

INEFFICIENT MAPPING

A Protocol for Attuning to Phenomena



Linda

Knight

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Fig. 1. Hieronymus Bosch, *Ship of Fools* (1490–1500)

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ADVANCED METHODS

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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 neither claim authority, nor will I speak on behalf of Indigenous mapping practices and knowledges. I refer instead and throughout the book to the scholarship, expertise, and experiences of Aboriginal, Indigenous, and non-indigenous others closely connected to Indigenous peoples and cultures.

Inefficient mapping is a methodological protocol that employs drawing methods. The notion of a protocol is explained through the book and how a methodological protocol with drawing methods offers results that can be artistic, can be cartographic, can be data, and which are closely connected to and push forward a research enquiry or curiosity. Inefficient mapping is presented as a methodological protocol because the exacting controls of a protocol conversely spark creative problem-setting with respect to ideas and problem-solving explored through drawing. Protocols are a common feature of artistic practice, so they are appropriate for inefficient mapping that 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 led 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 experiments that embrace “not really knowing what the technique will help you do”² and, through this, maintain the presence of immanent and speculative theories in an 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

- 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 *Ibid.*, 99–100.

and I provide example mappings from this research throughout the book to clarify and illustrate information. The methodological protocol can be applied, however, to any investigation where mapping might be a useful tactic for reading phenomena.

In its organization, this book 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 intentions. 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 maintain the complexity of the happenings in the event. Chaosgraphs are presented as readable, but 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, “Attuning to Phenomena” discusses the theories that inform inefficient mapping and how inefficient mapping methodologically attunes to phenomena. This chapter asserts that immanent ontologies and the interweaving agglomerations of theory, critique, and practice are embedded in inefficient mapping and shows 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, and Indigenous and critical place inquiry.

This chapter also 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 is on place-based theories and inquiry.

The chapter “Experimental Methods” discusses critical readings of place and the problematic of applying methods designed to uphold colonial interests to critical place inquiry projects. The chapter further engages with recent writing on 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 such protocols as methodological practice.

“Inefficient Mapping” explores and explains practices of mapping in situ and with various tools, including paper-based materials as well as digital media technologies. This chapter has a practical focus and is intended to guide experiments and trials with the process. Examples of mappings are included, while narrative accounts of their production help elucidate details of the practices and how they were directed by specific protocols. This chapter is sectioned via sub-headings to assist focused experi-

mentation with materials, mark-making, and layering, and many mapping examples are provided to explain these processes in detail.

The chapter “Chaosographic Data” considers the ways in which inefficient mapping produces data, which 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 new possibilities for conceptualising both methods and data.

Finally, the chapter “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 their

cultural and political impacts. Mostly, I hope that this book ignites interest in 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 learning what directions inefficient mapping takes as other researchers put it to work.

Acknowledgment to Country

I pay my respects to the Woi wurrung and Boon Wurrung 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 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 most prevalent ways space, place, movement, and relationality are thought about. The targeted “socioeconomic and political dynamics”¹ driving western mapping have organized the world in terms of agricultural, economic, invasion, and governance potentialities, making land “readable as property”² and an economic commodity. Colonial mapping

- 1 Paul Long and Jez Collins, “Mapping the Soundscapes of Popular Music Heritage,” in *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke: Palgrave Macmillan, 2012), 145.
- 2 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 (2008): 1.

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 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”³ 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, and 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.⁴ The world became organized and determined

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

4 See particularly the work of Megan Cope, “Yarabinja Bujarang: Beautiful Sea Country,” in *Sovereign Words: Indigenous Art, Curation and Criticism*, ed. Katya Garcia-Anton

through colonialism and war. Those orderings persist and the demarcations 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.”⁵ The act of changing a name is not only about 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

(Amsterdam: Valiz, 2018), 133–40; Mishuana Goeman, “(Re)Mapping Indigenous Presence on the Land in Native Women’s Literature,” *American Quarterly* 60, no. 1 (2008): 295–302; Mishuana Goeman, “Notes Toward a Native Feminism’s Spatial Practice,” *Wicazo Sa Review* 24, no. 2 (2009): 169–87; and Annita Hetoevêhotokhe’ê Lucchesi, “Mapping Geographies of Canadian Colonial Occupation: Pathway Analysis of Murdered Indigenous Women and Girls,” *Gender, Place & Culture: A Journal of Feminist Geography* 26, no. 6 (2019): 868–87 for mapping projects that address cultural erasure through colonial reorganisation of geographic boundaries.

5 McCarthy, “Introduction,” 8.

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.”⁶ 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 stories⁷ to navigate and connect with diverse spatialities, readings, and belongings to place, land, and site and to their many material and living inhabitants.

At this point it is important to assert that writing a book about inefficient mapping methodological protocol for publication in a series about new research ontologies is not suggesting that inefficient maps have the same status as cultural counter-maps. The maps produced by the methodological protocol 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 hegemonic cartographic practices because it attends to different readings of space, life, community, presence, time, and belonging.

6 Ibid.

7 Goeman, “(Re)Mapping Indigenous Presence,” 295–302.

Western maps have been regarded as trustworthy due to their semiotics,⁸ which imply “an accurate, even objective picture of the world.”⁹ 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”¹⁰ of the cartographer and the happenings taking place there. Even with the accuracy 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”¹¹ 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.

Recent theoretical turns to complexity raise awareness of this messy business of life, which means

- 8 Bruno Latour, “Drawing Things Together,” in *The Map Reader: Theories of Mapping and Cartographic Representation*, eds. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester: John Wiley & Sons, Ltd., 2011), 65–72.
- 9 Hans Ulrich Obrist, “Redrawn Territories,” in *Mapping It Out*, ed. Obrist, 11.
- 10 McCarthy, “Introduction,” 9.
- 11 Obrist, “Redrawn Territories,” 11.

that mapping has great potential to go beyond recording topologies and geologies and to notice other aspects of this living world¹² 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.”¹³ Wood proposes that the interpretive foundations of maps make mapping a “profoundly performative”¹⁴ act to establish a factual account that has “ontological authority”¹⁵ over the topography but also the goings on, histories, and politics of a place. If mapping is performative, then mapping can be used for other performances of reading the land, within other contexts and for other beneficiaries. The performative nature of mapping opens up methodological possibilities for contesting notions of authenticity and neutrality, recording places in all their subterranean complexity and movement. Map-

12 Ibid.

13 Denis Wood, “The Anthropology of Cartography,” in *Mapping Cultures*, ed. Roberts, 283.

14 Ibid., 284.

15 Les Roberts, “Mapping Cultures: A Spatial Anthropology,” in *Mapping Cultures*, ed. Roberts, 13.

ping has immense methodological potential, then, due to its ability to communicate diverse information pertaining to different agendas: political, economic, cultural, racial, spatial, environmental, historical, elemental, and more. Obrist sees that the semiotic complexity and openness of maps loads them up with “active and political potential”¹⁶ 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, Chris Benton, Wayne Lanier, and Marina McDougall’s *Hidden Ecologies* project uses aerial photography, GPS tracking, and microphotography to access and map forgotten sites in the San Francisco Bay, USA, and to collect a record of multiple aspects of the area including microbial life, colonization,

16 Hans Ulrich Obrist, “You Are Here ... And Now,” in *Mapping It Out*, ed. Obrist, 236.

industrialization, abandonment, and migration.¹⁷ The maps of the Hidden Ecologies¹⁸ do not claim to be neutral documents. They were created in relation-with and in thinking-with¹⁹ 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 methodological 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,

- 17 See Karen O’Rourke, “Walking the Network,” in *Walking and Mapping: Artists as Cartographers* (Cambridge: MIT Press, 2013), 177–205 for a description of how the Hidden Ecologies project utilizes mobile media to map difficult to access sites.
- 18 The blog for the Hidden Ecologies project can be found at: <http://research-benton.ced.berkeley.edu/he/>.
- 19 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: Making Kin in the Chthulucene* (Durham: Duke University Press, 2016).

people and ideas.”²⁰ 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 methodological 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. 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

20 Bruce Braun, “Environmental Issues: Writing a More-Than-Human Urban Geography,” *Progress in Human Geography* 29, no. 5 (2005): 637.

the democratisation of production”²¹ 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”²² of phenomena to generate diverse perspectives and understandings of a context.

Maps are far more varied than the western 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.²³ The politics of who gets to do that semiotic interpreting, and the

21 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*, eds. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester: John Wiley & Sons, Ltd, 2011), 102.

22 Latour, “Drawing Things Together,” 67.

23 See Kimberly Powell, “Making Sense of Place: Mapping as a Multisensory Research Method,” *Qualitative Inquiry* 16, no.

fact that western readings of the land have shaped particular meanings that erase histories and stories,²⁴ 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, or exotic are upheld through colonial documentary objects “which have the properties of being *mobile* but also *immutable, presentable, readable*.”²⁵ 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

7 (2010): 539–55 for an investigation into how locational familiarity emerges through multisensory encounters.

24 See Krista Caballero and Sylvia Torti, “Introduction to Mapping Meaning, the Journal,” *Mapping Meaning: The Journal* 1 (2018): 6–9; Cope, “Yarabinja Bujarang”; Goeman, “From Place to Territories”; and Goeman, “(Re)Mapping Indigenous Presence” for scholarship on the erasure of Indigenous culture.

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

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.”²⁶

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 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

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

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.”²⁷ This work critiques practices that colonized land in the early days of photography and surveying. The early photography captured the land, marking, objectifying, and subjugating while keeping the colonizer hidden behind the lens, literally and metaphorically out of the frame.

Olafur Eliasson’s “Motional City Map” is a graphic rendering 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-relationshipscape²⁸ and the multiple movements that occur through those negotiations.

27 Trudi Lynn Smith, “The Breath Camera: A Prototype for Anticapitalist Photography,” *Mapping Meaning: The Journal* 1 (2018): 35.

28 Erin Manning, *Relationescapes: Movement, Art, Philosophy* (Cambridge: MIT Press, 2008).

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 during the nights leading up to the start of the fair. The location of the tent was 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 Frieze Art Fair map, which contained a plan of the exhibition booths but virtually no writing. Mapping animal movements as they intervene in 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”²⁹ and perhaps to experience art through the eyes of one of these animals. In doing so, visitors participate in performing a wry commentary on aesthetics, art, culture, and the economies of nature and location.

29 Adam Chodzko, “The Wrong Map,” in *Mapping It Out*, ed. Obrist, 23.

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 methodological 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”³⁰ 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”³¹ generates critically charged interactions, reflections, and recordings of

30 Obrist, “You Are Here ... And Now,” 235.

31 *Ibid.*, 11.

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.”³² Mapping emerges as a potent research process for speculative-ontological projects that address the damages caused by settler colonial practices to cultures, places, environments, histories, and futures. Artists are pushing the methodological capacities of mapping to experiment with ways of examining the world through these lenses.

Mapping produces a document that is open to amendment. Although western maps have enjoyed a status of authenticity – a dominant, objectified, and *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. Mapping is flexible and adaptable to each context and concept. Maps are “detachable, reversible, susceptible to constant modification”³³ as those contexts and concepts alter. Artistic mapping examples take diverse forms and

32 Ibid.

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

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 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 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 distinguish a map from a drawing

or a piece of art that uses GPS technology. 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.”³⁴ 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 has been 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 thriving³⁵ is 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

34 Roberts, “Mapping Cultures,” 4.

35 Ibid.

restrictions and enables them to look entirely different.³⁶ There is also much greater interest, awareness, and respect from western critical cartographers for 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”³⁷ 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 methodological protocols – what Vannini calls a “new experimental genre” – resist the strictures of conservatism and persist in thinking about complexity and uncertainty. These new methodological protocols, which include inefficient mapping, are a “hybrid genre [of method]

36 See Wood, “The Anthropology of Cartography” for examples of experimental mapping approaches to schematics and cartographic focus.

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

for a hybrid world.”³⁸ 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 historical urban citizens that populate cities now and in the future. I use the inefficient mappings as a geontological methodology to bring arts practices and speculative theories together through critical, creative praxis to theorize urban life in the anthropocene. This mapping 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 helps to contest the subjugating agendas of colonial projects. The performative basis of immanent mapping practices “offers productive possibilities”³⁹ for critiquing western cartographic traditions of the impartial cartographer who codifies

38 Phillip Vannini, “Non-representational Research Methods,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 3.

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

land in terms of its agricultural, mineral, or developmental potential, while ignoring its cultural and historical significance.⁴⁰ 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 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 methodological protocol. 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 now because they are less fixated on “what the map is [... than] what it does in any given context or milieu.”⁴¹ Shifting away from the faithful rendering of a map document

40 See also McCarthy, “Introduction.”

41 Roberts, “Mapping Cultures,” 4.

and onto the act of mapping is methodologically productive. Mapping, rather than the map, is the key focus of this book, changing 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 questions 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”⁴² 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.⁴³ Inefficient mapping does, however, notably contribute to this vibrant lineage. Through a process of *chaosgraphing*

42 *Ibid.*, 10.

