedure that is well-organized and systematic in thought or action. O’Rourke articulates that “A protocol is a rule, guideline, or document that specifies how an activity should be performed”¹⁴⁴ and goes on to say how, in the arts, “a protocol is a set of rules that an artist establishes to realize an artwork ... an artistic protocol may deliberately leave room for interpretation, thus making it possible for a work to be executed in more than one way or restaged by someone else”¹⁴⁵. There are differences between a project protocol and a project method. The protocol is dualistic: strictly structured by explicit rules in order to facilitate diverse interpretations; the method is singular: basically,

¹⁴³ Jane Bennett, *Vibrant Matter: A Political Ecology of Things*. (Durham: Duke University Press, 2010), xiii.

¹⁴⁴ O’Rourke, *Walking and Mapping*, 47.

¹⁴⁵ Ibid., 47-48.

structured as a sequence to ensure a consistent application, however each step of the sequence might be done slightly differently each time. As an example, the protocol that Julio Cortazar and Carol Dunlop prepared for their work *Autonauts of the Cosmoroute* involved traveling the A6 motorway in France while following four strict rules (O'Rourke 2013). The rules set out specific conditions which included never leaving the autoroute, always sleeping the night in the second rest area encountered, undertaking topographical studies of the rest area, and writing a travel book. These protocols are exacting but are intended to ignite diverse creative explorations. A common aspect of the protocol is to set rules as problem-setting that force unexpected experimentations as explorative problem-solving. By contrast a method, such as interviewing participants for a research project, follows a clear and established sequence: establishing the interview questions, gaining ethical permission, securing participants, meeting, interviewing and recording the interview conversation, storing the recording securely, analysing the recording. The exact procedure of the methods varies slightly within each research project; however, it provides a sequence that is established as effective in obtaining focused information that is connected to or elucidates on the research question.

It is useful at this point to briefly discuss the walking/mapping performances of the Situationists to highlight how other artistic methodologic protocols can perform different kinds of urban mappings. The Situationists created interventions and performative mapping works that critiqued the ways that city zoning regulated human movement and behavior. Situationist artists Guy Debord and Asger Jorn devised psychogeographical mapping, a process that utilized unplanned walking, or urban drifting through streets to “decode urban space by moving through it in unexpected ways”¹⁴⁶. A series of experimental walking events were organized in Paris to reassemble street maps, renegotiate the city and represent “the flow of atmospheres”¹⁴⁷ between different city zones. O'Rourke describes how the Situationists used walking as a methodologic mapping protocol to retheorize familiar scapes and notice “things that from force of habit we have forgotten how to see”¹⁴⁸. The drifting walks changed the affective register and the habits of movement within a city that foster particular scenes of everyday life. The Situationist derives

¹⁴⁶ O'Rourke, *Walking and Mapping*, 7.

¹⁴⁷ Ibid., xviii.

¹⁴⁸ Ibid., 68.

took them out of habitual patterns of movement generated by fences, zones, buildings and other constructed barriers as well as the routine negotiations of the repeated actions of everyday living: working, eating, travelling. The walking/mapping became a protocol that generated unexpected happenings in highly mundane settings. The Situationists' methodologic protocols fixed on examining "the influences that shape our experience of walking"¹⁴⁹ and demonstrate ways to walk through a place and see that place as you walk. The experimental psychogeographical events the Situationists curated worked to their urban living manifesto, and they used psychogeographical mapping methodologically to illustrate "the 'socio-logic' of the city"¹⁵⁰, through their performances, drifting walks, and visual maps.

Psychogeographical mapping is a process for interacting with the urban environment in curatorial ways, selecting aspects of a scene to map in order to analyse how communities dominate or belong to a city.

Psychogeographical mapping differs to the protocols informing inefficient mapping; where the Situationists focused specifically on composition in their mapping, inefficient mapping is attentive and interested in the ethics and politics of the urban milieu, and its chaotic components. Methodological protocols push the inefficient mapping towards their extreme potential. The limitation of working to an exact protocol forces experimental response, and this generates expansive possibilities for reading the world, through and with theories that are concerned with alterity and complexity. The challenge of dealing with processual rules controls the practice and context of mapping and forces theories and concepts to remain mindfully present as the mappings are created. The mappings in figures 3 and 4, for example, are part of a collection that followed specific protocols: to use ink; to work on tracing film; to hold the paper pad against my body while mapping; to not look at the paper while mapping; and to trace the *edges of privilege*.

¹⁴⁹ Ibid., xviii.

¹⁵⁰ Gert Biesta and Gillian Cowell. 2012. "How is Community Done? Understanding Civic Learning Through Psychogeographic Mapping." *International Journal of Lifelong Education* 31, no. 1 (2012): 52. <https://doi-org/10.1080/02601370.2012.636587>



Fig 3. The edges of privilege - 1. Source: Linda Knight. Permission granted by Linda Knight

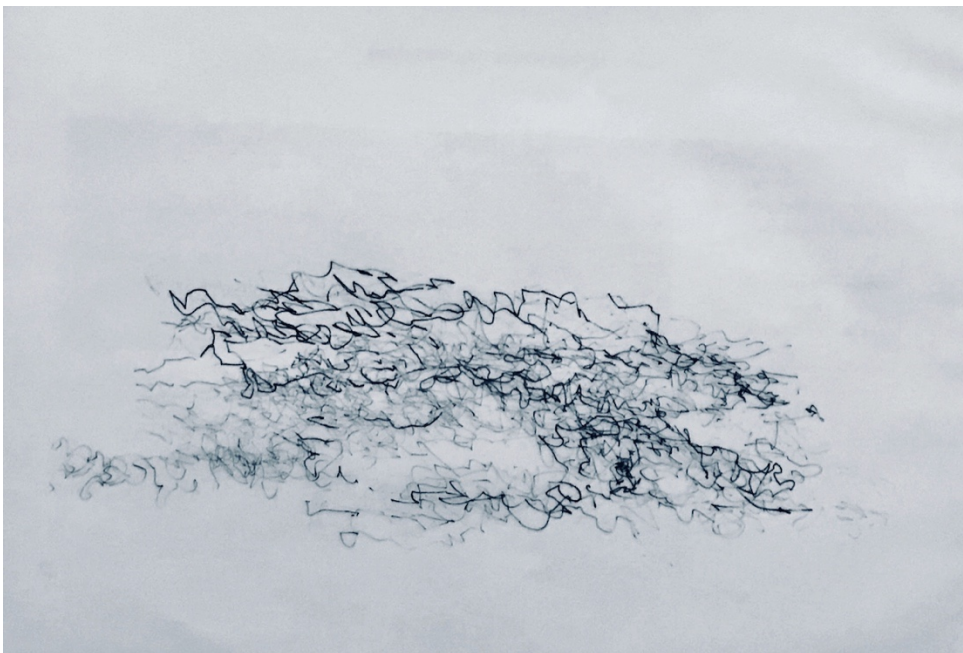


Fig 4. The edges of privilege - 2. Source: Linda Knight. Permission granted by Linda Knight

Mapping protocols are discussed in more detail in chapter 6: *Inefficient mapping*, however the examples in figures 3 and 4 form part of a collection that examines how privilege might be mapped. The boundaries and edges of things that are encountered, owned, familiar, experienced are mapped, and the selections for

the mappings are generated by the protocol *along with* the concepts within speculative and immanent theories of colonialism, feminism, nationhood, and critical studies of place. The exacting protocol forced me to think expansively about how I might map privilege differently within each map. I was forced to think deeply about theories and concepts and to work these through mappings that explored different aspects and demonstrations of privilege. This included mapping the edges of belongings, parts of the neighborhood, the architecture of the home, the places one can visit. Although the maps contain the edges of *things*, they are non-representational because following a methodological protocol, which insisted on mapping edges only, visualizes only parts of things and diverts away from the desire to build a coded, representational schema or image of privilege.

In summary, experimental methodologies help to challenge conventional notions of research because they trouble ideas of neutrality and invisibility. Experimental methods reject neutrality and invisibility by being immersed in events and a part of the tensions, activity, and the many details that constitute phenomena. Experimental methods are what Sheller describes as vital methodologies; creative processes for “evoking properties, energies, attunements, arrangements, and intensities in a renewed exploration of embodiment, spatiality and sociality”¹⁵¹. Events are vitally important to experimental methodologies because they “inevitably highlight not instrumental plans, blueprints for action ... [but] the possibility of alternative futures, the failures of representations, the contingencies of interventions, and the effervescence with which things actually take place”¹⁵². Through acts, practices, thoughts, and speculations experimental methods are generating new ontological connections between interrelationalities, phenomena, matter, and meaning by maintaining the complexity and detail of those relations. Manning advocates for processes that are rigorous and also experimental, unorthodox and that has “anarchy at the heart ...[using] techniques that tune the anarchical into new modes of knowledge”¹⁵³. Experimental methodologies like inefficient mapping are as *tuned-in* to what is not placed on the page as what is noted, and also *tune* the chaos and anarchy of phenomena in ways that are pertinent

¹⁵¹ Mimi Sheller, “Vital Methodologies: Live Methods, Mobile Art, and Research-Creation.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 134.

¹⁵² Vannini, *Non-Representational Methodologies*, 7.

¹⁵³ Erin Manning, “Against Method.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 63.

to complex, immanent, speculative, feminist theories and critiques. In this way, inefficient mapping advances research methods by maintaining the visibility and centrality of speculative and immanent theories through the research project, and by resisting the pressure to generate representational data that primarily benefits a privileged few.

Inefficient mapping

The dilemma of the methodology text is how to describe and present a process that is visual, corporeal, animated, and gestural. How to describe that mappings emerge not from standing apart and impartially observing but that they are immersive and part of the entire phenomena of moving clustering relationalities? How to describe a methodological protocol of looking and mapping, not as an observational practice but as something that is interior, shifting the energies and constituencies of phenomena. Inefficiently mapping is “a duration expressed”¹⁵⁴ in and with phenomena.

