

W H A K A A R O P A P A

Anthropos Design
&
Decolonising Metaphysics

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W H A K A A R O P A P A

Abstract

Seemingly each week, or even every day, headlines draw attention to the incremental yet radical changes occurring as a result of cultural practices that bear witness to the Anthropocene, as a time in which human activity becomes a dominant influence on Earth. Indexes of global temperatures register warming patterns. A slow massing of synthetic toxins – plastics, synthetic oestrogens, dioxins – permeate into the geosphere. In the last few years life-lines of birds, frogs, species 'x' are ended, swept up in the sixth mass extinction event, a globalised radical failing in life's vitality, now in process. Each of these lives whakapapa to an originary moment, perhaps some 3.8 billion years ago, when biological life first arose out of the geological. This emergence is a story told from within Western science, its disciplinary bindings and metaphysics. Indigenous peoples don't segment bios and geos, earth and sentience. My Māori whakapapa does not tell the story of Western science. Though, Western science, pūtaiao, is braided into my whakapapa. My research orientates to questions of design: whakaahua. What is whakaahua/whakaahuatia – transformation – within Anthropocenic crisis? How is the Anthropocene a crisis of and in design? This design research occurs at a time when life is threatened on a planetary scale by anthropogenic climate change, habitat destruction and pollution at global and cellular scales. This research asks what it means to live in such times. In the lifetime of this text, temporalising of life – here, now, in 2018 – we witness the effects of manifold crises, summarily those of life-wellbeing, mauri-ora.

Hence, the key concern of this thesis is the Anthropocene. But what can this name if it is not a universal category that subsumes a panoply of crises, of critical dangers? Is it not a universal, and for all that a concept that transcends the multiple milieus within which life is? We cannot separate these difficult questions (and hence the drift of this thesis) from the legacies of Anthropos itself, of the human as that entity considered as rational animal, animal with logos, with language, that being understood as measure. For all the supposed radicality of today's vitalist and materialist thinking, the human remains essentially un-thought. For this reason, the Anthropocene remains, as a Western construct, transcendence at the very heart of life thought as immanent field. The task of this thesis is to dislodge the hegemony of an essentially un-thought Anthropos. But from where?

I aim at a braided composition. One strand aims to explore an earth-oriented ontological terrain particular to Aotearoa New Zealand and, from this position, to engage internationally with other geo-logical thinking. Geo-logical analytics for existence disclose sundry ways in which our cultural practices are harming mauri understood as essential life-vitality. The concept of the Anthropocene is a vital marker in this territory. The Anthropocene signals the extent, reach and diversity of ontologically-mediated human-led dislocations in the life-field. What, then, might constitute counter-practices to this temporal threshold? Such questioning is central to a second strand of this work that tests out design, through critical everyday practices that aim at design for life-wellbeing. Practice and ontology are imbricated, as river and river-banks shape one another. This is an exploration of ontology as design thinking and design process – whakapapa as whakaahua and as whakaaro of whakaahuatia. My questions become: How might we counter-current Anthropocenic practices? How might we experiment, design, and build more viable futures? How might ontological difference be instantiated in built form and in the more intangible but formative conditions of design thinking itself? How might design thinking come to be understood as and through an ethical framework? Might Indigenous-Māori ontologies, as decolonising metaphysics, design a paradigmatic shift from predominant Euro-American cultural-material frameworks? Such is the questioning of the urban material practices within this research.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Amanda Monehu Yates

A c k n o w l e d g e m e n t s

Ko Tiheia te maunga,
Ko te Waimimi-o-Pekēhaua te awa
Ko Te Rotorua-nui-a-Kahumatamomoe te roto,
Ko Te Arawa te waka,
Ko Ngāti Rangiwewehi te iwi,
Ko te Awahou te papa kāinga,
Ko Tarimano te marae.

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Chapter 1

Ko Tiheia Te Maunga

INTRODUCTION

Arctic Warming: scientists alarmed by 'crazy' temperature rises. Record warmth in the Arctic this month could yet prove to be a freak occurrence, but experts warn the warming event is unprecedented. An alarming heatwave in the sunless winter Arctic is causing blizzards in Europe and forcing scientists to reconsider even their most pessimistic forecasts of climate change. Although it could yet prove to be a freak event, the primary concern is that global warming is eroding the polar vortex, the powerful winds that once insulated the frozen north.¹

Sixth Mass Extinction: The era of 'biological annihilation'. Many Scientists say it's abundantly clear that Earth is entering its sixth mass-extinction event, meaning three-quarters of all species could disappear in the coming centuries.²

The Anthropocene Epoch: scientists declare dawn of human-influenced age. Humanity's impact of the Earth is now so profound that a new geological epoch - the Anthropocene - needs to be declared, according to an official expert group who presented the

1 *The Guardian International Edition*, February 27, 2018: <https://www.theguardian.com/environment/2018/feb/26/antarcticas-king-penguins-could-disappear-by-the-end-of-the-century>

2 CNN, July 11, 2017: <https://edition.cnn.com/2017/07/11/world/sutter-mass-extinction-ceballos-study/index.html>

recommendation to the International Geological Congress in Cape Town on Monday.³

New Zealand signs up to anti-plastic pledge. New Zealand is turning the tide on the production and use of plastic to help clean up the oceans.⁴