43 *Ibid.*

(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 witnessing⁴⁴ the already-movements of matter and/in spaces.

44 In Donna Haraway, “Modest_Witness@Second_Millennium,” in *The Haraway Reader*, ed. Donna Haraway (New York: Routledge, 2004), 223–50, Haraway uses the term “modest witness” to contest the archetype of the rational, scientific observer who objectifies and classifies nature.

Chaosgraphics

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

The graphic orientation of the inefficient mappings allows for visual notation of multiplicitous activity: the overlapping, simultaneous, and multiple movements, forms, and elements in phenomena that are occurring irrespective of human presence. This layering is an important curatorial process for documenting the movements in the chaos, allowing one 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, that is, as it traced the chaotic arrangements of things happening in phenomena. 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 throughout this book demonstrate, these marks are not carefully arranged on the page. They often overlap, sometimes cross over, and are sometimes 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 how 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”¹ 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

- 1 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*, eds. Martin Dodge, Rob Kitchin, and Chris Perkins (Chichester: John Wiley & Sons, 2011), 102.

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.”² Chaosgraphics visually convey theories and ideas about lively matter by recording movements, shimmerings, sounds, smells, spaces, histories, and subjects. Chaosgraphics differ from infographics because data is not organized or summarized through visual, schematic representational translations, as is commonly seen in an infographic. Additionally, the information chaosgraphs communicate may take a longer time to read, whereas infographs purposefully aim to be an “easy-to-understand reductive symbolic picture”³ of large-scale or complex qualitative or quantitative data sets. As discussed in chapter 6, the lines and marks in the mappings have no conformity; they are

- 2 Kathleen Stewart, “New England Red,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 26.
- 3 Steven Heller and Rick Landers, *Infographic Designers’ Sketchbooks* (New York: Princeton Architectural Press, 2014), 6.

gestural and hold meanings in their own way rather than filtering, essentializing and summarizing data through easily readable visual symbols. The mappings create chaosgraphs that remain with the complexity of the time-place-event, but that are nevertheless a readable archive of a research event.

Inefficient mapping differs from the infographic, schematic tendencies of conventional maps that fuse “signs onto a common plane.”⁴ The translation of three-dimensional space to two-dimensional map through “assigning correspondences between abstract symbols and physical points of reference”⁵ 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 layering creates irregular connections between times, places, things that were not originally in relation. The data that appear in inefficient mapping are sensuous

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

5 Karen O'Rourke, *Walking and Mapping: Artists as Cartographers* (Cambridge: MIT Press, 2013), 177.

signs⁶ of phenomena, conveying the semiotics of non-representational, speculative, immanent affects and registers of places and spaces.

Chaosgraphs are readable, but 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.⁷

Infographics have become a ubiquitous mode to read data and research findings since the advent

- 6 See Gilles Deleuze, *Proust and Signs*, trans. Richard Howard (New York: G. Braziller, 1972) where Deleuze discusses semiotics through grotesque gestures (the easily understood) or sensuous signs (the gradual understanding of nuanced or subtle signs).
- 7 Patricia Ticineto Clough et al., "The Datalogical Turn," in *Non-Representational Methodologies*, ed. Vannini, 146–64. The authors propose that the immense presence of data gathering technologies govern almost every aspect of our daily life, and this means that we are now living after the datalogical turn.

of a technological life and the arrival of Big Data.⁸ 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.”⁹ 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 and 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 journalism is a new kind of news storytelling enabled by the vast amounts of digital information collected

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

9 Heller and Landers, *Infographic Designers’ Sketchbook*, 6–7.

by companies and governments.”¹⁰ The emphasis for the information architect is to mine the data for “relationships – between people, organisations, and governments.”¹¹

This is an alarming situation. What data the public sees, and which interpretations they have access to, is determined by 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.¹² Their job is to elegantly translate large bodies of complex

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

11 Ibid..

12 Role descriptions of the Information Architect establish that the level of research required for each project extends to interpreting the raw data only. See “Information Architect: Job Description,” *Freshgigs.ca*, <https://www.freshgigs.ca/blog/information-architect-job-description/> and UXClub.com, “What Does an Information Architect Do?” *YouTube*, December 5, 2017, https://www.youtube.com/watch?v=_lwzWdO8A18 for further explanation.

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,”¹³ realized through standard schematics to enable quick reading, skimming over, and 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.”¹⁴ 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 result is that 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 consider other critical framings.

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

14 *Ibid.*, 8–9.

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 ways [...] from everyday social issues to deep social trends, it helps to provide reliable insights and predictions”¹⁵. Infographics convey data analysis in useful ways, but it is a translation and a summary. Summarizing and translating is 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 material that, the founders claim, “helps in understanding data on a molecular level.”¹⁶ Milani and Molteni’s The Big Feast project summarized, in kilos, the foods eaten in Germany in a single year. The massive body of data was distilled into food icons

15 Ibid., 7.

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

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 read very quickly, it often does not include much of the “molecular” or complex data results. An infographic works by using high-impact visuals, so in the case of The Big Data it may have been that only particular data samples were referred to, leaving alone the data on income brackets, food diversity, and other elements. 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 how this determines which data is used.

The Product Space charts global trade through the relationships of manufacture, production, and supply at local, national, and international scale. The infographics that are generated within The Product Space are extremely detailed and seem almost incomprehensible, however they filter data sets. The charts, although extremely complex,¹⁷ contain a large amount of information about large-scale and small-scale transactions which are distilled into codes and schemas. Color coding and node sizing are employed to help illustrate multiple pathways and clusters and to represent trade classifications such as agribusiness, cereals, forest products, machinery, chemicals, etc., as well as the geographic proximity of trading. The complicated charts visually present statistics and summaries because what isn't captured here are the exchanges and trades that take place outside the import and export records, such as black-market trading or independent trading through e-commerce websites such as Etsy or Zazzle. Despite its creative

17 A fuller description on The Project Space is found in Cesar Hidalgo et al., "The Product Space Conditions the Development of Nations," *Science* 317, no. 5837 (2007): 482–87.

approach to conveying the complexities of world trade, the reliability of The Product Space is bounded by its analysis of large and complex data only.

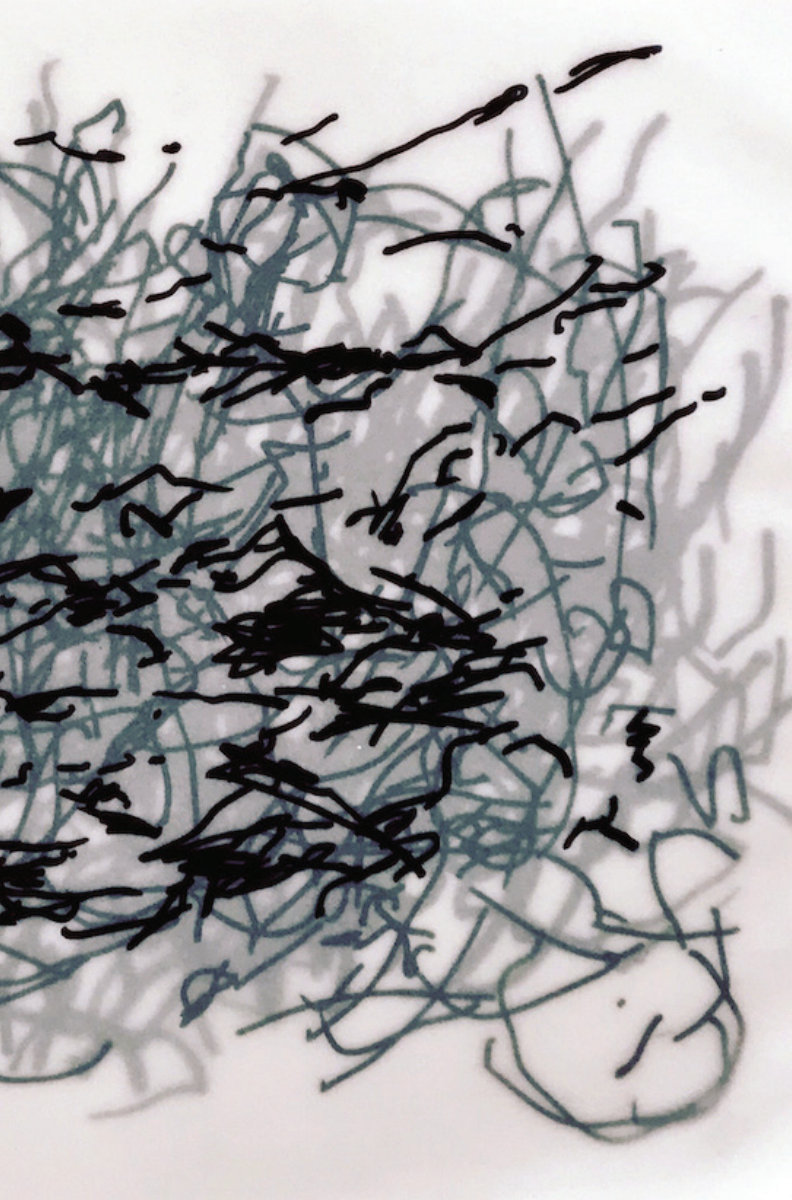
Heller and Landers argue that data visualization or “data-viz” has “changed from the facile and virtually undesigned to the conceptually rigorous,” although their assertion that the change is to “meet an increased demand for digestible information”¹⁸ indicates that the conceptual rationale for infographics has not shifted significantly. As these examples detail, infographics competently distil and visually convey complex and large-scale data. The examples do this quite differently, though each uses schematics and semiotic visual coding to make that data visually accessible to broad audiences who may have little to no expert knowledge of the topic. In each example, the information architects provide the audience with “prime, lean data [... via] a detailed annotated schematic”¹⁹ to aid audience understanding of the topic. Although inventive and visually pleasing, the two examples can provide only quite specific readings of the world, because they rely upon specific data sets. The infographic is not concerned with critically examining who or what does the data represent,

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

19 Ibid.



Fig. 2.1. Chaosgraph. Image by the author.



make invisible, ignore, or prioritize. Additionally, the infographic does not critically question what counts as authentic research information. Data banks that are historic, fixed; large banks of information that can be sorted, arranged, and visualized are used in preference over small sets of data or emergent data that are difficult to organize and summarize.

Beautifying Big Data through eye-catching infographics effectively dodges public discussion and diverts awareness from the politics of data, who are its main beneficiaries, and its impacts on research. The tendency towards using infographics to represent research does, however, fuel public conceptions of what bona fide research looks like. This means that intellectually rigorous and critically theoretical research, or research about immanent, speculative futures or diverse subjects, lives, and places may be looked on suspiciously or as less valid. It is important, therefore, to have modes for presenting data in ways that maintain its complexity and which are not under pressure to quantify, distil, or 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, but the example shown in figure 2.1 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.

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, but they do offer a possible mode for communicating on research that is interested in speculative readings of phenomena and of things in movement.

Attuning to Phenomena

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 methodological protocol.

Inefficient mapping thinks-with immanent ontologies and the interweaving agglomerations of theory, critique, and practice¹. 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 partintellectually and conceptually. Speculative theories and investigations into the transmaterial interrelationalities of non/in/human collaboration – emerging from diverse scholarship

- 1 See Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation,” *Cultural Studies – Critical Methodologies* 15, no. 2 (2015): 136–44.

and arts practice including LGBTQIA+,² feminist,³ crip,⁴ and decolonial⁵ studies – contribute to wider critiques

- 2 See Ana Horvat, “Tranimacies and Affective Trans Embodiment in Nina Arsenault’s Silicone Diaries and Cassils’s Becoming an Image,” *a/b: Auto/Biography Studies: Embodiment* 33, no. 2 (2018): 395–415 and Stephanie Anne Shelton, “The Influence of Barad’s ‘Transmaterialities’ on Queer Theories and Methodologies,” *GLQ: A Journal of Lesbian and Gay Studies* 25, no. 1 (2019): 119–24.
- 3 See the following: Ida Kathrine Jørgensen and Hanna Wirman, “Multispecies Methods, Technologies for Play,” *Digital Creativity* 27, no. 1 (2016): 37–51; Brenda Parker, “Feminist Forays in the City: Imbalance and Intervention in Urban Research Methods,” *Antipode* 48, no. 5 (2016): 1137–358; Val Plumwood, “Integrating Ethical Frameworks for Animals, Humans, and Nature: A Critical Feminist Eco-Socialist Analysis,” *Ethics and the Environment* 5, no. 2 (2000): 285–322; and Anna Lowenhaupt Tsing and Sylia Junko Yanagisako, “Feminism and Kinship Theory,” *Current Anthropology* 24, no. 4 (1983): 511–16.
- 4 See Jina B. Kim, “Toward a Crip-of-Color Critique: Thinking with Minich’s ‘Enabling Whom?’” *Lateral: Journal of the Cultural Studies Association* 6, vol. 1 (2017).
- 5 See Laura A. Ogden, Billy Hall, and Kimiko Tanita, “Animals, Plants, People, and Things: A Review of Multispecies Ethnography,” *Environment and Society: Advances in Research* 4, no. 1 (2013): 5–24 and Eve Tuck, Marcia McKenzie, and Kate McCoy, “Land Education: Indigenous, Post-colonial,

of the dominant 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,⁶ 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 historical 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

and Decolonizing Perspectives on Place and Environmental Education Research,” *Environmental Education Research* 20, no. 1 (2014): 1–23.