The *inefficient* descriptor in inefficient mapping is purposefully used because inefficiency is a word of resistance and of speculation. Inefficiency resists order, regulation, resists maintaining a cool distance from the subject and the striving for neutrality and impartiality. Particularly, placing the term *inefficient* within the label of a research methodology purposefully resists the dominance of quantified, rationalized approaches to knowledge acquisition in research, and how that dominance also refers to the subjective privilege of the usual beneficiaries of research. Inefficiency is incredibly affirmative because it cherishes and salutes the complex imperfections of life and how lives chaotically intersect in perpetually unpredictable and unrepeatable ways, and how those lives intersect with matter, non-human and inhuman others in perpetually unpredictable and unrepeatable ways. Inefficiency takes note of the scale of the researcher in this enormous, shifting landscape and how that researcher will be able to notice some but never all of what is there.

At first glance inefficient mappings have the appearance of fine art drawings. Certainly, they are drawn; the examples throughout this book are mappings drawn on different paper surfaces, and on a digital tablet. The examples might also seem similar in appearance to the fine art practices of gestural drawing¹⁵⁵, or movement drawing¹⁵⁶ which also feature abstract compositions of drawn lines on a surface. Appearance should not ascertain whether inefficient mappings are the same as fine art drawings however, this is a simplistic analysis that assumes similarity is generated by the finite possibilities of human bodies wielding particular (similar)

¹⁵⁴ Erin Manning, *Relationescapes: Movement, Art, Philosophy* (Cambridge, MASS: The MIT Press, 2008), 86.

¹⁵⁵ Such as the gestural drawings by Julie Mehretu.

¹⁵⁶ Such as the *LIVE TRANSMISSION* movement drawings by Morgan O'Hara.

materials such as drawing papers, pencils, erasers, ink pens. More important, and the aspects that set inefficient mappings apart from fine art drawings, are the reasons and concepts that inform and prompt the production of mapping inefficiently. The reasons and concepts between fine art gestural, and fine art movement drawings are significant. Detailed discussion on the reasons and concepts informing inefficient mapping are discussed at length throughout the book, these help to emphasize how inefficient mapping differs from other drawing practices.

Secondly, the purpose of inefficient mappings is to *map* phenomena rather than *draw*. How is mapping different to making a drawing of a place (spatial/landscape drawing)? Significantly, how is abstracted mapping different to an abstracted spatial/landscape drawing? Extending on the discussion in chapter 2: *Maps and mapping* helps to articulate how inefficient mapping maps rather than draws phenomena. Conventionally, maps are produced (sometimes as a document, sometimes ephemerally as a walk, or through scratching into dirt) to offer an orientation. Purposes or reasons for these orientations are varied and include the intention to farm, colonize, mine, survey, or preserve lands, spaces and places. Different purposes assume different expectations of the map: to be readable and informative, using legends and schematic symbols to help direct other people who were not involved in making the map or who are unfamiliar with a location; or designed only to orient very few others for very specific purposes (such as to locate a protected, culturally-sensitive location). The expectations of the inefficient mappings are that, they may contain abstract lines and marks that may not be generally readable by others, but they are highly functional to the person who created them because they remind and reconnect to the place where they were created. Fuller discussion on the differences between conventional mapping and inefficient mapping is established in chapter 2: *Maps and mapping*. The difference between spatial/landscape drawing and inefficient mapping is the intention of the inefficient mapping to non-representationally orient aspects of phenomena across scales and registers, and for the mapping to perform a way-finding function – even if this functionality is targeted to very specific readers. The highly abstracted marks in inefficient mapping and the ways that inefficient mappings orient phenomena assert their difference to (abstracted) drawings of places, which are driven by other intentions and purposes such as extending “the field of drawing to include from the world around them ...the notion of an expanded field was used to describe work that

had dispensed with the object and took the form of alterations to a site.”¹⁵⁷ The intention of abstracted spatial/landscape drawing is focused on the act of drawing and the materials of drawing, and how these can be pushed to their conceptual limits. The exacting methodological protocols that restrict the drawing materials and acts in inefficient mapping, and its focus on orienting phenomena in relation to immanent and speculative theories, make it an entirely different activity.

This chapter addresses the particular practice of mapping inefficiently. Examples of mappings are included, and narrative accounts of their production help elucidate on details of the practice, and how they were directed by specific protocols. These maps are taken from a body of work using speculative theories to examine non/in/human urban citizenships (more on this work is found in Knight 2016; Knight 2019), therefore these mappings attune to particular aspects related to that project. The accounts are of mappings with a specific focus; they are not included to determine how all inefficient mapping is done but to offer prompts and ideas for further experimentation.

The chapter will first focus on attuning to phenomena, and how speculative and immanent theories help to focus that attuning in particular ways. Detailed descriptions of the mapping protocols will follow, including the example maps. The chapter will then briefly discuss the mapping practices of the Situationists to show how other mapping practices respond to the urban context. Finally, the chapter will discuss inefficient mapping in relation to the affects and politics of mapping place and phenomena.

The mappings follow methodological protocols to spark readings and recordings that are immersed and move along within phenomena. The protocols are established with specificity to the ideas and intentions of the project and act as a regulator for being in the place, for selecting what to map and how to record that selection. Although protocols can change, the markings that constitute the mappings are usually generated by looking up, observing, witnessing, and recording the movements and presences of the things around. These are inefficient mappings then, because they rely upon what is noticed and what is selected to map in situ.

¹⁵⁷ Kate Macfarlane and Katharine Stout, “Spatial Drawing.” In *The Drawing Book. A Survey of Drawing: The Primary Means of Expression*, ed Tania Kovats (London, UK: Black Dog Publishing, 2007), 23.

There is no prior video or photography capture. The eyes dart about and make mark of movements and details as they are noticed.

It might seem that inefficient mapping is a human-centric activity and that an observant flaneur walks around making aesthetic decisions about what to notice and draw. The close and thick relationship this mapping has with immanent and speculative theories however means that the mapping has a different intention based on different readings of phenomena and the activities within it. Manning's proposal that processual research-creation activity is not a distant observation but is actively forming new relational and existential configurations that are "transversal to the modes of operation active in the relational field. They are still an in-act"¹⁵⁸ artfully describes how methods and theories take effect together. Manning explains that research is about not being impartially removed from the liveliness of the world and deciding what to note but understanding that, whatever we do, we add to what is happening, we impact as apparatuses¹⁵⁹ and become part of phenomena. Also, we cannot halt the movements and interactions constantly forming to make a piece of data and we cannot decide on the nature of our impact because the world does not rotate around the axis of man or his vision scope. We cannot fit and order the complexity of the world into groupings. And we cannot think of the world as insignificant until we humans give it meaning. It is already actively alive and vibrant.

Methodologies that work through thick entanglements with immanent and speculative theories might instead attempt to attend and attune to the lively aspects, snippets, and registers that are occurring. Kathleen Stewart describes these aspects as regionality; some part that is made noticeable by its limit, that "has the character and texture of an edge fashioned into a background composition"¹⁶⁰ that comprizes phenomena. The lines and marks in the inefficient mappings are tracings of the edges generated by fleeting and shifting movements, of things overlaid in time and crossing over in space. The mappings become a composition of multiple edges as they appear on different visual and sensorial registers of the space. They are a noticing rather than an ordering, fixing, or validating of what is going on.

¹⁵⁸ Erin Manning, "Against Method." In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 55.

¹⁵⁹ See chapter 4: *Theoretical framework*, for a more detailed discussion on Barad's ideas of apparatus and phenomena.

¹⁶⁰ Kathleen Stewart, "Regionality." *The Geographical Review* 103, no. 2 (2013): 277, <https://www-jstor-org/stable/43915992>



Fig. 1 Inefficient mapping, urban play. Source: Linda Knight. Permission granted by Linda Knight

Figure one exemplifies how edges and regionalities are noted. This map was created as part of my project into in/non/human play in urban commonplaces. I visited a local reservoir that is also a water and nature park. Areas of the water were sectioned off for swimming, kayaking, and paddle boarding. Walking and cycling tracks hug the water's edge. The area is very popular for outdoor sports and recreation. I was not so interested in the activities of people however, but more focused on the play activities of inhuman and non-human visitors: insects, pollen, breezes, sunlight, dust particles, birds, insects, plants. Figure one is a series of maps that emerged as I attuned to the regionalities that became apparent through the edges which appeared as sunlight and dust, leaves, vegetation, stones, and dirt moved and played amongst each other in phenomena. As I walked some of the tracks, I looked for the shape of edges that came into sharp focus against the busyness of the space. Where I saw edges, I traced them onto the paper. I did not look at the paper as I did this. The mark was generated as a result of my eye and hand working together as closely as possible. Some of the edges that appeared included an insect zipping in front of leaves and bushes, the shapes of the sunlight

on doused branches, leaves, rocks, motes, and the edges made by breezes as they moved the arrangements of things, as dust and pollen went up my nose, as the sunlight hit my eyes in disorienting flashes. I did not manage to see everything that is occurring because my eyes were darting here and there, making quick marks and scratches with my pencil on a pad of tracing film as I walked.

The methodological protocol I followed was to walk while mapping, to hold the tracing pad flat against my body and to make marks without looking at the pad. I was to focus on the inhuman play in the space, and to map that as I walked. I made a number of different mappings and randomly layered them in this image (the importance of layering is addressed later in the chapter).

This description elucidates how regionality comes into view through a methodological protocol that enhances an affective and perceptual reading of phenomena. In my drawn noting of only some of the many edges there, I was not attempting a total or comprehensive survey but to capture a sensorial “quality of expression”¹⁶¹ of the place at a particular moment in ever-changing phenomena. Figure one observes and traces the affects of objects via a methodological protocol that conceptualizes phenomena as a complex arrangement of bodies and details in action. The affective, expressive, and vibrant play of matter brings detail sharply into focus, revealing regionalities and edges and pulling “hard matter into alignment with a composition”¹⁶² quivering with non/in/human animacies.

Povinelli (2011) sees how affect is a powerful force for attuning to the world in non-representational ways. Affect hums through the world but is difficult to isolate in specific ways or through specific acts. Affect activates inefficient mapping through the forces present in a place, in the occasion, in the event. Affect generatively sparks mapping. It is the sensation that prompts a mark or a turn of the head or a spasm in the wrist, a pressure in the pencil. It is in the spaces between moments, in the continuous sequences of energy or potentiality in phenomena, affording phenomena a “tactile compositionality of things”¹⁶³ with peaks and troughs of feeling and sensation. Phenomena become striated as affect pushes the compositionality of energy into what Stewart describes as “a state of emergent expressivity”¹⁶⁴. Affect

¹⁶¹ Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation.” *Cultural Studies - Critical Methodologies* 15, issue 2 (2015): 139, <https://doi-org/10.1177/1532708614562881>

¹⁶² Stewart, “Regionality,” 275.

¹⁶³ Ibid., 277.

¹⁶⁴ Ibid., 278.

helps reveal the topologies caused by lively, transmaterial edges that peak up and through the compositional registers of phenomena.

Inefficient mapping is a deeply attentive process. The mapping process can be slow or frenzied in the making of marks and scratches that visually notate by moving alongside these peaking movements in the space. As with other non-representational methodologies, inefficient mapping is concerned with disrupting the habits of collating aspects into over-coded schema by noticing the partialities of things that might be difficult to describe. It does this by elucidating on “the distributed agencies of what’s throwing together and falling apart”¹⁶⁵ across times and spaces, and by maintaining these distributed movements in the marks that are generated.

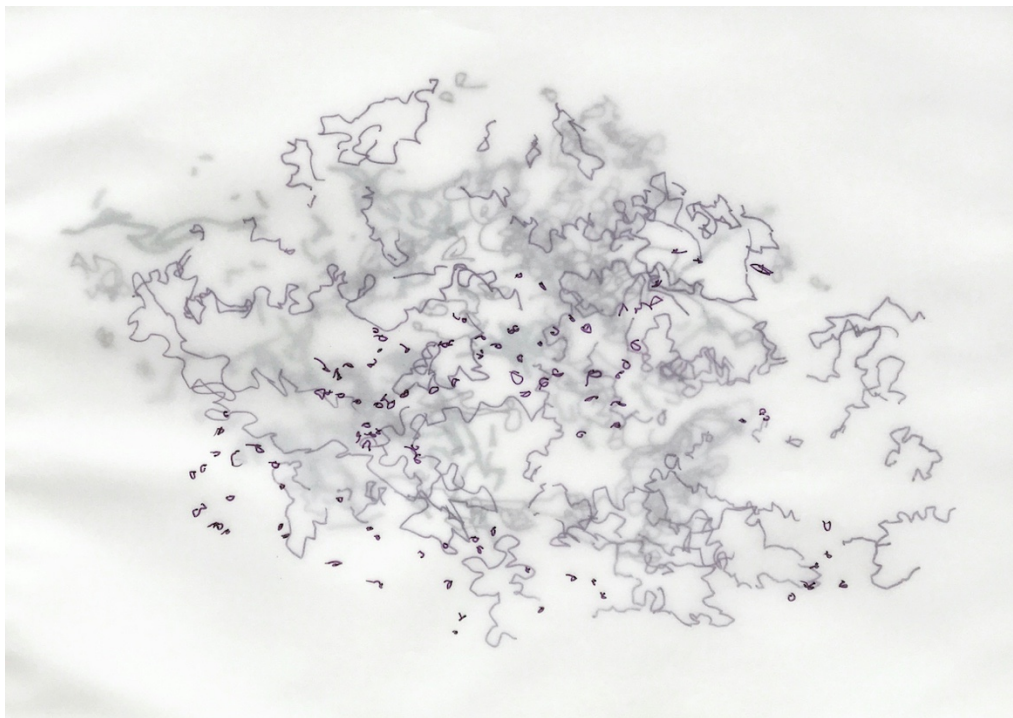


Fig 2. Inefficient mapping, urban water citizens. Source: Linda Knight. Permission granted by Linda Knight

Figure two shows a frenzied, partial mapping of inhuman urban water citizens. Water moved quickly across stones, concrete, rubbish, algae, oils, microbes, fish, and shells. A large river flows at different speeds as it deepens, peters out, hits obstacles, gets redistributed by the presence of boats and other objects moving

¹⁶⁵ Kathleen Stewart, “New England Red.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 21.

through it, and is pushed and shaped by the constructed banks and bridges that direct it through the city.

It is not only the water that is moving. Highlights and reflections continuously flicker across different surfaces of wet things as well as the water itself, and the bubbling and gushing flow of the water causes the flickers to change almost too quickly for the eye to see. Oils and other toxins create frothing scum that float toward the edges of things, and dirty bubbles appear and quickly pop. Rubbish that is snagged on broken things billow in and out like lung sacs and collections of things are hopelessly jammed into the crevices between river stones and chopped concrete.

I step gingerly across the slippery and slimy green surface at the water's edge, trying not to twist my ankle or dunk my feet in the water as I do the mapping. I use a fine line permanent marker so I am conscious that the quality of the marks I make will differ to those when I use pencils. I am mapping the small, incomplete details of some of the non/inhuman citizens in phenomena, I attempt to trace a portion of the boundary lines of some of the things as they appear. There is so much movement in everything. I have to look in all directions and draw quickly and without looking at the paper. I make my eyes and hand work as seamlessly as possible to try and capture the shapes of things because things are rapidly changing and disappearing.

As with figure one the methodological protocol I followed was to hold the tracing pad flat against my body and to make marks without looking at the pad. I was to focus on inhuman urban citizens. Again, I made a number of different mappings of partial edges and randomly layered them in this image.

The mappings are inefficient because they capture only a portion of the lively movements occurring in phenomena. The *inefficient* descriptor prefixes this particular approach to mapping to also make clear the politics of inscription, and what assumptions are made around those inscriptions. The associative meanings of inefficiency include powerlessness, inability, nominality; terms that describe the shortcomings of a process to capture all there is. The inefficient descriptor also critiques factuality and the ability of a map to be a representation of a place. Including the inefficient prefix is a declaration and a reminder that mapping always involves (societal and cultural) exclusions and erasures, and that colonial mapping has ignorantly disregarded existing land use practices, making select readings that uphold colonial/colonising interests. The inefficient prefix also refers to partiality and

is a declaration that maps cannot include everything but only aspects, such as the affects and diverse happenings that take place through the interactions and interactivities of matters, times, movements, spaces, and scales. The frenzied nature of the mapping in Figure two exemplifies how the mappings are inefficient because they are real-time attunements, and this forces a selective notating of the full event. Selections arise through the affective impact of aspects of that full event as they are encountered. As Stewart articulates, the consequence of affective attuning via a method of “trying to follow where things (might) go”¹⁶⁶ is the forming of a processual, albeit inefficient, habit of reading space; a methodological protocol for reading phenomena. The inefficient mappings in Figure two mark the unpredictable configurations of things that come momentarily into relation across phenomena. As I made the mappings I noted and visualized in a partial way, aspects of the configurations that became visible as my eyes darted here and there.

The visual noting of unpredictability is a mode by which inefficient mapping methodologically activates immanent and speculative theories, emphasizing aspects of registers and regionalities of phenomena. Inefficient maps are immersive recordings of “the production of movement itself”¹⁶⁷ as it occurs; a durational account moving along with the changes and activities taking place. The marks and scratches that appear on the paper are brought about through this tuning and contrasting. The mappings are a speculative engagement, “not at the level of a human account abstracted from the event, but within the field of relation occasioned by the experience itself”¹⁶⁸.

The descriptions provided in Figures one and two might not yet have gone far enough in explaining how to *do* inefficient mapping, so it is useful here to offer detailed and illustrated descriptions of some of the methodological protocols that can be used. These are organized under sub-headings to assist focused experimentation.

Materials

Maps can be made using different material combinations and different forms of technology.

¹⁶⁶ Ibid., 21.

¹⁶⁷ Manning, *Relationscapes*, 26.

¹⁶⁸ Manning, “Against Method,” 60.



Fig 3. Materials - 1. Source: Linda Knight. Permission granted by Linda Knight



Fig 4. Materials - 2. Source: Linda Knight. Permission granted by Linda Knight



Fig 5. Materials - 3. Source: Linda Knight. Permission granted by Linda Knight



Fig 6. Materials - 4. Source: Linda Knight. Permission granted by Linda Knight

Figure three was created using a combination of gestural pencil marks onto tracing film, placed over a black and white photograph. Each layer is an account of the same location, and each record in/nonhuman citizens in the urban context. The layering of the abstract drawn pencil marks over a photograph, taken at the same time as the mapping shows how different visualisation modes can be collated if desired. In this example the layering accentuates how different imagery records

phenomena, and how they are both partial, even though photography is commonly regarded as capturing a comprehensive record of the world (Barthes 1977).

Figure four is a single layer image created using pencil in a cartridge paper sketchbook and Figure five is a digital mapping of human hands as they used virtual reality equipment. This mapping was created on an iPad using an Apple Pencil and the Sketches app by Tayasui¹⁶⁹. These examples show how maps are not restricted by material or technology. The materials and technologies that are used might alter the appearance of the maps, but in each case the examples included here are effectively recording aspects of phenomena. However, materials and technologies have material agency. For example, maps can be different sizes. I have created maps as small as 10cm x 8cm (Figure four), and as large as 60cm x 150cm (Figure six). In each instance the dimensions and material quality of the mapping surface determines how the body accommodates different materials within space, how the durability and fragility of the surface is negotiated and honored by the body and the surfaces where the paper is placed, and how the mark-making tools negotiate that durability and fragility.

Other aspects of phenomena have material impact; the atmospheric impact of different weather conditions, the light quality, the wind all generate their own contribution to the mapping, affecting the marks made, leaving their own imprints and marks, determining the content of the maps in various ways. As an example, the map in Figure five was created indoors in an air-conditioned room with electric lighting. I sat on a chair, observing the hand movements of a person as they wore and used a virtual reality headset and gloves. The room was quiet, and my view was not interrupted for the duration of the mapping exercise. By contrast, the map in Figure six was created outside in the middle of a windy rainstorm. I sat on wet grass and draped the very large paper over my legs and onto the grass either side of me. I wore a peaked cap to keep the raindrops out of my eyes. I mapped the playful behavior of wind and palm trees, as I tried to avoid pushing the graphite stick and charcoal stick through the soggy paper. The wind caused the paper to whip up around me, and I had to work quickly before the rain completely ripped the paper apart. In each of these examples the energies and materialities of phenomena add to

¹⁶⁹ Tayasui <https://tayasui.com/about.html>

the mapping equipment and the mapmaker, leaving imprints and traces in and on the maps in physical and in metaphysical ways.