6 Elizabeth A. Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham: Duke University Press, 2016).

about urban citizenships. I use inefficient mapping as a geontological methodological protocol, bringing arts practices and speculative theories together through critical, creative praxis to theorize urban life in the anthropocene.

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 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: “traditional sorts of maps are notoriously limited when it comes to displaying, say,

‘emergent processes,’”⁷ 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”⁸ 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,”⁹ but it 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 always a fictional account of the present. Maps remain fixed while all else is moving, so

7 Gregory J. Seigworth, “Maps and Legends,” *Communication and Critical/Cultural Studies* 8, no. 3 (2011): 316.

8 *Ibid.*, 315.

9 *Ibid.*, 316.

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”¹⁰ 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 aspect¹¹ in inefficient mapping, because this “embraces the limits of data”¹² and thus implies that 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 emer-

10 Springgay and Zaliwska, “Diagrams and Cuts,” 139.

11 Haraway critiques human exceptionalism by reminding us of the many symbiotic relations between things of the world, and that trying to assert locational difference is problematic because of these symbioses. See Donna J. Haraway, “Modest_Witness@Second_Millennium,” in *The Haraway Reader*, ed. Donna Haraway (New York: Routledge, 2004), 223–50.

12 Springgay and Zaliwska, “Diagrams and Cuts,” 139.

gence of modes of coming-into-existence (or fading from existence)”¹³ 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”¹⁴ that are about to come into focus. As an example, figure 3.1 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 3.1 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

13 Seigworth, “Maps,” 317.

14 Kathleen Stewart, “Regionality,” *The Geographical Review* 103, no. 2 (2013): 284.



Fig. 3.1. Urban water citizen. Image by the author.



cluster of marks maps the water and also purposefully emphasize the excessive activities happening beyond each mark.

Attuning to the immanence of movements and things¹⁵ means taking note of the trans-border crossings of matter and energy and the merging and traveling of things in unregulated ways. In this sense, inefficient mapping is 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,¹⁶ because the mapping works with

15 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...”: Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem, and Helen R. Lane (Minneapolis: University of Minnesota Press, 1987), 256–341.

16 Kontturi uses the example of double exposure in Susan Nevado’s *Honest Fortune Teller* to articulate the transience of signification in imagery. See Katve-Kaisa Kontturi, “From Double Navel to Particle-Sign: Toward the A-Signifying Work

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 hydroelectricity¹⁷ or irrigation schemes.¹⁸ My inefficient approach to mapping the 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 non/in/human perspectives can speak against white privilege, human exceptionalism, and economic extractivism. Such research can

of Painting,” in *Carnal Knowledge: Towards a ‘New Materialism’ through the Arts*, eds. Elizabeth Barrett and Barbara Bolt (London: I.B. Tauris, 2013), 17–27.

- 17 An example of this in Australia is the Snowy Mountains Hydro Scheme.
- 18 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 has cultural significance to local Aboriginal communities, have become salinated or dried up due to this redirection.

demonstrate that power emerges through the intense affects generated through posthuman interrelations of matters, times, meanings, and atmospheres.¹⁹

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, and acts are described by Karen Barad as *the phenomena*. Phenomena are understood as an event with “registers and capacities,”²⁰ 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”²¹

19 See Brian Martin, “Immaterial Land,” in *Carnal Knowledge*, eds. Barrett and Bolt, 185–204.

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

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

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,”²² 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, 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.”²³

22 Ibid.

23 Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis: University of

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.”²⁴ 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”²⁵ 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

Minnesota Press, 2017), 32.

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

25 *Ibid.*

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."²⁶ 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 together and exist "beneath the thresholds of humans' conscious awareness."²⁷ 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

26 Ibid., 124.

27 Ben Anderson and James Ash, "Atmospheric Methods," in *Non-Representational Methodologies*, ed. Vannini, 42.

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 themselves in the space or event. The multitudes of changes and movements occur at a scale and speed beyond the gaze of the human.

Jane Bennett 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”²⁸ 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. Theorizing materiality complicates the

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

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.”²⁹ Consequently, a complicated, posthuman theory 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,”³⁰ recognizing that the human is only a small aspect of this collection.

Posthuman theories of matter’s vitality and vibrancy push and extend sociopolitical understandings of contexts and situations. Such readings also help to extend the capacities and scope of the human gaze with its tendencies toward brut readings of the world. Posthuman theories bring about a timely opportunity for methodological processes to activate research projects that are not purely techno-scientific. For example: Bennett’s studies³¹ of 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 brought in. For

29 Ibid., xi.

30 Ibid., 32.

31 Ibid.

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.”³² 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.”³³ 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,”³⁴ immersed in the thick of things not just as a participant, but as a researcher, a recorder,

32 *Ibid.*, 61.

33 *Ibid.*, xiv.

34 *Ibid.*, xv.

a commentator, 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.”³⁵ 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.”³⁶

Scale impacts on the ways vibrancy and materiality, or matter, is conceptualized. Barad’s work on the ethics of mattering and intra-active entanglements (described as “agential realism”) examines matter through the extreme scale dimensions that nanotechnology 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. Electrons and photon particles do not stay fixed within an object but travel back and forth between objects and the

35 Ibid., 99.

36 Ibid.

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.”³⁷ Movement occurs in different directions with temporal, physical, and spatial impact, creating shifts that “entail an ongoing reworking of the notion of dynamics”³⁸ 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.”³⁹ 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

37 Barad, *Meeting the Universe Halfway*, 141.

38 *Ibid.*

39 *Ibid.*, 137.

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.

Elizabeth Grosz takes up the notion of agential 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"⁴⁰ of ideas, contexts,

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

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/knowing country or place. Indigenous performative processes, which mediate everyday life, can be navigational to facilitate “movement across ‘country’ and all culture.”⁴¹ 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

41 Martin, “Immaterial Land,” 196.

deposited. Being in a place changes the dynamism and organization 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; she names these *apparatuses*.⁴²

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”⁴³ of times, scales, and movements. Within the swirl of mattering of the event or site, inefficient mapping is 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”⁴⁴ comprised also

42 Barad, *Meeting the Universe Halfway*, 139.

43 Ibid.

44 Ibid., 170.

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, the 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 – these are all apparatuses and phenomena. Apparatuses are not separate from phenomena; they animate them, enacting a separation and forming “a resolution within the phenomenon[’s ...] indeterminacy.”⁴⁵ When I am inefficiently mapping, my drawing tools, body movements, spinal fusion, and so on are 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

45 *Ibid.*, 140.

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.”⁴⁶ In figure 3.1, the marks and scratches I place on the paper are made using the apparatuses of paper, pen, muscle, body, breath, memories, and 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 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

46 Ibid.

practice⁴⁷ and this creates difference. Erin 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,”⁴⁸ 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 actualization to take place.

Exteriority, or formation within phenomena, is emergent, because it is brought about through changes in time or matter. Methodologic protocols must take notice of the intra-active, ongoing emergent organizations 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. The drawing methods of inefficient mapping can only capture small moments of the continuous movements of multiple potentialities cycling around and returning. Other

47 Ibid., 155.

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

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, essentialized account and the limitations of representative data⁴⁹. Methodological protocols such as inefficient mapping, which contribute to the new research ontologies, are speculative, impure, imperfect, sometimes abstract, and question

49 See Liu Yikun and Dong Zhao, *Visual Storytelling: Infographic Design in News* (Mulgrave: The Images Publishing Group, 2015) for a detailed study on infographics.

“what exactly is prosthetic and what is biological,”⁵⁰ 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 non/in/human relations, because “the enactment of a cut [...] depends on the specific embodiment of particular human concepts”⁵¹ 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 have 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.”⁵² Phenomena actively and directly participate in shifting the mass of energies, matter, and particles – what Grosz calls the chaos into new configurations and

50 Manning, *Relationscapes*, 24.

51 Barad, *Meeting the Universe Halfway*, 154.

52 Grosz, *Chaos, Territory, Art*, 3.

new productions.⁵³ 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.”⁵⁴ 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 engagement with the world.”⁵⁵ As theories emerging from the post humanities and sciences expand scale, slow time, and hone our capacity to see, research ontologies must

53 Ibid.

54 Manning, *Relationscapes*, 54.

55 Barad, *Meeting the Universe Halfway*, 49.

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.”⁵⁶ 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 western traditions of cartography and landscape painting that are motivated by ownership, colonisation, power, economy, trade, and nationhood. Theoretical sciences-influenced humanities research which in-

⁵⁶ *Ibid.*, 138.

cludes new materialism,⁵⁷ object-oriented ontology,⁵⁸

- 57 See Stacy Alaimo and Susan J. Hekman, eds., *Material Feminisms* (Bloomington: Indiana University Press, 2008); Jessica Ringrose and Julia Coffey, “Boobs and Barbie: Feminist Posthuman and New Materialism Perspectives on Gender, Bodies and Practice,” in *Practice and Theory in Education: Diffractive Readings in Professional Practice*, eds. Julianne Lynch, Julie Rowlands, Trevor Gale, and Andrew Skourdoumbis (London: Routledge, 2016), 175–92; and Angela Willey, “A World of Materialisms: Postcolonial Feminist Science Studies and the New Natural,” *Science, Technology, & Human Values* 41, no. 6 (2016): 991–1014.
- 58 See Lori Beth De Hertogh, Liz Lane, and Jessica Ouellette, “‘Feminist leanings’: Tracing Technofeminist and Intersectional Practices and Values in Three Decades of Computers and Composition,” *Computers and Composition* 51 (2019): 4–13; Margaret Schwartz, “Thrownness, Vulnerability, Care: A Feminist Ontology for the Digital Age,” in *Digital Existence: Ontology, Ethics and Transcendence in Digital Culture*, ed. Amanda Lagerkvist (London: Routledge, 2018), 97–115; and Carol A. Taylor, “Close Encounters of a Critical Kind: A Diffractive Musing In/Between New Material Feminism and Object-Oriented Ontology,” *Cultural Studies – Critical Methodologies* 16, no. 2 (2016): 201–12.

posthumanism,⁵⁹ feminist geographies,⁶⁰ and critical race theories⁶¹ think with theoretical sciences methodologically and draw scholarly attention to the preference and dominance of particular knowledges

59 See Stacy Alaimo, *Exposed: Environmental Politics and Pleasures in Posthuman Times* (Minneapolis: University of Minnesota Press, 2016); Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013); and Astrida Neimanis, *Bodies of Water: Posthuman Feminist Phenomenology* (London: Bloomsbury Publishing, 2017).

60 See Linda McDowell, *Gender, Identity and Place: Understanding Feminist Geographies* (Cambridge: Polity Press, 2018) and Fikile Nxumalo and Stacia Cedillo, "Decolonizing Place in Early Childhood Studies: Thinking with Indigenous Onto-Epistemologies and Black Feminist Geographies," *Global Studies of Childhood* 7, no. 2 (2017): 99–112.

61 See Adrienne Asch, "Critical Race Theory, Feminism, and Disability: Reflections on Social Justice and Personal Identity," in *Disability and Equality Law*, eds. Elizabeth F. Emens and Michael Ashley Stein (London: Routledge, 2017), 143–76; Kimberle Crenshaw, "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory, and Antiracist Politics," in *Feminist Legal Theory: Readings in Law and Gender*, eds. Katharine T. Bartlett and Rosanne Kennedy (New York: Routledge, 2018), 57–80; and Nicola Sturgeon, *Ecofeminist Natures: Race, Gender, Feminist Theory and Political Action* (London: Routledge, 2016).