Mark-making

Mark-making is a vital aspect of inefficient mapping because the marks convey the traces of things noticed in the phenomena. To echo the discussion above, the mark-making produced in inefficient mapping emerge through the modes of different drawing practices (hand-rendered, object-rendered, digitally-rendered being some examples), however they are not fine art drawings because the intentions and contexts for making fine art drawings differ to the intentions and contexts for mapping inefficiently. The scope of marks that are possible are impacted on by tools and surfaces as well as the material and affective conditions of the event as described above in *Materials*. Other factors also increase the range of marks possible. The amount of pressure applied can increase the breadth and/or density of a mark. A pencil or charcoal stick can produce many different grades of thickness and density depending upon the pressure exerted by a combination of muscles in the hand and arm. Density and pressure adjustments in a digital pencil are often achieved through increased pressure combined with adjusted speed. The direction of the gestural mark, such as exerting pressure in the away stroke, or in the return stroke also produces a range of effects. Tool grip generates different marks because each grip, prompted by signal sequences between the brain, eye, and muscles make the tools work differently. All of the non-digital examples included in this chapter were created by holding the drawing tools in a fist grip. The fist grip is highly effective for inefficient mapping because the combined movements of the wrist, arm and shoulder muscles make marks that are completely unlike the habitual and familiar marks we make when writing or drawing conventionally. The muscles, tools, and eyes have to work hard to remain in communication while mapping, and this maintains a connection and presence in and with the happenings of phenomena. The fist grip also enables mapping without looking, so the attention is turned toward the energies and events going on all around. Digital mappings included here were created using the tripod grip (the digital pencil is held by the thumb and first two fingers). Like the fist grip, the tripod grip is an uncommon grip so reduces the probability of making tracings disconnected from what is noted and experienced in phenomena. What this means is the fist grip and tripod grip enact different

relationalities between bodies and materials during an act of drawing, and that this relationality remains present because the body and drawing materials can't fall into their usual habitual interactions. When we use a pen to write a note, we often do so through those habits of use. We write in our usual way, consequently our focus is on the words and message of the note, not on how our hand is using the pen. Using different grips reveals and maintains that relationality, and also our presence on, and an active/affective part of, phenomena. As an example, the uncommon grip enables tools and muscles work in particular ways to activate a form of mark-making by quivering. Mapping in situ while not looking at the surface insists on a highly attuned connection in and with the space. The tools for mapping, including a marking tool and a surface, are felt rather than seen. They are not static but quiver with and against the body, and against sun, wind, temperature, sweat. They are in the act of mapping. They are materially effecting what Vannini describes as “the body’s kinesthetic and intuitive power to produce certain effects, whether expected or unexpected, intended or unintended”¹⁷⁰ of the movements, energies, and affects present. Whether walking the terrain or standing still, inefficiently mapping duration and movement is an exercise in how visually to convey the vibrancy and animacies (Springgay and Truman 2016) of matter that are moving at different scales, even when they are seemingly inert.

Layering

An important aspect of the inefficient mapping is to layer the maps, either digitally through a drawing app or graphic design program, or materially by drawing the maps on tracing film and physically stacking them. Layering can occur *in situ* while mappings are being produced, or sometime after. Examples of layering are seen in Figures one to six. In these examples the paper-based maps are layered on a light box and photographed. The maps can be layered in different random configurations; i.e., maps can be organized in layers by date or location, or maps created at different times and of different things can also be layered together. The same collection of maps can also be layered in different orders to emphasize different aspects and marks.

¹⁷⁰ Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*. (New York: Routledge, 2015a), 8.

The paper-based maps are created on tracing film because its translucency allows for the slow disappearance of marks and details as they are glimpsed through the layers. The higher the number of layers the more the lower maps disappear into the murk. The effect of this disappearing is a visualization of the histories, affects, and non-representational qualities of a place, and how these energetically simmer without being fully articulated. Non-representational aspects can ignite an affective feeling or a sense of a place, so the layering is a methodological protocol that adds durationality to the spatial focus of each mapping, visualising how phenomena emerge through regionalities and affective registers. The layering doesn't follow a single rule; as mentioned above, the mappings can be layered differently so the particularity of each of those arrangements is also a methodological protocol for visualizing the rich particularity of different movements and sequences in phenomena, and how ideas about phenomena are informed by immanent and speculative theories. Layering also conveys how body movements and quivers are not representationally obvious in the maps but are imperceptibly contained in the energized marks and recordings. The maps are created *in situ* but do not schematically represent a place; they are speculatively and imminently the place, although they exist as both and neither.

Finally, a major ethico-political rationale for inefficient mapping is to expose the in/non/human struggles for animation, liberation, mobility, and agency. This is a big task for mapping, and might be the point at which the reader asks, *What can these inefficient drawings possibly do about such socio-political issues?* Puig de la Bellacasa suggests that investigative practices are ethically important because they can be a “sensorial strategy for perceiving the less noticeable politics in ordinary transformations of experience missed by ‘optic’ objectivist representation”¹⁷². Inefficient mapping is driven to physically, gesturally and performatively tune in to more than human worlds by attempting to move with the minor movements and easily missed details of phenomena. The scratches and marks of the maps ethically connect with the world by enacting a “sharply tuned spatial logic whose muscled core is an affective attachment to place”¹⁷³ through the attention to gestural tracings of movements, edges, and affects across scales and registers. The maps are

¹⁷² Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds*. (Minneapolis: University of Minnesota Press, 2017), 96.

¹⁷³ Stewart, “Regionality,” 276.

momentary accounts of the affects and politics of places shaped by colonisation and occupation. It is vital to walk within the place, to notice, to witness the many footprints that are present and how subjectivity affects and influences relationships to place and how we might map and read a place. Inefficient mapping attends to wider ethical and political constituencies by seeking out things not normatively on the radar. Inefficient mapping is methodically designed to “unsettle the systematicity of procedure”¹⁷⁴ and the default use of conventional methodologies, through acts and practices that question the assertions, assumptions and expectations of certain types of information gathering to be truthful and impartial.

¹⁷⁴ Vannini, *Non-Representational Methodologies*, 15.

Methods and data

The chaosgraphs are the documentary outcome of the inefficient mapping methodological protocol, and this chaosgraphic documentation is the visual archive of the mapping events. The archives produced from research activity are often considered to contain the data of the project so this chapter considers the ways that inefficient mapping can produce data, and the chapter addresses the types of data that inefficient mapping can produce within discussion into wider discourses of research norms and expectations. The chapter advocates that data produced by inefficient mapping can still *do* though, it can be interpreted, sorted, organized, managed effectively and can have impact on knowledge and ideas.

The wealth of recent, excellent methodology scholarship (Andrews 2012; Denzin 2013; Hofsess and Sonenberg 2013; Manning 2015; St.Pierre 2014; Springgay and Truman 2017; Springgay and Zawliwska 2015; Tuck and McKenzie 2015, 2015a; Vannini 2015, 2015a, 2015b) considers what *data* has come to mean in contemporary research, and informs the following discussion into new possibilities for conceptualising methods and data. My position on the notion of validation and the truth of data is informed by this scholarship. The chapter argues that inefficient mapping methodologically reads the world and produces forms of data that extends on knowledge and changes our thinking. Particularly, chapter 8: *Ethical wayfinding* discusses how inefficient mapping is influenced and pays homage to the long and continued non-representational wayfinding and mapping embedded in Aboriginal art and culture, as well as the extensive impact Indigenous theories and philosophies have on intellectual thought.

Inefficient mapping visually challenges research habits of conflating method and data. This book has carefully described how methodologies, protocols and methods that are closely entwined with immanent and speculative theories diversify processual possibilities to conduct research-based activity. Inefficient mapping is one of those activities. As previously mentioned in chapter 4: *Theoretical framework*, data analysis is a different, analytical aspect of the research project and should not be confused with methods and methodologies. Nevertheless, it is important to discuss the impact of new research ontologies on the ways research material is considered and how it might contribute to new knowledge and understandings.

Scholarship is shifting its visions of the world thanks to a theoretical turn to immanent and speculative theories that critique human exceptionalism, the dismantling of human/nature binaries, and propositions about the agency of matter. However, there has been some lag in a respective honing of methodologies. As Springgay and Truman declare, methodologies have been less experimental because it is difficult to shift away from standard expectations of the “research design, methods, procedure, data, and analysis”¹⁷⁵ even in projects that are seeing and doing things differently. Erin Manning’s reimagination of the investigative project has significantly influenced recent thinking about the protocols and norms for applying methods and generating/collecting data. Manning considers methodological expectations such as routines, repeatable/repeated record making, notation, and accounting and reconceptualizes processual and data possibilities through research-creation, a descriptor that “hesitantly acknowledges that normative modes of inquiry and containment often are incapable of assessing”¹⁷⁶ the complexity of the moving, interrelational events that constitute the world. Manning articulates how research-creation acts methodologically and datalogically because it “proposes new forms of knowledge, many of which are not intelligible within current understandings of what knowledge might look like”¹⁷⁷.

In other words, conventional methods often work at odds with projects that attend to immanence and speculation because such methods cleave and cut into movement to extract data, which is thus always in stasis, historicized, and representational. Research-creation is an experiment into how research takes place and how the intentions of research, which is to capture, and measure might be expanded. Research-creation is a “mode of activity that is at its most interesting when it is constitutive of new processes”¹⁷⁸, this includes the concepts of what research might look like as well as new methodological and datalogical possibilities. Research-creation treats method as a neutral, mechanical procedure and an ongoing processual activity that moves along flexibly, adjusting through apparatus (the consequences, reasons, values and meanings) that add to the movements of/in

¹⁷⁵ Stephanie Springgay and Sarah E. Truman, “On the Need for Methods Beyond Proceduralism: Speculative Middles, (In)tensions, and Response-ability in Research.” *Qualitative Inquiry* 24, issue 3 (2017): 203. <https://doi-org/10.1177/1077800417704464>

¹⁷⁶ Erin Manning, “Against Method.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 53.

¹⁷⁷ Manning, “Against Method,” 53.