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 complicates phenomena. BUSH gallery is an outdoor, site-based gallery located across residential Indigenous urban and remote territories in British Columbia, Canada. The 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.”⁶² BUSH Gallery is important to my inefficient mapping project because of how it centralizes interrelationalities between land and culture and reveals 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

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

practices which are born out of lived connection to the land.”⁶³

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.”⁶⁴ 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”⁶⁵ 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.”⁶⁶ Site/ation is not fixed to a linearity,

63 Ibid., 6.

64 Ibid., 8.

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

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

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 forestscapes to show that "what remains exceeds the infrastructural remains. [First Nations] are caught up in the afterlife of captivity [...] infused with the violence of being left to float in the air like an unanswered question."⁶⁷ 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 ap-

67 Belcourt, "To Be at the Mercy of the Sky," 13.

pearing 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.”⁶⁸ As Parker states, “attention to spatial and temporal difference and flexibility with gendered and other analytic frames”⁶⁹ 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”⁷⁰ 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. She asks the question, “How might we turn from an ontology of potentiality to a sociology of potentiality in which potentiality is always embodied

68 *Ibid.*, 13.

69 Parker, “Feminist Forays in the City,” 1347.

70 Haraway, “Modest_Witness@Second_Millennium,” 234.

in specific social worlds?”⁷¹ In other words, rather than looking 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 colonization, we can understand that these conditions for living are due to the ongoing power dynamics of colonization 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 reflection”⁷² 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 “material-

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

72 *Ibid.*, 13.

ity of the social.”⁷³ 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.”⁷⁴ 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 methodological protocol, inefficient mapping can articulate how complexity occurs and makes the world.

73 *Ibid.*, 5.

74 *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 problems associated with 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 investigate non-representational affects and atmospheres. This chapter examines how artists use protocols as a methodological practice for interpreting and recording within investigative projects.

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"¹ 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."² 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 structured as

1 Karen O'Rourke, *Walking and Mapping: Artists as Cartographers* (Cambridge: MIT Press, 2013), 47.

2 *Ibid.*, 47–48.

a sequence to ensure a consistent application, while 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. 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 experiments 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, analyzing the recording. Though the exact procedure of the methods varies slightly within each research project, it provides a sequence that is established as effective in obtaining focused information that is connected to or elucidates on the research question. This chapter concludes with discussion on what

experimental methods, such as the methodological protocol of mapping inefficiently, do for thinking about the world. Examples of inefficient mappings are included throughout this chapter to detail how methodological protocols facilitate careful recordings and deeply theorized non-representational readings of places and spaces.

Recent immanent and speculative theories are not the first theories to question western scientific research practices. St. Pierre,³ for example, cites Foucault and Derrida to argue that ontological critique as articulated by poststructural theories offers ways of rethinking conventionalized ideas about reading the world, including what/who counts as a subject and as a voice of authority. Poststructural scholars

3 Elizabeth A. St. Pierre, "A Brief and Personal History of Post Qualitative Research: Toward 'Post Inquiry,'" *Journal of Curriculum Theorizing* 30, no. 2 (2014): 2–19.

including St. Pierre, Lather,⁴ MacLure,⁵ and Chaudry⁶ 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 also notes how “posthumanist, postempirical, and postqualitative frameworks call for new models of science, second empiricisms, reimagined social sciences, capacious sciences, sciences of difference”⁷ to overhaul the persistence of a Cartesian rationalist research agenda which primarily serves neoliberal, hegemonic, heteronormative interests.

- 4 Patti Lather, “Critical Frames in Educational Research: Feminist and Post-Structural Perspectives,” *Theory into Practice* 31, no. 2 (1992): 87–99.
- 5 Maggie MacLure, “Researching without Representation? Language and Materiality in Post-Qualitative Methodology,” *International Journal of Qualitative Studies in Education* 26, no. 6 (2013): 658–67.
- 6 Lubna Nazir Chaudhry, “Researching ‘My People,’ Researching Myself: Fragments of a Reflexive Tale,” in *Working the Ruins: Feminist Poststructural Theory and Methods in Education*, eds. Elizabeth A. St. Pierre and Wanda Pillow (New York: Routledge, 2000), 96–113.
- 7 Norman K. Denzin, “The Death of Data?” *Cultural Studies – Critical Methodologies* 13, no. 4 (2013): 353.

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”⁸ that seeks out seams of convergence to establish new modes for understanding the world, not from an exclusively human perspective.

Experimental methods can reimagine the possibilities for research activity and the generation of 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”⁹ 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

- 8 Eve Tuck and Marcia McKenzie, *Place in Research: Theory, Methodology, and Methods* (London: Routledge, 2015), 101.
- 9 Eve Tuck and Marcia McKenzie, “Relational Validity and the ‘Where’ of Inquiry: Place and Land in Qualitative Research,” *Qualitative Inquiry* 21, no. 7 (2015): 633.

of research [...] to aid a researcher and/or participant in gathering some kind of evidence.”¹⁰ 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.”¹¹ The notion of the impartial, *invisible* researcher has emerged from a privileged position, with research neutrality coming from a view of the world in which whiteness, heteronormativity, and masculinity are normalized. Privilege, which is often the result of dominance, assumes the possibility of the invisible observer due to having a sense of entitlement to access and observe all aspects of the land, people, and environments, and to be able to construct *objective* readings of these¹² due to the observed differing from the privileged group.

- 10 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, no. 3 (2017): 205.
- 11 Brenda Parker, “Feminist Forays in the City: Imbalance and Intervention in Urban Research Methods,” *Antipode* 48, no. 5 (2016): 1339.
- 12 See *ibid.* for a critical engagement with the privilege of access urban research methods.

Tuck and McKenzie's¹³ work 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 as he declares, "Our reflections [...] must also extend to the instruments we use, and their orchestration,"¹⁴ 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 – 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, wherein a key seam underpinning the work might include issues of "Indigenous sovereignty, refusal, and

13 Tuck and McKenzie, *Place in Research*, and Tuck and McKenzie, "Relational Validity and the 'Where' of Inquiry."

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

the non-abstraction of land.”¹⁵ 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.”¹⁶ They explain 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”¹⁷ 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 colonialism, and environmental

15 Tuck and McKenzie, “Relational Validity and the ‘Where’ of Inquiry,” 636.

16 Ibid.

17 Ibid., 635.

degradation.”¹⁸ 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.”¹⁹ 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”²⁰ to topple the centrality of white exceptionalism and to fully instigate new methodological and datalogical possibilities. Non-representational theories and methodologies hold much potential in this regard. Non-representational protocols have helped researchers to attend to “conceptual undercurrents in their work, such as vitality, performativity, corporality, sensuality, and mobility,”²¹ attuning to what can be seen but not necessarily

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

19 Tuck and McKenzie, “Relational Validity and the ‘Where’ of Inquiry,” 633.

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

21 Phillip Vannini, “Non-representational Ethnography: New Ways of Animating Lifeworlds,” *Cultural Geographies* 22, no. 2 (2015): 317.

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.”²² Research methodologies that are immersed in complexity, and methods that attempt to map complex inter-relationalities, must therefore not only advocate for difference, they must require it. The inefficient mapping methodological protocol, for example, must foreground “anti-racist and feminist theoretical, methodological, and empirical insights,”²³ especially when mapping in the urban context to dismantle the centrality of whiteness and offer diverse readings and perspectives. Figure 4.1 provides such an example. A small group of early childhood academics sits in

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

23 Parker, “Feminist Forays in the City,” 1337.



Fig. 4.1. Inefficient mapping, hands. Image by the author.



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 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.

Experimental methodologies such as inefficient mapping are sensitive to the ethico-political undercurrents of the world and are able to scratch open the aspects usually concealed. In the figure 4.1 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 4.1 shows, research methodologies such as inefficient mapping, which work with speculative and immanent theories, can critique prejudices and privileges through paying attention to incidences of “respectful collaboration, dynamic storytelling, and reciprocity.”²⁴ Centering these usually concealed moments helps to build research processes that challenge the “colonizing practices”²⁵ 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”²⁶ of the world.

24 Christine Rogers Stanton, “Crossing Methodological Borders: Decolonizing Community-Based Participatory Research,” *Qualitative Inquiry* 20, no. 5 (2014): 573.

25 Ibid.

26 Kathryn Yusoff, “Insensible Worlds: Postrelational Ethics, Indeterminacy, and the (K)notes of Relating,” *Environment and*

Experimental methods that think-with and act-with immanent and speculative theories, such as inefficient mapping, can take note of intensive zones that are difficult to quantify, such as the movement of hands during a conversation. In this way, new, experimental methodological protocols such as inefficient mapping purposefully pay attention to the subjective, material, and metaphysical through the histories, power, and significance of the more-than-human world.

New ways of thinking about the world can make us care-fully attend²⁷ to alternate readings of space that include the impacts of whiteness, masculinity, and colonization on human as well as non/in/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 immediately rewarding. Critical care takes place in the thick of life in the hope of transforming the “affective perception of things.”²⁸ In the context of research, critical caring emerges through the development of

Planning D: Society and Space 31 (2013): 208.

- 27 In *Matters of Care*, Puig de la Bellacasa proposes that caring means being attentive to the politics and happenings of the world, and that it is important to understand that this form of caring is neither easy nor simply benevolent.
- 28 Puig de la Bellacasa, *Matters of Care*, 65.

methodologies that may be more laborious, because they expose mainstream perceptions of contexts and situations that are usually, and ironically, “concealed in research.”²⁹ 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 inequalities”³⁰ 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”³¹ of phenomena, read through analyses that remain in the mess,³² i.e., analyses that do not distill or schematize the complex ways that materiality, corporeality, politicality, and feminism are

29 Tuck and McKenzie, “Relational Validity and the ‘Where’ of Inquiry,” 635.

30 Parker, “Feminist Forays in the City,” 1337.

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

32 See Sara Ahmed, *Strange Encounters: Embodied Others in Post-Coloniality* (London: Routledge, 2013) and Mary Louise Pratt, “Fieldwork in Common Places,” in *Writing Culture: The Poetics and Politics of Ethnography*, eds. James Clifford and George E. Marcus (Berkeley: University of California Press, 1986), 27–50.

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. Despite this pervading authority, representational methodologies are problematic, because they organize the “abstract qualities”³³ of each contributing facet of the multiple goings-on in the world into reductive schemata. These schematic organizations are “effectively concrete in their becoming related”³⁴. 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 schemata. Representational methods, then, counteract the desire to remain in the mess because they privilege attempts to reduce the “manyness” of things to “the One”³⁵ comprehensive image.

33 Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia*, trans. Robert Hurley, Mark Seem, and Helen R. Lane (Minneapolis: University of Minnesota Press, 1983), 263.

34 Ibid.

35 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (Minneapolis: University of Minnesota Press, 1987), xiii.

By contrast, non-representational methodologies uphold the expansiveness of the world in the research project by tuning into affects, occasions, lights, sounds, and disruptions without collating them into a fixed schema. Non-representational methodologists such as Mimi Sheller and Phillip Vannini propose that non-representational theory “concerns itself with practice, action, and performance”³⁶ 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”³⁷ that might be otherwise regarded through specific representations.

In this way, non-representational methodologies test “the very value of empirical research, the nature of data, the political value of evidence”³⁸ and undermine human exceptionalism through the honing in on different registers and capacities, questioning “the anthropocentric narrative that has underpinned our view

36 Phillip Vannini, “Non-representational Research Methodologies: An Introduction,” in *Non-Representational Methodologies*, ed. Vannini, 4.

37 *Ibid.*, 7.

38 *Ibid.*, 2.



Fig. 4.2. Inefficient mapping, Australian rainforest. Image by the author.

of humans-in-the-world since the enlightenment.”³⁹ Non-representational methodologies are vital,⁴⁰ deeply and critically theoretical, embodied thinking and theorizing 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 4.2 demonstrates how an inefficient mapping tuned in to the non-representational, affective registers in an Australian rain forest.

This mapping connects to place, space, history, and colonization of Aboriginal lands and the multi-species geographies of nonhuman citizens within a specific place. The rain forest 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 rain forest reserve was

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

40 Mimi Sheller, “Vital Methodologies: Live Methods, Mobile Art, and Research-Creation,” in *Non-Representational Methodologies*, ed. Vannini, 130–45.

preserved in perpetuity by a white colonial family. The dense vegetation of the rain forest, 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, while the mapping also attends to the ecological impacts of colonization on the availability of wildlife habitats. The high concentration of wildlife in the rain forest reserve is directly related to the colonial destruction of the wider rain forest in the region.

Non-representational theories and methodologies hold much potential. They offer 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”⁴¹ to the animacies in the world. The researcher and acts

41 Derek P. McCormack, “Devices for Doing Atmospheric Things,” in *Non-Representational Methodologies*, ed. Vannini, 94.

of researching are subsumed and “attuned to the qualities of phenomena.”⁴² 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 inefficient mapping extends beyond the descriptive capacities of language and writing to use artistic strategies and practices, specifically through gestural drawing. The wider field of drawing research has focused on the power of drawing to aid memory⁴³ and drawing beyond an artistic practice.⁴⁴ Although inefficient mappings are a research-based drawing practice, drawing is not the only mode that counts. In the case of inefficient mapping, the material (which

42 Kathleen Stewart, “New England Red,” in *Non-Representational Methodologies*, ed. Vannini, 20.

43 See Michelle Salamon, “Drawing Laboratory: Research Workshops and Outcomes,” *Spark: UAL Creative Teaching and Learning Journal* 3, no. 2 (2018): 131–41 and Jeffrey D. Wammes, Melissa E. Meade, and Myra A. Fernandes, “The Drawing Effect: Evidence for Reliable and Robust Memory Benefits in Free Recall,” *The Quarterly Journal of Experimental Psychology* 69, no. 9 (2016): 1752–76.

44 See Leo Duff and Phil Sawdon, eds., *Drawing: The Purpose* (Bristol: Intellect, 2008) and Stephen Farthing et al., *Drawing: The Network* (London: Chelsea Space, 2007).

include drawing materials and the things in a place/ event); the visual (which include marks, scratches, lines, and smudges); the physical (which include muscles, breaths, steps, and positions, of the mapper and of other beings in the vicinity); and the meta-physical (which include politics, identities, histories, futures, and ideas) are equally important, working in interrelated ways and remaining present in the mappings produced. As stated in chapter 4, 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.”⁴⁵ 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 theorizing on the world, partly

45 Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation,” *Cultural Studies – Critical Methodologies* 15, no. 2 (2015): 137.

speculating on futures and pasts, partly and curiously touching the tenses and registers of the space.

Methodologies that center creative practice (arts-based research and research creation being clear examples) offer methodological possibilities to “resist representation”⁴⁶ and maintain a complex reading of the world. As an example, Karen O’Rourke⁴⁷ sees the labyrinth as a potent trope for addressing the affects of location. O’Rourke 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;
- Artist installations at the Stedelijk Museum, Amsterdam that disorient visitors via “immersive spaces through which the visitor walks”⁴⁸; 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.

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

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

48 *Ibid.*, 105.

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."⁴⁹ 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 navigational 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, historical, 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."⁵⁰ The five elements, which move from the micro to the macro, are effectively linear readings of the city. At the

49 *Ibid.*, 111.

50 *Ibid.*, 113.

micro level they include paths and walkways, and at the macro are city districts: “shopping areas, residential zones and historical city centres.”⁵¹ Creative, practice-based methodologies embrace experimental textual, corporeal, gestural, visual, and 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, and 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 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. Rather, it advances new experimental research methodological protocols, insofar as it entangles the gestural and corporeal with the conceptual, the political, and 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

51 Ibid.

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?”⁵² 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 uncompromised 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.

It is useful at this point to briefly discuss the walking/mapping performances of the Situationists to highlight how other artistic methodological protocols

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

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 (*dérives*), through streets to “decode urban space by moving through it in unexpected ways.”⁵³ A series of experimental walking events were organized in Paris to reassemble street maps, renegotiate the city and represent “the flow of atmospheres”⁵⁴ between different city zones. O’Rourke describes how the Situationists used walking as a methodological mapping protocol to retheorize familiar scapes and notice “things that from force of habit we have forgotten how to see.”⁵⁵ The drifting walks changed the affective register and the habits of movement within a city that foster particular scenes of everyday life. The Situationist *dérives* 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,

53 O’Rourke, *Walking and Mapping*, 7.

54 *Ibid.*, xviii.

55 *Ibid.*, 68.

traveling. The walking/mapping became a protocol that generated unexpected happenings in highly mundane settings. The Situationists' methodological protocols fixed on examining "the influences that shape our experience of walking"⁵⁶ and demonstrate ways to walk through a place and see that place as you walk. The experimental psychogeographical events the Situationists curated worked to realize their urban living manifesto, and they used psychogeographical mapping methodologically to illustrate "the 'socio-logic' of the city"⁵⁷ through their performances, drifting walks, and visual maps.

Psychogeographical mapping remains today 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. It differs to the protocols informing inefficient mapping: where the Situationists focused specifically on composition in their mapping, inefficient mapping uses protocols to attend to the ethics and politics of the urban milieu and its chaotic com-

56 Ibid., xviii.

57 Gert Biesta and Gillian Cowell, "How Is Community Done? Understanding Civic Learning Through Psychogeographic Mapping," *International Journal of Lifelong Education* 31, no. 1 (2012): 52.

ponents. Though mapping protocols are discussed in more detail in chapter 6, “Inefficient Mapping,” the mappings in figures 4.3 and 4.4 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*.

Figures 4.3 and 4.4 exemplify how protocols can map privilege. The 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 limitation of working to these protocols forces experimental responses, 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 protocols forced me to think expansively about how I might map privilege differently within each map. I had to engage deeply with theories and concepts and to work these through mappings that explored different aspects and demonstrations of privilege. This included mapping

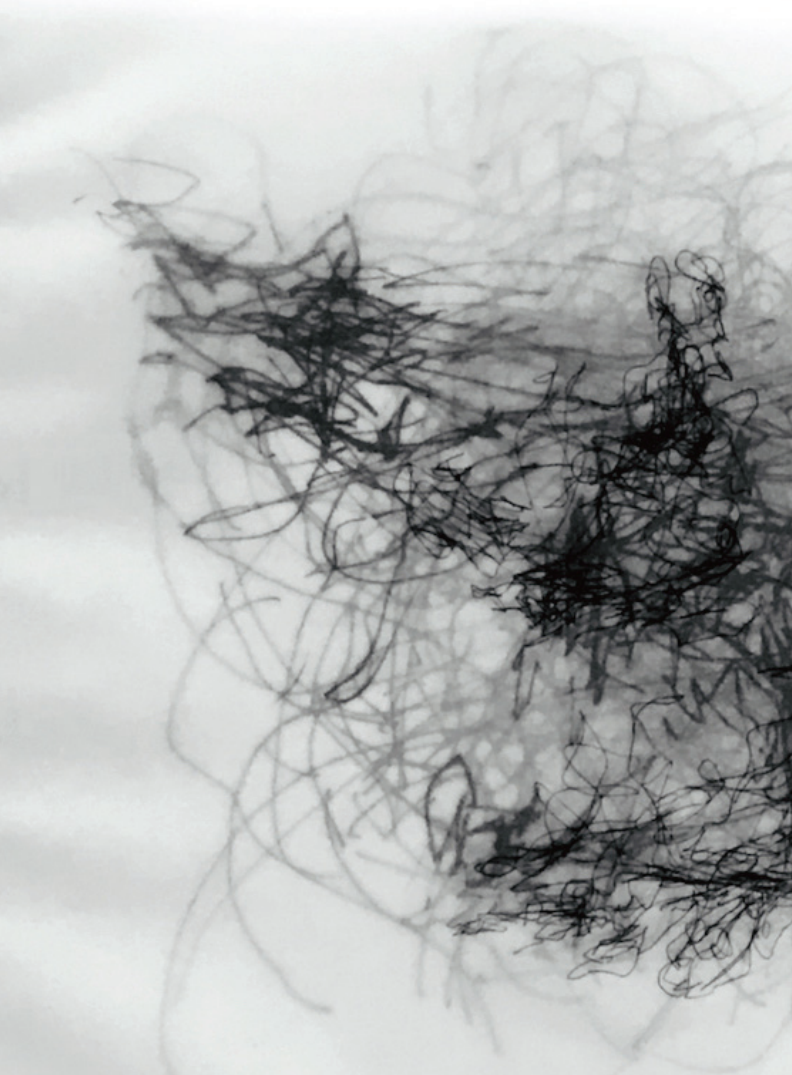
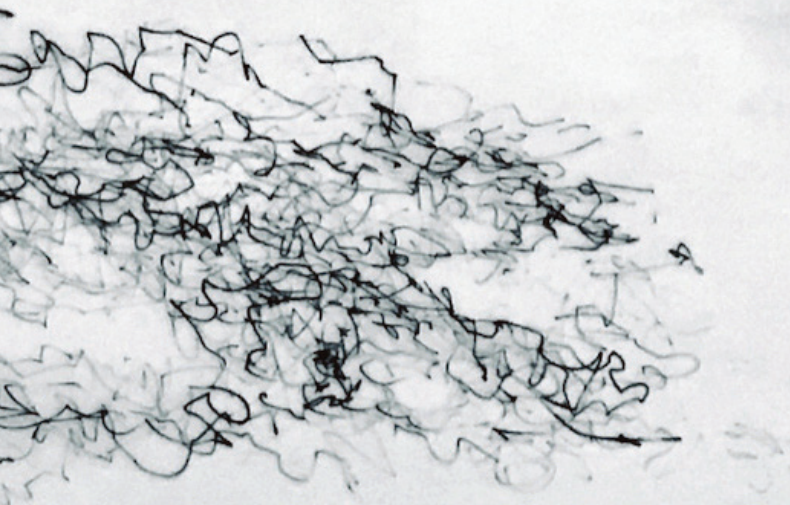


Fig. 4.3. The edges of privilege – 1. Image by the author.





Fig. 4.4. The edges of privilege – 2. Image by the author.



the edges of belongings, parts of the neighborhood, the architecture of the home, and 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 methodological protocols help to challenge conventional notions of research because they trouble ideas of neutrality and invisibility. They reject neutrality and invisibility by being immersed in events and a part of the tensions, activity, and the many details that constitute phenomena. Experimental methodological protocols 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.”⁵⁸ 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

58 Sheller, “Vital Methodologies,” 134.

with which things actually take place.”⁵⁹ 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 have “anarchy at the heart [... using] techniques that tune the anarchical into new modes of knowledge.”⁶⁰ Experimental methodological protocols 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 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.

59 Vannini, “Non-representational Research Methodologies,” 7.

60 Erin Manning, “Against Method,” in *Non-Representational Methodologies*, ed. Vannini, 63.

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 explain that mappings emerge not from standing apart and impartially observing, but that they are immersive and part of the entire phenomenon 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”¹ 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 and regulation, resists maintaining a cool distance

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

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 affirmative because it cherishes and salutes the complex imperfections of life, how lives chaotically intersect in perpetually unpredictable and unrepeatable ways, and how those lives intersect with matter, and with 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 acknowledges 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

drawing,² or movement drawing,³ 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, as this is a simplistic analysis that assumes similarity is generated by the finite possibilities of human bodies wielding particular (similar) materials such as drawing papers, pencils, erasers, and 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 reasoning and conceptual differences between fine art gestural drawings and fine art movement drawings are significant. Yet inefficient mapping differs from both of these and other drawing practices.

The purpose of inefficient mappings is to *map* phenomena rather than to 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? Conventionally, maps are produced (sometimes as a document, sometimes ephemerally

2 Such as the gestural drawings by Julie Mehretu.

3 Such as the “LIVE TRANSMISSION” movement drawings by Morgan O’Hara.

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 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, while being highly functional to the person who created them, because they remind and reconnect to the place where they were created.

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 wayfinding function – even if this functionality is targeted to 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.”⁴ 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

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

to examine non/in/human urban citizenships,⁵ so 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 mappings follow methodological protocols to spark readings and recordings that are immersed and move along within phenomena. These 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

- 5 More on this work is found in Linda Knight, "Playgrounds as Sites of Radical Encounters: A Mapping of Material, Affective, Spatial, and Pedagogical Collisions," in *Pedagogical Matters: New Materialisms and Curriculum Studies*, eds. Nathan Snaza et al. (New York: Peter Lang, 2016), 13–28, and Linda Knight, "Playing: Inefficiently Mapping Human and Inhuman Play in Urban Commonplaces," in *Feminist Research for 21st-Century Childhoods*, ed. Denise Hodgins (London: Bloomsbury, 2019), 139–48.

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. 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 proposes 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.”⁶ This artfully describes how methods and theories take effect together. Research

6 Erin Manning, “Against Method,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 55.

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 apparatuses⁷ 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 regional-ity; some part that is made noticeable by its limit, that “has the character and texture of an edge fashioned into a background composition”⁸ that comprises phenomena. The lines and marks in the inefficient

7 See chapter 4 for a more detailed discussion on Barad’s ideas of apparatus and phenomena.

8 Kathleen Stewart, “Regionality,” *The Geographical Review* 103, no. 2 (2013): 277.

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.

Figure 5.1 exemplifies how edges and regionalities are noted. This map was created as part of my project into non/in/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, and plants. Figure 5.1 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



Fig. 5.1. Inefficient mapping, urban play. Image by the author.



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 was 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 this 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”⁹ of the place at a particular moment in ever-changing phenomena. Figure 5.1 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”¹⁰ quivering with non/in/human animacies.

Povinelli sees how affect is a powerful force for attuning to the world in non-representational ways.¹¹ 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

9 Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation,” *Cultural Studies – Critical Methodologies* 15, no. 2 (2015): 139.