¹⁷⁸ *Ibid.*, 54.

the relationscape. To revisit the discussion in chapter 4: *Theoretical framework*; apparatus become a part of the relationscape through configuring, reconfiguring, and perpetuating the research act/s as a “property of the phenomenon”¹⁷⁹. Research-creation activates nuanced methodological and datalogical processes intertwined with theories that move and shift with the project. Collectively research-creation practices maintain an ethical closeness to what Springgay and Truman identify as the “particular (in)tensions”¹⁸⁰ of the research project, within their respective epistemological and ontological orientations.

Methodological innovations such as research-creation open up intellectual spaces to rethink conceptions and understandings of what method and data can be and do. Data might change from being inert information that is later instrumentalized (Springgay and Zaliwska 2015) and given meaning, if ontological conceptions of practice are rethought. For example, an instrumentalist use of maps helped Andrews overcome difficulties with participant observation, helped her refine post-field ethnographic analysis, and for “understanding my field notes”¹⁸¹. Likewise, the contents of inefficient maps can be put to work instrumentally to help interpret and refine other types of data, the technique is flexible enough to have different forms of functionality such as if a researcher were to analyse them for that purpose. For example, the collection of inefficient mappings and chaosgraphs of non/in/human urban citizens in Figures 1 and 2 can be instrumentally helpful in establishing locational information as demonstrated in Figure 3.

¹⁷⁹ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. (Durham: Duke University Press, 2007), 139.

¹⁸⁰ Springgay and Truman, “Beyond Proceduralism,” 203.

¹⁸¹ Hazel Andrews, “Mapping My Way: Map-Making and Analysis in Participant Observation.” In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 216.



Fig 1. Collection - 1. Source: Linda Knight. Permission granted by Linda Knight

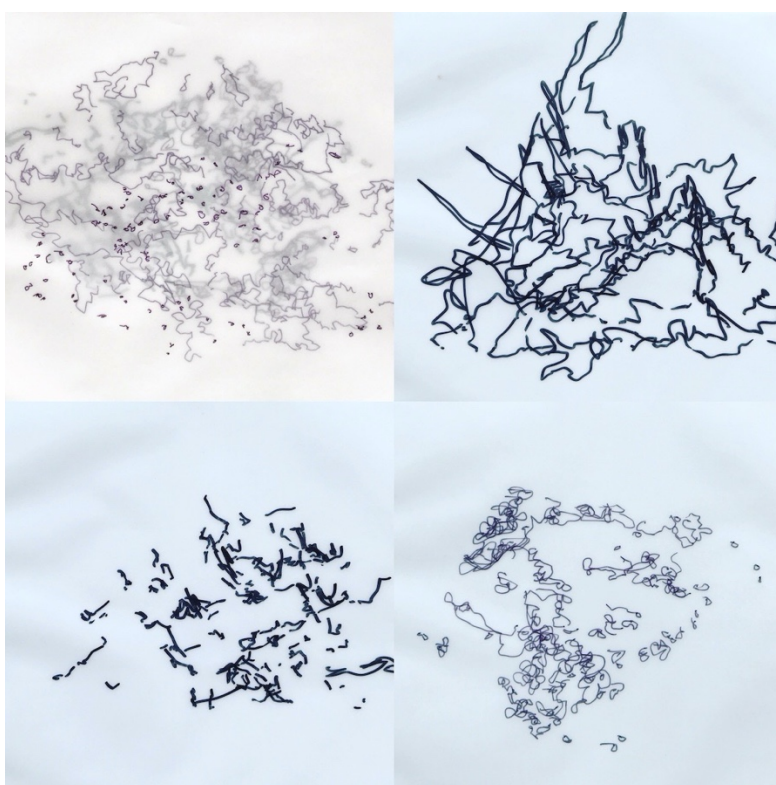


Fig 2. Collection - 2. Source: Linda Knight. Permission granted by Linda Knight



Fig 3. Locations where inefficient mappings took place. Source: <https://openstreetmap.org> Permission: Copyright OpenStreetMap and contributors, under an open license.

The locational plotting of where each of the mappings in the chaosgraphs took place on a conventional map might begin to generate information on citizenship geographies in the urban context. Using different forms of data to build rich geographic and spatial knowledge is not new, for example the Wemindji Cree peoples use walking and stories to maintain geospatial information of their ancestral lands. The Cree's annual *Kaachewaapechuu* (Long Walk) is an intergenerational methodologic practice for sharing locational stories told by elders in order to "smooth boundaries inscribed by modernity ...and corporate mapping software"¹⁸² that defines the land in specific ways. An instrumental reading of the mappings and chaosgraphs might be of benefit to some projects however it doesn't push inefficient mapping to its full datalogical potential because the maps are being read via interpretations that regard data as "existing phenomena"¹⁸³. Although being able to instrumentalize inefficient mapping with other forms of data brings a certain level of functionality an instrumental use of inefficient mapping would be a purely schematic analysis of the

¹⁸² Gwilym Lucas Eades, *Maps and Memes: Redrawing Culture, Place, and Identity in Indigenous Communities*. (Montreal: McGill-Queen's University Press, 2015), 75.

¹⁸³ Springgay and Truman, "Beyond Proceduralism," 206.

chaosgraphs, positioning them akin to a glorious diagram to aid the translation of this other data. Inefficient mapping is put to its full datalogical use and value in projects that want to generate chaosgraphic data that interrogate data validities and conservatisms and that are committed to asking “How could we (re)think data as messy, unsteady, and shifting? What would a fluid, complex, or unstable rendering of data look like?”¹⁸⁴. In the case of my research project into posthuman urban citizens the data featured in figures 1 and 2 subvert the semiotics and schematics of research information and challenge the idea that data must be a concrete representation of what was observed. The data created during inefficient mapping are tentative, irregular, not attempting to concretely represent but to remain sensitive to the spatialities and localities of things in movement and in relation. Data is generated from marks that plot the whereabouts of components in phenomena. This data might seem disorganized or opaque however the corporeal elements of production (being in a location, mapping while walking, closely observing, trying to notice many things, being affectively immersed in phenomena) mean that the marks in the mappings create data from imprints, and these imprints linger and help recall details. In this way the chaosgraphs that the mappings produce, are highly readable, meaningful, informative, useful to the creator. They are certainly accessed differently by others but not in totally unrelated ways. Other readings of the chaosgraphs bring unpredictable interpretations, however this is also the case in other data sources such as children’s drawings, interview transcripts, raw numeric data, big data number banks etc.

Denzin’s question of whether data is dead thanks to the rise in post- theories and critique, or whether it persists thanks to the practices of “science (and evidence) based research initiatives” that “keep the word in the limelight”¹⁸⁵ shows that we are living in a long-range onto-epistemological knowledge transition. The datalogic information contained in the inefficient mapping chaosgraphs provide a glimpse of a third possibility: inefficient mapping as a contributor to a growing body of experimental methodologies that treat data as being capable of holding theoretical concepts within and maintaining the presence of theories through the whole research sequence; of thinking about data as being immanent/ conveying immanence;

¹⁸⁴ Brooke A. Hofsess and Jennifer L. Sonenberg, “Enter: Ho/rhizoanalysis.” *Cultural Studies - Critical Methodologies* 13, vol. 4 (2013): 300, <https://doi-org/10.1177/1532708613487877>

¹⁸⁵ Norman K. Denzin, “The Death of Data?” *Cultural Studies - Critical Methodologies* 13, vol. 4 (2013): 353, <https://doi-org/10.1177/1532708613487882>

rejecting the notion of impartial, objective data in favor of data that politically questions the privileges embedded in research; and producing data that resists representational, schematic readings of the world. The data in this third possibility might require different tactics to read and sort, nevertheless it is as effective as other data in that it can offer new understandings and knowledge of the world. Tuck and McKenzie (2015a) suggest how methods such as walks, mental maps and discussions, video and photography might reveal non-representational aspects including memories, feelings, appearance, sounds, smells about locations and domains as well as things. Likewise, inefficient mapping is a non-representational protocol that uses graphic notation to create chaosgraphic accounts that “rupture, unsettle, animate, and reverberate”¹⁸⁶ the affects, registers and regionalities of events and sites. Just as these other non-representational methods have developed and refined over time, so inefficient mapping has the potential to continue to evolve. In relation to the practical aspects of inefficient mapping, the scratches and marks of the early examples featured throughout this book have the potential to develop further through the use of different technologies, the use of materials other than pens, pencils and paper, by expanding the time-scales of a mapping (for example, producing one mapping continuously over a week or longer), by expanding the scope of observation (by inefficiently mapping the things seen at microscopic scales), by expanding the scope of who/what is mapping (such as collaborations between non/in/humans). Non-representational methodical protocols “influence the research process, the very value of empirical research, the nature of data, the political value of evidence, the methods and modes of research, the very notion of method, and the styles, genres, and media of research”¹⁸⁷; in relation to the conceptual aspects of inefficient mapping, over time inefficient mapping can be taken up by diverse researchers to enable the methodologic protocol to more explicitly tackle the politics of research processes such as the ways that immanent and speculative methods and theories might intersect. Additionally, the scopes of focus will also change; throughout this book I have used my research projects into posthuman readings of urban play, and urban citizenships as examples to talk about the details of inefficient mapping and what I particularly take notice of and map in

¹⁸⁶ Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*. (New York: Routledge, 2015a), 5.

¹⁸⁷ Vannini, *Non-Representational Methodologies*, 2.

phenomena. The use of inefficient mapping by others and in projects with different aims and foci will mean that what is noticed and what is mapped will be very different. The discussions throughout this book have proposed how inefficient mapping innovates on research methods by experimenting with non-representational wayfinding and with site-based observation that are “speculative and event oriented ...not intended as a set of directions nor rules that contain and control movement”¹⁸⁸ but that attune to the complexities of energies across times, tenses and domains. Inefficient maps ethically way-find through gesturally marking the movements and edges of non-representational aspects including memories, affects, histories, power, colonialism, exclusions. How others use the methodological protocol will extend on these processes via projects that take up speculative and immanent theories in other ways, and that are concerned with other non-representational aspects of the world. Such examples might include mapping the body positions people take when looking at art in a gallery, mapping the edges of rubbish in play areas across different demographic zones of a city, mapping the movements of hands and feet of residents in aged care. The mapping examples that appear through the book, and the potential other projects yet to come will produce inefficient mapping data that commits to advancing methodologies which politically “resist ontological analyses that ...focus at the micro yet universal level, while ignoring the situated realities of historical and spatial sedimentations of power”¹⁸⁹. The methodology scholars included in this chapter articulate that contemporary research maintains its conservatism. New research ontologies have opportunity to develop methodologies that have a different relationality to the research project, and research projects can disrupt “the pre-supposition of methods [and] a reliance on data modelled on knowability and visibility”¹⁹⁰. Advanced modes for researching that think-with and act-with speculative theories “will likely create new forms of knowledge that may have no means of evaluation within current disciplinary models.”¹⁹¹. New research ontologies advance creative research architectures over conventional stratifications that tier theory, method, data, and analysis. New research architectures are interrelational, spongy, permeable, blended, soaked through. Not so much tiers but pockets and pools. Inefficient mapping chaosgraphs produce data that is honorable to immanent,

¹⁸⁸ Springgay and Truman, “Beyond Proceduralism,” 204.