10 Stewart, “Regionality,” 275.

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

moments, in the continuous sequences of energy or potentiality in phenomena, affording phenomena a “tactile compositionality of things”¹² 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.”¹³ Affect helps reveal the topologies caused by lively, transmateral 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 schemata by noticing the partialities of things that might be difficult to describe. It does this by elucidating “the distributed agencies of what’s throwing together and falling apart”¹⁴ across times and spaces, and by

12 Stewart, “Regionality,” 277.

13 Ibid., 278.

14 Kathleen Stewart, “New England Red,” in *Non-Representational Methodologies*, ed. Vannini, 21.

maintaining these distributed movements in the marks that are generated.

Figure 5.2 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 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 billows 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

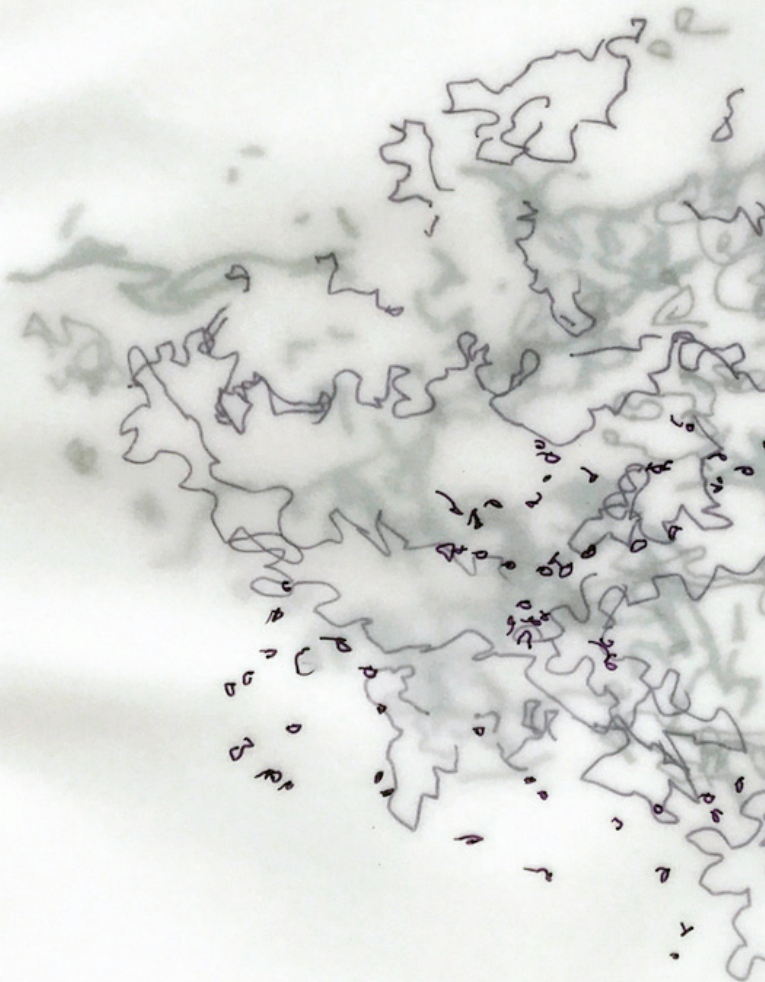
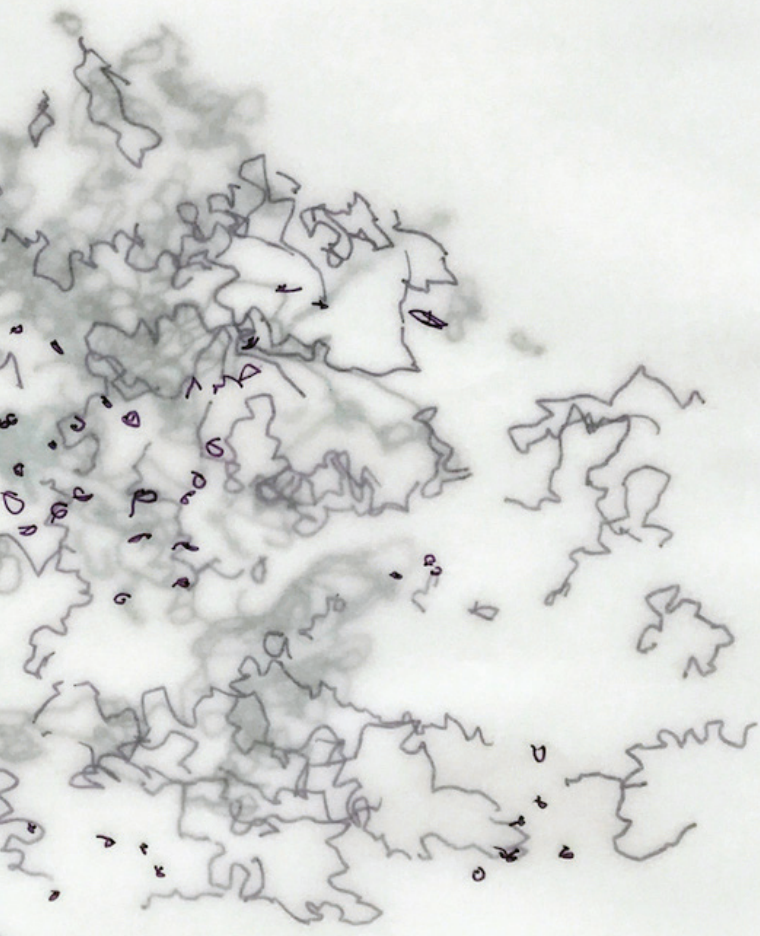


Fig. 5.2. Inefficient mapping, urban water citizens. Image by the author.



when I use pencils. I am mapping the small, incomplete details of some of the non/in/human 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 5.1, 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 non/in/human 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 5.2 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”¹⁵ is the forming of a processual, albeit inefficient, habit of reading space; a methodological protocol for reading phenomena. The inefficient mappings in figure 5.2 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

15 Ibid., 21.

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”¹⁶ 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”¹⁷.

The descriptions provided in figures 5.1 and 5.2 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 methodologic protocols that can be used. These are organized under sub-headings to assist focused experimentation.

16 Manning, *Relationscapes*, 26.

17 Manning, “Against Method,” 60.

Materials

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

Figure 5.3 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 non/in/human 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.¹⁸

Figure 5.4 is a single layer image created using pencil in a cartridge paper sketchbook and Figure 5.5 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

18 I refer here to the cultural theory work of Barthes and his writings on photography and authenticity. See Roland Barthes, *Image Music Text*, trans. Stephen Heath (London: Fontana Press, 1977).

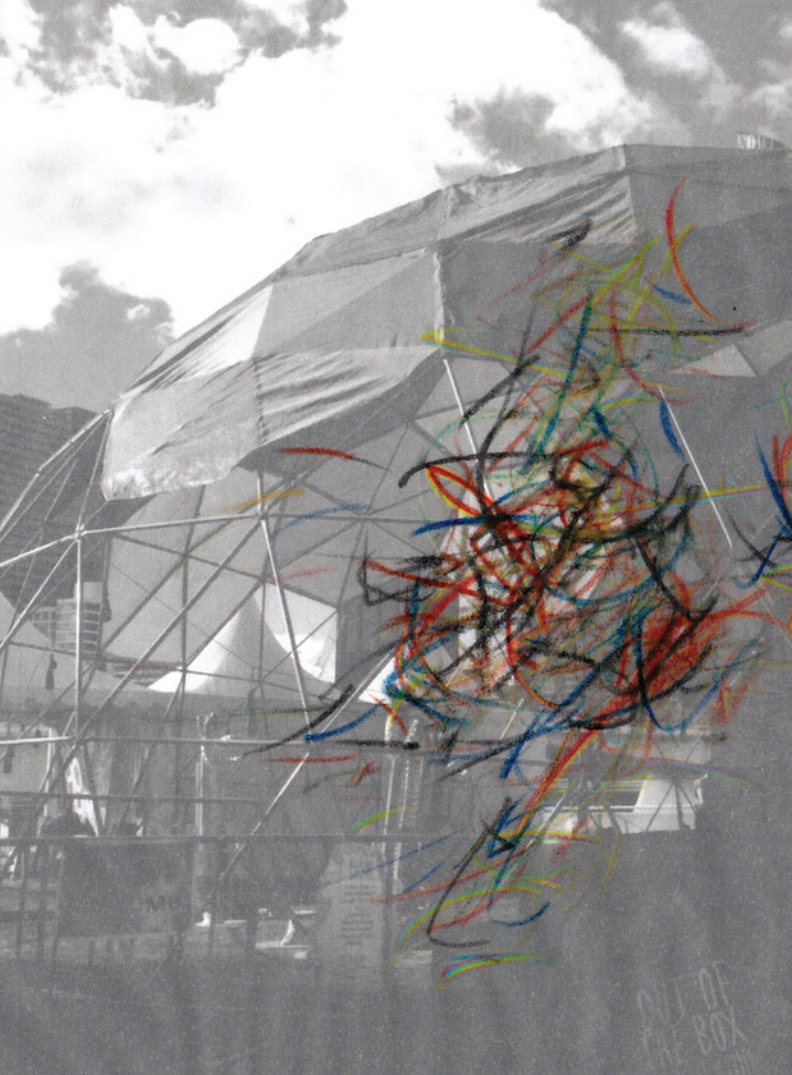


Fig. 5.3. Materials – 1. Image by the author.

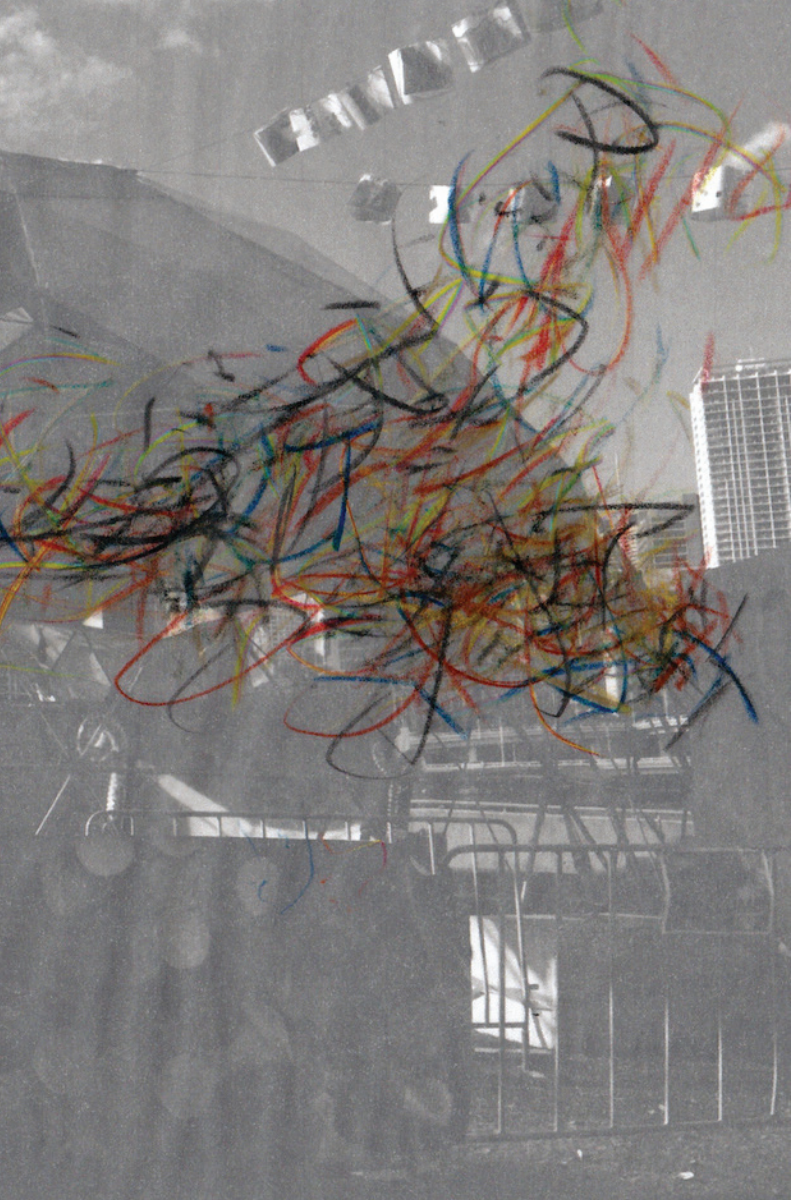




Fig. 5.4. Materials – 2. Image by the author.

app by Tayasui.¹⁹ 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 × 8cm (figure 5.4), and as large as 60cm × 150cm (figure 5.6). In each instance the dimensions and material quality of the mapping surface determine 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 5.5 was created indoors in an air-conditioned room with electric lighting. I sat on a chair, observing the hand movements of a person

19 Tayasui, <https://tayasui.com/about.html>.



Fig. 5.5. Materials - 3. Image by the author.