¹⁸⁹ Tuck and McKenzie, *Place in Research*, 36.

¹⁹⁰ Springgay and Truman, “Beyond Proceduralism,” 203.

¹⁹¹ Manning, “Against Method,” 54.

speculative and critical theories that resist disguising inequities and power systems. The oblique nature and appearance of inefficient mapping chaosgraphic data is a resistance tactic that acknowledges “data and evidence are never morally or ethically neutral”¹⁹² and the ways in which easily accessible data produces specific forms of information that uphold settler colonial power dynamics, privileges and hierarchies.

¹⁹² Denzin, “The Death of Data?,” 354.

Ethical wayfinding

Inefficient mapping pays close attention to distributed energies and affects, tuning in to “the strange logic of turbulence”¹⁹³ of things in phenomena. This is an important intention. As discussed in chapter 6: *Inefficient mapping*, recognizing that this mapping is inefficient not only connects the methodologic protocol to immanent and speculative theories, it is a conscious effort to develop a critical research practice built on resistance and an ethics of care. This chapter begins by examining notions of care and how practices of traversing the land must include an ethics of care for the histories and politics of a place. The chapter then discusses how this traversing produces diverse wayfinding practices and documents, and that wayfaring founded on an ethics of care generate wayfinding documents and practices that differ to colonial practices and the cartographic maps produced. The chapter then explores how cultural relations with the land engage different forms of wayfinding, and the navigational skills of a nomadic Australian Aboriginal community provides the focus for this discussion. The chapter concludes with an explanation of how non-dominant navigational practices wayfind through phenomena and how this informs and inspires inefficient mapping, and the particular ways inefficient mapping aids wayfinding.

Puig de la Bellacasa (2017) articulates that an ethics of caring is not about perpetuating “normative moral obligations”¹⁹⁴ but about the efforts of thinking carefully about “knowing and thinking with more than human worlds”¹⁹⁵. The ethics of caring is a political gesture; not necessarily bound up in morals but in techniques and technologies and practices that are perhaps prompted by and constructed through those politics. The practices of inscribing that inefficient mapping prompt are a political caring because the mappings aim to facilitate an ethical wayfinding that is immersed in the “collective nature of affective life”¹⁹⁶. The act of mapping inefficiently takes place with and on geographies, places, spaces, surfaces, understanding that things are moving in and out of them while we are in that space and while we are mapping what we are noticing. The discussion in chapter 5: *Experimental methods*

¹⁹³ Jane Bennett, *Vibrant Matter: A Political Ecology of Things*. (Durham: Duke University Press, 2010), xi.

¹⁹⁴ Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds*. (Minneapolis: University of Minnesota Press, 2017), 6.

¹⁹⁵ *Ibid.*, 12.

¹⁹⁶ Ben Anderson and James Ash, “Atmospheric Methods.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 34.

touched on the ways that inefficient mapping prompts an ethical and caring immersion in space, because it critiques tendencies for reading place through “dominant values”¹⁹⁷ which centralize particular subjects and politics. Atkinson-Graham et al propose that care should be used as “an analytic or provocation, more than a predetermined set of affective practices”¹⁹⁸. This call for a decentralized methodology is echoed by Puig de la Bellacasa because immersive (and in the case of inefficient mapping; performative, corporeal, moving, creative) processes enhance “relations with objects, things, and other than human animals, organisms, and forms as political in their very ontology”¹⁹⁹ rather than the world operating as a neutral backdrop to human life. Methodologically, what it is to ethically care is to foreground how processes such as mapping can disrupt common theorisations about wayfinding which position humans navigating across land and being able to do this without treating it as more than a backdrop. Wayfinding/mapping within an ethics of care raises the presence of different agencies and things and attunes to the vibrancy of phenomena. Ethically wayfinding can also disrupt the assumptive agencies ascribed to things in the backdrop: trees, rocks, histories, with perhaps common beliefs that trees can’t feel, rocks don’t need considering, histories are irrelevant. Such things can be incredibly important in wayfinding practices that are immersed in the politics and ethics of care. For example Haudenosaunee feminist scholar Mishuana Goeman researches how the practices of land-based narratives by Indigenous writers establishes records of place replete with its histories, and this is a vital wayfinding practice because “maintaining these spatial relationships is one of the most important components of identity”²⁰⁰ for First Nations, as well as global Indigenous communities. Stephanie Springgay and Sarah E. Truman form WalkingLab, a research-based art project that undertakes walks as a propositional practice for generating “new modes of relating”²⁰¹ with the world. In *Stone Walks* Springgay and Truman walked to, between, and among rocks

¹⁹⁷ Puig de la Bellacasa, *Matters of Care*, 10.

¹⁹⁸ Melissa Atkinson-Graham, Martha Kenney, Kelly Ladd, Cameron Michael Murray, and Emily Astra-Jean Simmonds. 2015. “Care in Context: Becoming an STS Researcher.” *Social Studies of Science* 45, no. 5 (2015): 739, <https://doi.org/10.1177/0306312715600277>

¹⁹⁹ Puig de la Bellacasa, *Matters of Care*, 16.

²⁰⁰ Mishuana Goeman, “From Place to Territories and Back Again: Centering Storied Land in the Discussion of Indigenous Nation-building.” *International Journal of Critical Indigenous Studies* 1, no. 1 (2008a): 24. <https://doi.org/10.5204/ijcis.v1i1.20>

²⁰¹ Stephanie Springgay and Sarah E. Truman “*Stone Walks*: Inhuman Animacies and Queer Archives of Feeling.” *Discourse: Studies in the Cultural Politics of Education* 38, issue 6 (2016): 851. <https://doi.org/10.1080/01596306.2016.1226777>

as a way of interrogating the usual ways rocks are positioned. Springgay and Truman consider instead the inhuman animacy of rocks and how this inhuman animacy helps us to “learn *with* the world rather than about it”²⁰². In these wayfinding examples the politics of human exceptionalism, race, feminism, colonisation, industrialisation, capitalism become affective registers (Stewart 2013) through which immanent and speculative theories are interpreted, and how phenomena are read and mapped.

Much contemporary feminist scholarship resists the tendency towards using apolitical research practices that perpetuate settler colonial privilege (Ahmed 2013; Alaimo 2016; Puig de la Bellacasa 2017; Sheller 2015; Springgay and Truman 2017; Tuck and McKenzie 2015a; Yusoff 2013). Preferences are now for processes that navigate through the thick of things and committed to an “ethics that is accountable to a material world”²⁰³. The move by feminist research towards accounting marginal non/in/human “histories as much as futures”²⁰⁴ creates a politicized, alternate genealogy of the world through networks of connectivity and interrelationality across histories, scales, domains, registers and materialities. Further, the locational focus of this feminist ethics of care expands outwards to include things that commonly evade our attention or vision. This means, that “as a transformative ethos, caring is a living technology with vital material implications”²⁰⁵. Similarly, inefficient mapping activates a transformative ethics through a technologic, speculative and immanent exploration of the “implicit effects that encounters between human and non-human bodies can generate”²⁰⁶ in spaces and sites. It is a wayfinding practice that disrupts the normalized moralities and ethics embedded in rationalist and religious thought, because, like other counter-mapping practices and methodologies it works to an “imprecise science concerned more with hope for politico-epistemic renewal than validity”²⁰⁷.

²⁰² Springgay and Truman “*Stone Walks*,” 862.

²⁰³ Stephanie Springgay and Sarah E. Truman, “On the Need for Methods Beyond Proceduralism: Speculative Middles, (In)tensions, and Response-ability in Research.” *Qualitative Inquiry* 24, issue 3 (2017): 206. <https://doi-org/10.1177/1077800417704464>

²⁰⁴ Mimi Sheller, “Vital Methodologies: Live Methods, Mobile Art, and Research-Creation.” In *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 141.

²⁰⁵ *Ibid.*, 67.

²⁰⁶ Anderson and Ash, “Atmospheric Methods,” 34.

²⁰⁷ Phillip Vannini, *Non-Representational Methodologies: Re-Envisioning Research*. (New York: Routledge, 2015a), 3.

What this book proposes is critically and theoretically informed methods should ethically expose the detailed extent of ongoing relationalities in the world. The above projects by Goeman, and by Springgay and Truman exemplify how feminist scholarship is thinking differently about the ethics of encounter between aspects, agencies, and entities and that alongside new ontological advances must emerge new modes for concern and realisation that are methodological, and also political. What these projects show is that wayfinding through spaces and scripting the parts that we happen to notice emphasizes our subjectivity and politics, and that we research through affective and relational ethics. Inefficient mapping is not just a human wandering about in spaces and taking notice of things to draw them. As discussed in chapter 2: *Maps and mapping*, Inefficient mapping thinks differently about the ethics of the encounter because it has a wayfinding intention that takes the flaw of being human, of being the colonizer or colonized, that has fenced off, stolen, fought for, hunted on, farmed, listened to, birthed on, hacked up, planted into these spaces and keeping that central²⁰⁸ (Eades 2012) during the process of navigating those spaces. Foregrounding a political ethics means that Inefficient mappings do not use conventional navigational wayfinding tactics, even though they are non-representational wayfinding documents for the cartographer/researcher. Because the mappings work from a speculative, more-than-human ontological position that makes a particular commitment (Puig de la Bellacasa 2017) to pausing in place to stop and notice things, to take time and to activate theories conceptually and practically, they contain details that have ethical and affective resonance and that foster familiarity and connectivity to meaningful areas and aspects of the place. This affective, immanent reading generates ethical locational routes through and across place to generate mappings that have a countering wayfinding capacity.