Fig. 5.6. Materials – 4. Image by the author.



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 5.6 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 the mapping equipment and the map-maker, 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 phenomena. To echo the discussion above, the mark-making produced in inefficient mapping emerges 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 is impacted on by tools and surfaces, as well as the material and affective conditions of the event as described above under “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, which reduces the probability of making tracings disconnected from what is noted and experienced in phenomena. The fist grip and tripod grip enact different relationalities between bodies and materials during an act of drawing, and 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.

The uncommon grip enable 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 demands 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, and 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”²⁰ 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 animacies²¹ of matter that are moving at different scales, even when they are seemingly inert.

20 Phillip Vannini, “Non-representational Research Methodologies,” in *Non-Representational Methodologies*, ed. Vannini, 8.

21 Springgay and Truman consider the vitality of seemingly inert objects such as rocks for building different locational and ethical interrelationalities. See Stephanie Springgay and Sarah E. Truman “Stone Walks: Inhuman Animacies and Queer Archives of Feeling,” *Discourse: Studies in the Cultural Politics of Education* 38, no. 6 (2016): 851–63.

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 5.1 to 5.6. In these examples, the paper-based maps are layered on a light box and photographed. The maps can be layered in different configurations; they can be organized in layers by date or location, or maps created at different times and of different things can be layered together. The same collection of maps can also be layered in different orders to emphasize different aspects.

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, visualizing 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 immanently the place, although they exist as both and neither.

Finally, a major ethico-political rationale for inefficient mapping is to expose the non/in/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 experi-

ence missed by ‘optic’ objectivist representation.”²² 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”²³ through the attention to gestural tracings of movements, edges, and affects across scales and registers. The maps are momentary accounts of the affects and politics of places shaped by colonization 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 designed to “unsettle the systematicity of procedure”²⁴ and the default use of conventional methodologies,

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

23 Stewart, “Regionality,” 276.

24 Vannini, “Non-representational Research Methodologies,” 15.

through acts and practices that question the assertions, assumptions and expectations of certain types of information gathering to be truthful and impartial.

Chaosgraphic 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, addressing also the types of data that inefficient mapping can produce within wider discourses of research norms and expectations. This chapter argues that data produced by inefficient mapping can be interpreted, sorted, organized, managed effectively and can have impact on knowledge and ideas.

The wealth of recent, excellent methodology scholarship¹ considers what data has come to mean

- 1 See, particularly, Hazel Andrews, "Mapping My Way: Map-Making and Analysis in Participant Observation," in *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts

in contemporary research, and informs the following discussion into new possibilities for conceptualizing methods and data. My position on the notion of validation and the truth of data is informed by this scholarship. This chapter argues that inefficient mapping reads the world and produces forms of data that extend knowledge and change our thinking. The next chapter 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

(Basingstoke: Palgrave Macmillan, 2012), 216–36; Norman K. Denzin, “The Death of Data?” *Cultural Studies – Critical Methodologies* 13, no. 4 (2013): 353–56; Brooke A. Hofsess and Jennifer L. Sonenberg, “Enter: Ho/rhizoanalysis,” *Cultural Studies – Critical Methodologies* 13, vol. 4 (2013): 299–308; Erin Manning, “Against Method,” in *Non-Representational Methodologies: Re-Envisioning Research*, ed. Phillip Vannini (New York: Routledge, 2015), 52–71; Elizabeth A. St. Pierre, “A Brief and Personal History of Post Qualitative Research: Toward ‘Post Inquiry,’” *Journal of Curriculum Theorizing* 30, no. 2 (2014): 2–19; Eve Tuck and Marcia McKenzie, “Relational Validity and the ‘Where’ of Inquiry: Place and Land in Qualitative Research,” *Qualitative Inquiry* 21, no. 7 (2015): 633–38; and Philip Vannini, “Non-representational Research Methodologies,” in *Non-Representational Methodologies*, ed. Vannini, 1–18.

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 mentioned in chapter 4, data analysis is a different, analytical aspect of a 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”² 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”³ 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.”⁴

In other words, conventional methods often work at odds with projects that attend to immanence and

2 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, no. 3 (2017): 203.

3 Manning, “Against Method,” 53.

4 Ibid.

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 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.”⁵ This includes the concepts of what research might look like as well as new methodological and datalogical possibilities. Research-creation understands method as an ongoing processual activity that moves along flexibly, adjusting through apparatuses (the consequences, reasons, values and meanings) that add to the movements of/in the relationscape. To revisit the discussion in chapter 4, apparatus becomes part of the relationscape through configuring, reconfiguring, and perpetuating the research act(s) as a “property of the phenomenon.”⁶ Research-creation activates nuanced methodological and datalogical processes intertwined with theories that move and shift with the project. Collectively, research-creation practices

5 Ibid., 54.

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

maintain an ethical closeness to what Springgay and Truman identify as the “particular (in)tensions”⁷ 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 instrumentalized⁸ and given meaning, if ontological conceptions of practice are rethought. For example, an instrumentalist use of maps helped Hazel Andrews overcome difficulties with participant observation, helped her refine post-field ethnographic analysis, and for “understanding my field notes.”⁹ 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, if a researcher were to analyze them for

- 7 Springgay and Truman, “On the Need for Methods beyond Proceduralism,” 203.
- 8 See Stephanie Springgay and Zofia Zaliwska, “Diagrams and Cuts: A Materialist Approach to Research-Creation,” *Cultural Studies – Critical Methodologies* 15, no. 2 (2015): 136–44 for discussion on disrupting common research activity sequences.
- 9 Andrews, “Mapping My Way,” 216.

that purpose. For example, the collection of inefficient mappings and chaosgraphs of non/in/human urban citizens in figures 6.1 and 6.2 can be instrumentally helpful in establishing location information as demonstrated in figure 6.3.

The location 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 methodological practice for sharing locational stories told by elders in order to "smooth boundaries inscribed by modernity [...] and corporate mapping software"¹⁰ that define the land in specific ways. Though an instrumental reading of the mappings and chaosgraphs might be of benefit to some projects, this does not push inefficient mapping to its full datalogical potential, because the maps are being read via interpretations that regard data

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

Fig. 6.1. Chaosgraph 1. Image by the author.



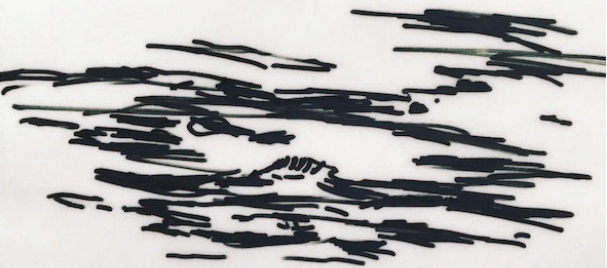
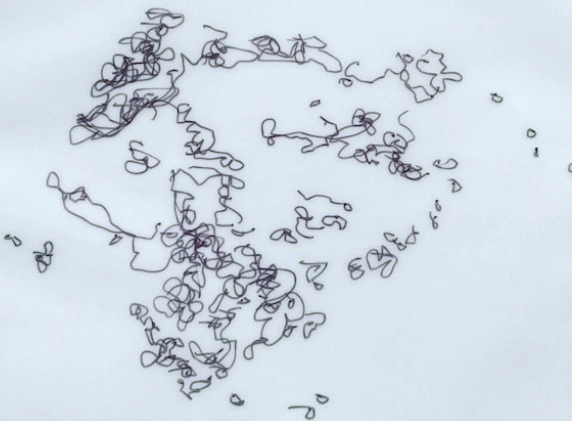
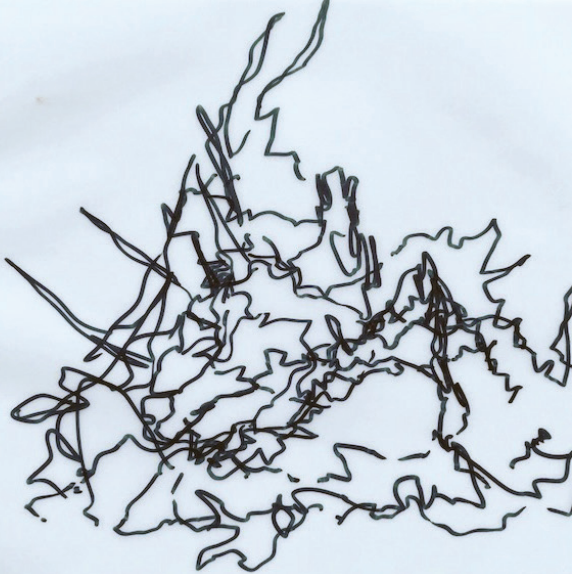


Fig. 6.2. Chaosgraph 2. Image by the author.







<https://openstreetmap.org/copyright> <https://openstreetmap.org>

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<https://www.openstreetmap.org/#map=13/-27.4607/153.0150>

Fig. 6.3. Locations where inefficient mappings took place.

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as “existing phenomena.”¹¹ 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 chaosgraphs, using them as a kind of glorified 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 interrogating 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?”¹² In the case of my research project into posthuman urban citizens, the data featured in figures 6.1 and 6.2 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 is 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

11 Springgay and Truman, “On the Need for Methods beyond Proceduralism,” 206.

12 Hofsess and Sonenberg, “Enter,” 300.

from marks that plot the whereabouts of components in phenomena. Although this data might seem disorganized or opaque, 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, and useful to their creator. They are 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,"¹³ shows that we are living in a long-range onto-epistemological knowledge transition. The datalogical information contained in the inefficient mapping chaosgraphs provide a glimpse of

13 Denzin, "The Death of Data?" 353.

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, 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, but is nevertheless as effective as other data in that it can offer new understandings and knowledge of the world. Tuck and McKenzie¹⁴ suggest how methods such as walks, mental maps, discussions, video, and photography might reveal non-representational aspects including memories, feelings, appearance, sounds, and 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, unset-

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

tle, animate, and reverberate”¹⁵ 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), and by expanding the scope of who/what is mapping (such as collaborations between non/in/humans). Non-representational methodological 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.”¹⁶ In relation to the conceptual aspects of inefficient mapping, over time inefficient mapping

15 Vannini, “Non-representational Research Methodologies,” 5.

16 *Ibid.*, 2.

can be taken up by diverse researchers to enable the methodological 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 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,”¹⁷ but that attune to the complexities of energies across times, tenses, and domains. Inefficient maps ethically wayfind through gesturally marking the movements and edges of non-representational aspects including memories, affects, histories, power,

17 Springgay and Truman, “On the Need for Methods beyond Proceduralism,” 204.

colonialism, and 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 that politically “resist ontological analyses that [...] focus at the micro yet universal level, while ignoring the situated realities of historical and spatial sedimentations of power.”¹⁸ The scholars of methodology included in this chapter articulate that contemporary research maintains its conservatism. New research ontologies have the opportunity to develop methodologies that have different relations to the research project and research projects that can disrupt “the pre-supposition of methods [and] a reli-

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

once on data modelled on knowability and visibility.”¹⁹ 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.”²⁰

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, and not so much tiers rather than pockets and pools. Inefficient mapping chaosgraphs produce data that honors immanent, speculative, and critical theories that resist disguising inequities and power systems. The oblique nature and appearance of inefficient mapping chaotic data is a resistance tactic that acknowledges “data and evidence are never morally or ethically neutral”²¹ and the ways in which easily-accessible data produces specific forms of information that uphold settler colonial power dynamics, privileges, and hierarchies.

19 Springgay and Truman, “On the Need for Methods beyond Proceduralism,” 203.

20 Manning, “Against Method,” 54.

21 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”¹ of things in phenomena. As discussed in chapter 6, recognizing that this mapping is inefficient not only connects the methodological 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 generates wayfinding documents and practices that differ to colonial practices and the cartographic maps produced. The

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

chapter then explores how cultural relations with the land engage different forms of wayfinding. 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 articulates that an ethics of care is not about perpetuating “normative moral obligations”² but about the efforts of thinking care-fully about “knowing and thinking with more than human worlds.”³ The ethics of care 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 prompts are a political caring, because the mappings aim to facilitate an ethical wayfinding that

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

3 *Ibid.*, 12.

is immersed in the “collective nature of affective life.”⁴ The act of mapping inefficiently takes place with and on geographies, places, spaces, and 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 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”⁵ which center 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.”⁶ This call for a decentralized methodology is echoed by Puig de la Bellacasa.

Immersive (and, in the case of inefficient mapping, performative, corporeal, moving, and creative) processes enhance “relations with objects, things, and other than human animals, organisms, and forms

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

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

6 Melissa Atkinson-Graham et al., “Care in Context: Becoming an STS Researcher,” *Social Studies of Science* 45, no. 5 (2015): 739.

as political in their very ontology,”⁷ rather than the world operating as a neutral backdrop to human life. Methodologically, what it is ethically to care is to foreground how processes such as mapping can disrupt common theories 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, and 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 establish records of place replete with its histories. This is a vital wayfinding practice, because “maintaining these spatial relationships is one of the most impor-

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

tant components of identity”⁸ 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”⁹ with the world. In “Stone Walks,” Springgay and Truman walked to, between, and among rocks as a way of interrogating the usual ways rocks are positioned. Springgay and Truman consider the inhuman animacy of rocks and how this inhuman animacy helps us to “learn with the world rather than about it.”¹⁰ In these wayfinding examples the politics of human exceptionalism, race, feminism, colonization, industrialization, and capitalism become affective registers¹¹ through which immanent and speculative

- 8 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.
- 9 Stephanie Springgay and Sarah E. Truman “Stone Walks: Inhuman Animacies and Queer Archives of Feeling,” *Discourse: Studies in the Cultural Politics of Education* 38, no. 6 (2016): 851.
- 10 Springgay and Truman “Stone Walks,” 862.
- 11 Kathleen Stewart, “Regionality,” *The Geographical Review* 103, no. 2 (2013): 275–84.

theories are interpreted, and how phenomena are read and mapped.

Much contemporary feminist scholarship resists the tendency toward using apolitical research practices that perpetuate settler colonial privilege.¹² Preferences are now for processes that navigate through the thick of things and commit to an “ethics that is accountable to a material world.”¹³ The move by feminist research toward accounting for marginal

- 12 See, in particular Sara Ahmed, *Strange Encounters: Embodied Others in Post-Coloniality* (London: Routledge, 2013); Stacy Alaimo, *Exposed: Environmental Politics and Pleasures in Posthuman Times* (Minneapolis: University of Minnesota Press, 2016); Puig de la Bellacasa, *Matters of Care*; Mimi Sheller, “Vital Methodologies: Live Methods, Mobile Art, and Research-Creation,” in *Non-Representational Methodologies*, ed. Vannini, 130–45; 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, no. 3 (2017): 203–14; Eve Tuck and Marcia McKenzie, *Place in Research: Theory, Methodology, and Methods* (London: Routledge, 2015); and Kathryn Yusoff, “Insensible Worlds: Postrelational Ethics, Indeterminacy, and the (K)notes of Relating,” *Environment and Planning D: Society and Space* 31 (2013): 208–26.
- 13 Springgay and Truman, “On the Need for Methods beyond Proceduralism,” 206.

non/in/human “histories as much as futures”¹⁴ 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 outward 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.”¹⁵ Similarly, inefficient mapping activates a transformative ethics through a technological, speculative, and immanent exploration of the “implicit effects that encounters between human and non-human bodies can generate”¹⁶ 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.”¹⁷

14 Sheller, “Vital Methodologies,” 141.

15 Puig de la Bellacasa, *Matters of Care*, 67.

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

17 Phillip Vannini, “Non-representational Research Methodologies,” in *Non-Representational Methodologies*, ed. Vannini, 3.

What this book proposes is that 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. Inefficiently mapping is not just a human wandering about in spaces and taking notice of things to draw them. As discussed in chapter 2, 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, keeping that central¹⁸ during the process of

18 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

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 commitment¹⁹ 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

detailed discussion into the ways that non-indigenous and Indigenous cartographers produce counter-maps.

19 Puig de la Bellacasa, *Matters of Care*.

relations”²⁰ in the multitudinous activities occurring in phenomena. 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.

Figure 7.1 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

20 *Ibid.*, 129.

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. Though I am at the museum to attend the event, 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. Although the regulation of trade generated a lot of income for the government before the introduction of income tax, the regulation of immigration was designed specifically to enact the notorious "White Australia Policy,"²¹ a policy that openly prevented anyone of non-white, non-English speaking background from entering Australia. Iterations of this policy continued to have a presence in Australian immigration laws until 1970s.

This backstory is important because it provides some indication of the multitudes of things happening

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

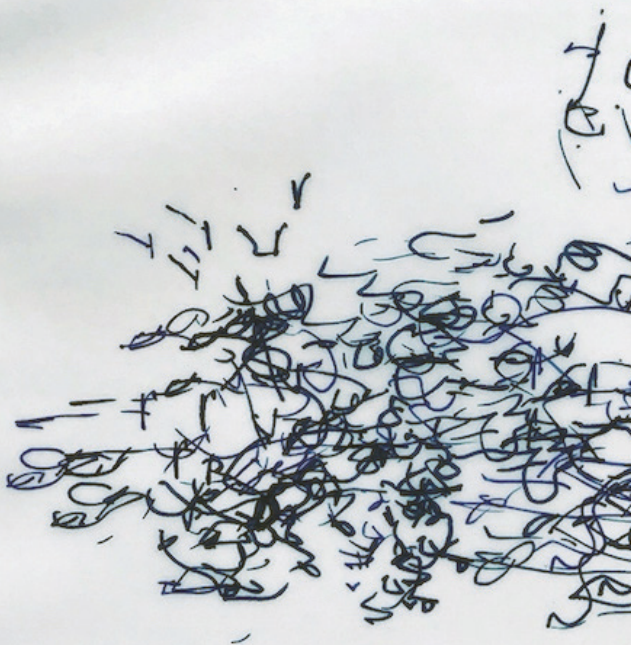
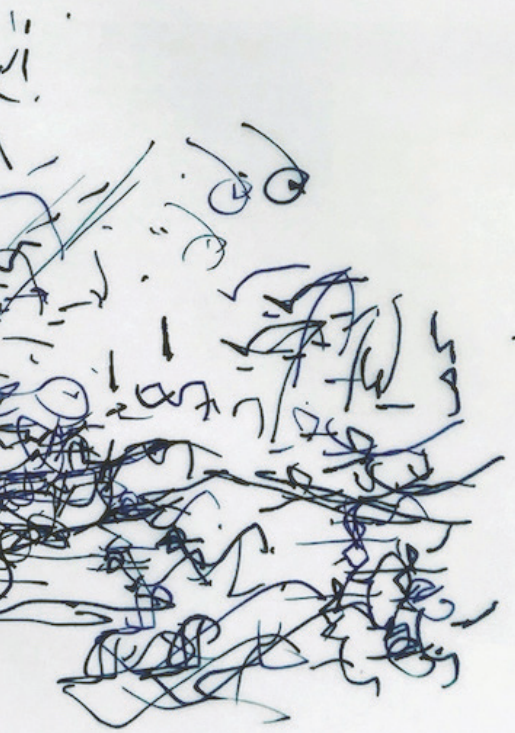


Fig. 7.1. Inefficient mapping, Immigration Museum. Image by the author.



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across scales and registers in that building 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.

The example in figure 7.1 shows how a cartographer might 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 untimely dimensions²² of the relational and interactive agglomerations of things in events. Chaotic, inefficient mapping is an ethically 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 methodological protocol is a political, ethical, and gestural commitment to thinking differently about reading the world.

Although the maps do not navigate space in the ways that conventional wayfinding maps do, they can navigate through non-representational means such as through affects, politics, memories, etc. 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

22 Yusoff, "Insensible Worlds."

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, and 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.”²³ The task of wayfinding becomes complicated because things are in movement. Not just the physical or material movement of buildings

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

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.

Karen O'Rourke expands 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"²⁴ 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)."²⁵ This locational interrelationality is essential to life, being a practice, a spirituality, a relational corporality,

24 Ibid., 119.

25 Brian Martin, "Immaterial Land," in *Carnal Knowledge: Towards a 'New Materialism' through the Arts*, eds. Elizabeth Barrett and Barbara Bolt (London: I.B. Tauris, 2013), 187.

and “a dynamic ontology that exists within Indigenous cultural ideology.”²⁶ 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’.”²⁷

In the 1970s, 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

26 *Ibid.*, 185.

27 *Ibid.*

a hostile and featureless environment. I use Peasley's text here not because I prefer non-indigenous mapping/wayfinding scholarship over Aboriginal/Indigenous/First Nations scholarship, such as the excellent work by Abenaki scholar Lisa Brooks,²⁸ Annita Lucchesi (Southern Cheyenne) and Abigail Echo-Hawk (Pawnee),²⁹ and Krim Benterrak, Stephen Muecke, and Paddy Roe (Goolarabooloo),³⁰ 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 centered, even though they are a recent invention compared to

28 Lisa Brooks, *The Common Pot: The Recovery of Native Space in the Northeast* (Minneapolis: University of Minnesota Press, 2008).

29 Annita Lucchesi and Abigail Echo-Hawk, *Missing and Murdered Indigenous Women and Girls: A Snapshot of Data from 71 Urban Cities in the United States*, Report of the Urban Indian Health Institute, 2019, <https://www.uihi.org/resources/missing-and-murdered-indigenous-women-girls/>.

30 Krim Benterrak, Stephen Muecke, and Paddy Roe, *Reading the Country: Introduction to Nomadology* (Melbourne: re.press, 2014).

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 and 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.”³¹ 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,”³² that are perfected because recollections are connections to the histories of the land and are central to maintaining “core

31 W.J. Peasley, *The Last of the Nomads* (Fremantle: Fremantle Press, 1983), 34–35.

32 Paul Long and Jez Collins, “Mapping the Soundscapes of Popular Music Heritage,” in *Mapping Cultures: Place, Practice, Performance*, ed. Les Roberts (Basingstoke: Palgrave Macmillan, 2012), 150.

aspects of identity”³³ 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”³⁴ 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 one orient across unfamiliar territory, but by initiating familiarity, by being located in the place, feeling the air 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

33 Eades, *Maps and Memes*, 19.

34 Long and Collins, “Mapping the Soundscapes of Popular Music Heritage,” 150.

the land Mudjon replied he had “walked the country many times in the past.”³⁵ 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.”³⁶ 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.”³⁷ What Peasley failed to understand is 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

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

36 *Ibid.*, 91.

37 Eades, *Maps and Memes*, 110.

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 7.2 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 is the site of a freshwater eel Dreaming story.³⁸ Although originally, the creek wove its way through dense old forest, 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

38 For a detailed timeline of Fish Creek, The Gap QLD, see “History of Fish Creek,” *Tiki-Toki*, <https://www.tiki-toki.com/timeline/entry/232182/History-of-Fish-Creek/>.



Fig. 7.2. Inefficient mapping, Fish Creek.. Image by the author.



different weather conditions. I became familiar not only with the topology of these stretches, but also with the occurrences of things and beings there, and 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.

Ethical wayfinding and being-with place is 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.”³⁹ 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

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

unlock the secrets of barren earth which performs a backdrop of his mammoth trek. Indigenous scholarship is vital in dislodging the dominance 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, 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"⁴⁰ 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 inter-relations, 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

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

colonial forces⁴¹ can possess different meanings for those having different connections and relations 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”⁴² while being mindful of privilege, subjectivity, and the contributions we make to the politics of the world. With this in mind, inefficient mappings can perform wayfinding functions in several ways.

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 before, so you might know how to navigate it, or it might be a place you have never been to. 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, and environmental information. This knowledge brings awareness of phenomena through non-representational affects and registers,

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

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

and this makes wayfinding a deeply considered and 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, and 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, meanings, 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, 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 methodological protocol.

How do I 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, geontological 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. Such mapping works closely with immanent and speculative theories, attuning to non-representational affects and energies of place, space, and event. The inefficient mapping methodological protocol thinks-with theories of matter, affect, geontology, and care to read phenomena within theoretical frames that include descriptions of the matter of phenomena,¹ the tenses of phenomena,²

- 1 Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007).
- 2 Erin Manning, *Relation-scapes: Movement, Art, Philosophy* (Cambridge: MIT Press, 2008) and Erin Manning, *The Minor Gesture* (Durham: Duke University Press, 2016).

and the ontologies of phenomena.³ This book has described 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 infographic 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

- 3 Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010); Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis: University of Minnesota Press, 2017); Elizabeth A. Povinelli, *Economies of Abandonment: Social Belonging and Endurance in Late Liberalism* (Durham: Duke University Press, 2011); Elizabeth A. Povinelli, *Geontologies: A Requiem to Late Liberalism* (Durham: Duke University Press, 2016); and Eve Tuck and Marcia McKenzie, "Relational Validity and the 'Where' of Inquiry: Place and Land in Qualitative Research," *Qualitative Inquiry* 21, no. 7 (2015): 633–38.

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 non/in/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 and this says more about normative expectations around research, and around art, than about the potential meaning of inefficient maps. Inefficient mapping can be presented as art. They can be presented as research. In each instance they can help to make the world more and differently visible.

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