The pathways and lineages through these mappings seek out the alternate genealogies that subvert common histories that have been told through a privileged/white/masculine narrator. The inefficient mappings effectively form connection points across “the multiple agencies that make more than human relations”²⁰⁹ in the multitudinous activities occurring in phenomena.

²⁰⁸ See “Canada, Cartography, and Indigenous Peoples” in Gwilym Lucas Eades *Maps and Memes* (Montreal: McGill-Queen’s University Press, 2015), 78-95, for a particularly detailed discussion into the ways that non-indigenous and Indigenous cartographers produce counter-maps.

²⁰⁹ Puig de la Bellacasa, *Matters of Care*, 129.

Inefficient mapping should therefore be understood as a cartography rather than a conventional map. Thinking of inefficient mapping as a cartographic practice moves away from a focus on the production of the object (map) to open up critical thinking about the ways land and space become figuratively, literally, and physically recorded and shaped for/by capital, manufacture, development, and geo-corporatisation. Inefficient mapping is a theorized cartography concerned with ethically wayfinding through the alternate genealogies of sites and places. This means not trying to solve the unsightly qualities of a site/event, not trying to smooth over or selectively map the nice things. It means ethically being *there*, wayfinding through all of it including the unsightly, the disagreeable, the minor, the still, the small. Chapter 5: *Experimental methods* explains how inefficient mapping non-representationally orients **to the politics, histories, cultures, events, abandonments, scarring, reclaiming, of a** space. Figure 1 provides an example of how histories and counter-histories can be attended to, via a mapping of the Immigration Museum in Melbourne, Australia. It is a Saturday and the Museum is full of people attending a whole-day cultural diversity event targeted at celebrating multi-generational, multi-perspectival ways of belonging. Rooms throughout the building are filled with museum displays, seminars, live music. Roving performance artists move through the spaces, local cultural groups have set up temporary displays to advertise what they do, and some have also set up activities such as henna tattooing and traditional games. I am at the Museum to attend the event, however the mapping I make is of the building rather than the people. The Immigration Museum in Melbourne opened in 1998 in the building that was Old Customs House. In Australia Customs Houses were erected by British colonizers to regulate trade and immigration. The regulation of trade generated a lot of income for the Government before the introduction of income tax, however the regulation of immigration was designed specifically to enact the notorious ‘White Australia Policy’²¹⁰, this was a policy that openly prevented anyone of non-white, non-English speaking background from entering Australia. Iterations of the Policy continued to have a presence in Australian immigration laws until 1970s.

²¹⁰ See Laksiri Jayasuriya, David Walker, and Jan Gothard, *Legacies of White Australia: Race, Culture and Nation* (Crawley, WA: University of Western Australia Press, 2003) for a detailed account of the long-term impacts of the White Australia Policy on contemporary Australian society.

This rather long back story to the mapping in Fig. 1 is important because it offers some indication of the multitudes of things happening across scales and registers there, and how my inefficient mapping picked out ethical locational routes through those. I mapped the chips and chinks, the small marks of wear and tear and the small damages to the surfaces of the building. By mapping the damaging inflictions on the building, I sought to subvert the associations of power linked to colonial buildings and attend instead to the politics, histories, and reclaiming, of the space by the public programs and exhibitions that now take place. In its history the building that the Immigration Museum now occupies was created to enact the violent intentions of white colonialists; inefficiently mapping the tiny marks of damage, of the wear and tear to the building caused by the many people who have moved through its rooms, and mapping these during a vibrant cultural event filled with people who have historically been denied entry to Australia is a counter-mapping, wayfinding practice that is immersed in the politics and ethics of care.



Fig. 1 Inefficient mapping, Immigration Museum. Source: Linda Knight. Permission granted by Linda Knight

The figure 1 example describes how a cartographer does not move through phenomena via a pathway that goes from a to b, but through those affects and effects on a space that are geologic, material, historical, political, atmospheric, odorous, sonorous, lively, and still. These orientations attend to Yusoff's (2013)

untimely dimensions of the relational and interactive agglomerations of things in events. Chaotic, inefficient mapping is an ethical entangled participatory care-full observation, a relational and modest witnessing of matter and spaces. The mapping cannot emerge without this intense experience of things in movement and without being in the thick of the atmospheres and affective presences of colonization, appropriation, histories, futures, exclusions, privileges, neglect, survival, and persistence. The mapping method is a political, ethical, gestural commitment to thinking differently about reading the world.

The maps do not navigate space in the ways that conventional wayfinding maps do, however they can navigate through non-representational means such as through affects, politics, memories etc. Detailed explanation of the mapping practice is provided in chapter 6: *Inefficient mapping*, and how inefficient mapping requires close looking at all the things going on in phenomena. Close looking is more than the cursory scanning that is usually given to surroundings, it is a purposeful, intensive looking that pays attention to the small details of shapes, tones, edges, changes, movements, speeds and more. Close looking is a curatorial process in that the eyes don't stay absolutely fixed in one spot; they dart and move about, looking intently at different aspects of phenomena. The close looking fixes on the close details of the shapes and lines of the edges of things, or of the movement pattern something makes, and this coincides with making marks on the drawing surface (paper, tracing film, digital tablet, etc.). The marks are not accurate however because everything is happening quickly, they are not an absolute copy but a form of a tracing or a plotting. This curated, close looking is not ordered, it is chaotic, but the skill of looking so closely/intently takes time to refine and to understand how inefficient mappings assist with wayfinding in particular ways.

Other forms of wayfinding need not engage zonal, linear orientations but use affect, sensation, belonging, exclusion, culture, history, freedom, and fear. Navigation can happen variously through mental images, sequenced instructions, familiar sounds, smells, movements, topologies. For the artist Kevin Lynch the urban environment should have a “recognizable identity and a perceptible structure in which the limits, transitions, and passageways are clearly indicated”²¹¹. The task of wayfinding becomes complicated because things are in movement. Not

²¹¹ Karen O'Rourke, *Walking and Mapping: Artists as Cartographers*, (Cambridge: The MIT Press, 2013), 103.

just the physical or material movement of buildings being torn down or erected, but how the politics and cultures of place become more or less present to those who do or do not know about the ties between histories of land, place, and identity.

O'Rourke extends on Lynch's focus on the visual through her research into the excellent navigational skills of Australian Aboriginal people. O'Rourke's research led her to understand that Australian Aboriginal communities generationally transfer navigational learning through geographic language, cardinal direction, an internal compass, aurally-focused language, and an attuned body rhythm, and that these skills show that "aural signals play an important role"²¹² in connection to and moving through place and country. Brian Martin, a Bundjalung Muruwari scholar and artist, similarly, asserts how connection to country is vital and is "the basis of Indigenous ideology ...it specifically constitutes and is constituted by the relationship between memory, life and culture, which are embedded in land (country)"²¹³. This locational interrelationality is essential to life, being a practice, a spirituality, a relational corporality and "a dynamic ontology that exists within Indigenous cultural ideology". Locational connection is simultaneously situated in pasts, presences and futures and in long-standing and emergent ecological knowledges. As Martin succinctly puts it, "In Indigenous terms, one 'belongs to country', not the reverse and there is a reciprocal relationship between people and 'country'"²¹⁴.

In the 1970's W.J. Peasley, a flying Doctor in Western Australia who had built a long-term friendship with the Mandildjara people was invited by Aboriginal elders to search for Yatungka and Warri, an elderly couple and the last two Mandildjara people to still be living nomadically *on country* in the Western Gibson Desert region of Western Australia. Yatungka and Warri had not been seen for some years and there were fears for their safety after many years of drought in the region. Peasley and Mudjon, a Mandildjara man and old friend of Warri's set out in search of the couple, and Peasley's book *The Last of the Nomads* narrates the extensive and extraordinary journey they took. The text is discussed here because it is a detailed, non-indigenous observational account of Aboriginal wayfinding across what many would see as a hostile and featureless environment. I use Peasley's text here not because I prefer non-indigenous mapping/wayfinding scholarship over

²¹² Ibid., 119.

²¹³ Brian Martin, "Immaterial Land." In *Carnal Knowledge: Towards a 'New Materialism' Through the Arts*, ed. Elizabeth Barrett, and Barbara Bolt (London: I.B. Tauris, 2013), 187.

²¹⁴ Martin, "Immaterial Land," 185.

Aboriginal/Indigenous/First Nations scholarship, such as the excellent work by Abenaki scholar Lisa Brooks (2008), Annita Lucchesi (Southern Cheyenne) and Abigail Echo-Hawk (Pawnee) (2019), and Krim Benterak, Stephen Muecke, and Paddy Roe (Goolarabooloo) (2014) but because Peasley's account demonstrates how he interprets an Australian Aboriginal wayfinding practice as magical and mystical because it is unlike the colonial/western mapping and wayfinding practices he is more familiar with. Peasley's account exemplifies how colonial knowledges about wayfinding come to be centralized, even though they are a recent invention compared to the extremely long history of wayfinding practiced by Indigenous and nomadic peoples.

Peasley had spent many years working and living in the area and flying across it in his role as a flying Doctor was deeply impressed by the navigational skills of Mudjon as they made their way across vast areas of desert. He notes for example, that "every detail of this land was known to [Mudjon], from the low hills of Bulgarri, Tjurina and Wanderandja in the east to Djunderoo soak in the west ... he was familiar with every well and rock hole, every geographical feature ... what he saw he never forgot"²¹⁵. Although Peasley romanticizes the experience, what he describes is not just a case of good memory but a wayfinding practice that is deeply embedded in the tenses, energies and particles of the relationscape. Here, wayfinding takes different forms of familiarity that act as "an active process, a mode of recalling"²¹⁶ that are perfected because recollections are connections to the histories of the land and are central to maintaining "core aspects of identity"²¹⁷ for Indigenous peoples. Mudjon's wayfinding exemplifies the importance of connection to a social framework that serves as an "anchor for memory and meaning ...and the shared cultural forms and repertoires that invite us to recall"²¹⁸ how it feels to be in that place and how to move through it by being open to a communication that transcends past and present timescales. Inefficient mapping facilitates wayfinding not by relying on the legend symbols and lines on a conventional map to help you orient across unfamiliar territory, but by initiating familiarity by being located in the place, feeling the air

²¹⁵ W. J. Peasley, *The Last of the Nomads*. (Fremantle, AUS: Fremantle Press, 1983), 34-35.

²¹⁶ Paul Long and Jez Collins, "Mapping the Soundscapes of Popular Music Heritage." In *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke, UK: Palgrave Macmillan, 2012), 150.

²¹⁷ Gwilym Lucas Eades, *Maps and Memes: Redrawing Culture, Place, and Identity in Indigenous Communities* (Montreal: McGill-Queen's University Press, 2015), 19.

²¹⁸ Long and Collins, "Mapping the Soundscapes," 150.

currents, the smells, the organisation of light, shadow, how the body feels in the space, how the body must move as it steps over the terrain and how familiar that becomes.

Peasley observed how Mudjon was able to move from one landmark to the next in what seemed to Peasley as featureless desert plains. Peasley describes how “There were no hills, no tall trees, nothing to help him to orientate himself, yet we were travelling in trackless country from one point to another as though they were joined by a highway”. When Peasley asked Mudjon how he was able to navigate his way across the land Mudjon replied he had “walked the country many times in the past”²¹⁹. Signs and signals peppered the route, although Peasley noted they are not the primary locational signposts that Mudjon relied upon. Memories of events were important for orientation: “Mudjon indicated the spot where he had stood when the spears thrown by Warri and the angry men of the Budidjara had rained down near him. He located a place where as a young man ...he had eaten the fruit of the quandong tree”²²⁰. Eades suggests that “Wayfaring is movement in contact with the land, air, water, and biosphere in general. The wayfarer, in journeying across the land, is in continuous interaction with elemental features of the landscape”²²¹. What Peasley failed to understand that Mudjon utilized a locational connection through familiarity, possibly because Peasley himself found the terrain so unfamiliar and confounding. Locational familiarity enables most people to easily navigate their way through low-feature natural environments such as a local park, forest, beach, or waste ground. We walk that route many times and come to be with it and know it as part of the assemblage of physical things, energies of the body, wind, air, histories of times past and future. Familiarity activates the memory of moving the body in relation to a space that becomes feature-full to us even though it might be utterly unfamiliar and mysterious to others. Figure 2 is an example of an inefficient mapping produced in a locationally familiar place, and that this familiarity prompted a modest wayfinding practice of being-with phenomena across times and in ethical relation with place. Fish Creek is a waterway running through a neighborhood I once lived in. The suburb is named The Gap and sits in the traditional lands of the Turrbal people in Queensland, Australia. Fish Creek has spiritual importance to the Turrbal people and

²¹⁹ Peasley, *The Last of the Nomads*, 92.

²²⁰ Ibid., 91.

²²¹ Eades, *Maps and Memes*, 110.

is the site of a freshwater eel Dreaming story²²². Originally the creek wove its way through dense old forest, however in present day it threads through the usual features of a middle-class suburb: housing, schools, parks, bushland and a golf course. Walking trails flank parts of the creek that remain in park or bushland, these are popular and well-used. I was familiar with these sections of the creek and walked them regularly at different times of the year and in different weather conditions. I became familiar not only with the topology of these stretches, but with the occurrences of things and beings there, and also the histories and significance of the site. This ethical familiarity translates into a mapping that I completed while walking with the creek and while I noted small aspects of the movement of things going on. The mapping is a wayfinding document for me: when I look at this image I can recall where I walked, where I stopped, and I have mental images of these, including me being there and making the mappings of/as part of phenomena.



Fig 2. Inefficient mapping, Fish Creek. Source: Linda Knight. Permission granted by Linda Knight

²²² For a detailed timeline of Fish Creek, The Gap QLD see https://www.tiki-toki.com/timeline/entry/232182/History-of-Fish-Creek/#vars!date=47930_BC-06-05_17:44:24!

Ethical wayfinding and being-with place are very different to colonial practices of impartially or objectively charting land they might otherwise be unfamiliar with. Peasley for example, admires how “Mudjon could notice the marks from a distance of three or more meters. The man never ceased to amaze me with his marvellous powers of observation.”²²³. Peasley’s colonial interpretation of Mudjon’s wayfinding skills exposes how deeply embedded, are western ideas about geontologic relationalities. A colonial reading of Mudjon’s wayfinding sees him as placed on top of the ground, centrally positioned as the key activator of the landscape, using almost superhuman skills to unlock the secrets of *barren* earth which performs a backdrop of his mammoth trek. Indigenous scholarship is vital in dislodging the prominence of this view and for understanding complex interrelationalities between locations, *country*, identity, and the ethical ways of navigating through these. Tuck and McKenzie provide the example of Mishuana Goeman’s project (Re)mapping, as a project that explores how First Nations “Indigenous women have defined Indigeneity, their communities, and themselves through challenges to colonial spatial order, especially through literary mappings”²²⁴ that navigate belongings that predate colonial classifications. Tuck and McKenzie see how Goeman’s project attends to decolonisation through mapping and wayfinding practices based on interrelations, stories, histories, layered borderings, and future decolonial possibilities.

Goeman’s (Re)mapping project serves as an important methodological example of how wayfinding across land rich with different associative histories and cultures, relationships, organisations, and pathways can take place. The intense objects and features of sites that “have been made invisible by colonial forces”²²⁵ can possess different significances for those having different connections and relationalities with country. This means that ethical wayfinding is not only about charting alternate pathways or topologies, it is about taking responsibility for “the ability to respond”²²⁶ while being mindful of privilege, subjectivity, and the contributions we make to the politics of the world. With this in mind, inefficient mappings perform wayfinding functions in the following ways:

²²³ Peasley, *The Last of the Nomads*, 69.

²²⁴ Eve Tuck, and Marcia McKenzie. *Place in Research: Theory, Methodology, and Methods* (London: Routledge, 2015a), 135.

²²⁵ Jeremy Dennis, “On This Site.” Mapping Meaning, The Journal no.1 (Spring 2018): 23.

<http://www.mappingmeaning.org/the-journal-issues-2018>

²²⁶ Tuck and McKenzie, *Place in Research*, 159.

- *What does it feel like to wayfind while inefficiently mapping?* The place feels familiar and new at the same time. It might be a place where you have been to before, so you might know how to navigate it, or it might be a place you have never been to before. The familiarity comes not only from your prior experiences however, familiarity comes from time spent coming to know the place and thinking about that knowledge, and how that orients you in particular ways to that place. The knowledge might build via a combination of historical, cultural, political, environmental information. This knowledge brings awareness of phenomena through non-representational affects and registers, and this makes wayfinding a deeply considered/considering experience.
- *How do I actually go about it?* Once the location is selected, take time to research it and know it, through information that goes well beyond the specifics of your particular research topic. Cultural, historical, political, colonial, Indigenous, environmental information is important because it extends on how a location becomes ethically more familiar. Having this information should bring about a care-full navigation through place, whereby the information remains foregrounded as mappings are created. For example, there might be a site of cultural or historical significance in the place, this might be a key navigational point as a route through the place is created. The wayfinding in this case is not determined by conventional directional maps but by acknowledging and noting that sites have rich histories, significances, and associations.
- *How do I know I have achieved the above in a completed mapping?* The mappings might concentrate on making scratches and marks of aspects of phenomena at navigational points that have ethical significance. More than one navigational point might be included in a mapping, this is because, as discussed in chapter 6: *Inefficient mapping* the maps can contain layers of mappings from different locations, times, days, scales etc. There is no single, defined assertion of when an inefficient mapping is *finished*, as this idea of stasis works against the immanent and speculative theories informing the methodologic protocol.
- *How to look for a navigational route in a given map.* The combination of physically being in a place, researching about a place, and walking through it and mapping bring about a residing, geontologic learning that resurfaces when

mappings are looked at by the person/people who created them. The mappings are often abstract to others, but effect powerful reminders of wayfinding routes to those who created the mappings.

Conclusion

Inefficient mapping: a protocol for attuning to phenomena is a book about how phenomena might be inefficiently mapped. The mapping works closely with immanent and speculative theories, attuning to non-representational affects and energies of place, space, and event. The inefficient mapping methodology thinks-with theories of matter, affect, geontology, and care to read the phenomena within theoretical frames that include descriptions of the matter of the phenomena (Barad 2007), the tenses of the phenomena (Manning 2008; 2016), and the ontologies of the phenomena (Bennett 2010; Puig de la Bellacassa 2017; Povinelli 2011; 2016; Tuck and McKenzie 2015b).

This book describes how new research ontologies and speculative theories are emerging through a symbiotic relationship where the processual is epistemologically oriented, and critique becomes refined through its immersion in material and elemental relationalities and possibilities.

New methods redefine how familiar processes might be utilized when the conceptual premise changes. Conventional mapping practices generate particular forms of chaosgraphic data that address settler colonial interests. Inefficient mapping works to different agendas and produces visual readings that critique mainstream politics and privilege. The impact of such critical subversion extends beyond the appearance of the maps and the chaosgraphs; it redefines what data can be and what it can do, how data might be generated, what it might look like, how to read it, what such a reading might look like, how to analyse, and what claims can be declared.

Inefficient mapping: a protocol for attuning to phenomena proposes that inefficient mapping is an ethical way-finding methodologic protocol that prioritizes the not-easily describable or readable: the affects, politics, histories, and perspectives that shape place through the occupations and participation of in/non/human citizens. Inefficient mapping is especially useful for those who are curious to conduct alternative readings of phenomena, such as ones that pay attention to more-than-human, feminist, Aboriginal and Indigenous perspectives.

Inefficient mapping is a creative interaction with the world. The mappings could be regarded as artistic works because they do have aesthetic appeal however to categorize them as art because of their visual appearance reduces the ways that visual imagery contributes to and informs speculative theories and new methodologies. Their visual appeal does not automatically make them a work of art, they can be 'high-quality' images and still be research documents. Such judgements imply that methodological works must somehow be a sub-standard version of art; this says more about normative expectations around research, and around art. Inefficient mapping can be presented as art, they can be presented as research. In each instance they make the world more visible.

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