For example, here at home I say, 'Ko Tiheia te maunga, ko te Mimi o Pekehaua te awa, ko Tarimano te papa tapu, ko Ngati Rangiwewehi te iwi. Tiheia, is my point of focus on the land, Te Mimi o Pekehaua is the river, Tarimano is my sacred marae and Ngati Rangiwewehi is my tribal nation'.⁵

Seemingly each week, or even every day, headlines draw attention to the incremental yet radical changes occurring as a result of cultural practices that bear witness to the Anthropocene, as a time in which human activity becomes a dominant influence on Earth. Indexes of global temperatures register warming patterns. A slow massing of synthetic toxins – plastics, synthetic oestrogens, dioxins – permeate into the geosphere. In the last few years life-lines of birds, frogs, species 'x' are ended, swept up in the sixth mass extinction event, a globalised radical failing in life's vitality, now in process. Each of these lives whakapapa to an originary moment, perhaps some 3.8 billion years ago, when biological life first arose out of the geological. This emergence is a story told from within Western science, its disciplinary bindings and metaphysics. Indigenous peoples don't segment bios and geos, earth and sentience. My Māori whakapapa does not tell the story of Western science. Though, Western science, pūtaiao, is *braided* into my whakapapa. My research orientates to questions of design: whakaahua. What is whakaahua/whakaahuatia – transformation – within Anthropocenic crisis? How is the Anthropocene a crisis of and in design? And so, this design research occurs at a time when life is threatened on a planetary scale by anthropogenic climate change,

3 *The Guardian International Edition*, August 29, 2016: <https://www.theguardian.com/environment/2016/aug/29/declare-anthropocene-epoch-experts-urge-geological-congress-human-impact-earth>

4 Radio New Zealand, March 13, 2018: <https://www.radionz.co.nz/news/national/352397/nz-signs-up-to-anti-plastic-pledge>

5 Te Ururoa Flavell, Māori Party member of parliament: <http://www.voxy.co.nz/politics/speech-nz-institute-surveyors-hui-maori-land-te-ururoa-flavell/5/81861>

habitat destruction and pollution at global and cellular scales. This research asks what it means to live in such a time. In the lifetime of this text, temporalising of life – here, now, in 2018 – we witness the effects of manifold crises, summarily those of life-wellbeing, mauri-ora.

New Earth Politics: Nihil Unbound

This subheading combines the titles to two books, either of which could well have defined a ground for this research, though neither did.⁶ They are two poles or two extremities between which my research moves, or strolls. When facing towards one, I am thinking (of) the other. Hence an ambivalence, an indeterminacy, a hesitancy, a vacillation. There is a third 'ground' that draws me to it, and that draws me away from either of these two. That third ground is Indigenous-Māori whakaaro, ways of thinking – thinking that is feeling – existence as Māori. This 'third', then, is decolonising and asks of the stroll between the initial two to take on a particular kind of 'blindness', a positive 'blindness' we infer when moving from the privilege given in Western metaphysics, Western thinking, to the scopic, to vision, to clarity and enlightenment, to a ground in a subject-substance as that being whose being is clarity of thought: Cogito. Māori have my ear, my attuning. My languages are living beings. They don't lose me. They find me: My whakapapa, my mauri, my well-being, mauri-ora, my entanglement in all things, all times, all peoples, all becomings. My aim in this Introduction to the thesis, my 'point of focus on the land' (Ko Tiheia Te Maunga), is to initially say something about those two publications, *New Earth Politics: Essays from the Anthropocene*, and *Nihil Unbound: Enlightenment and Extinction*, to characterise their drifts, directions, key concerns as, in part and potentially, my own. I then want to characterise why, in Bartleby fashion, I preferred not to take them up and how a deep concern with Indigenous-Māori thinking took me in unexpected directions, tugging at all times at my desire to feel at home in colonising metaphysics, even in complex and sophisticated attacks on our Western thinking, that yet (or still) evade, avoid or

6 The two books are: Simon Nicholson and Sikina Jinnah (Eds.), *New Earth Politics: Essays from the Anthropocene* (Cambridge, MA: The M.I.T. Press, 2016) and Ray Brassier, *Nihil Unbound: Enlightenment and Extinction* (London & New York: Palgrave Macmillan, 2007).

simply don't hear Te Reo Māori.⁷ I don't criticise the editors of New Earth Politics or the author of *Nihil Unbound* for not being enough Māori. How could they be? Why would they be? Though I do constantly ask what for me it means to be one who decolonises metaphysics. What prospects are afforded, what vantage or horizon is revealed when that decolonising happens?

Nihil Unbound was published eleven years ago, in 2007, at a time when, it seemed, Western thinking had some seismic shocks that scuttled the previous forty years of post-phenomenological endeavor. Its author, Ray Brassier, was labeled by a new notion. He was a 'speculative realist' (even if Brassier himself has refused the mantle). Realism returns after two centuries of inventing and exiting from Transcendental Idealism. The focus for Brassier is the young French philosopher, Quentin Meillassoux, who made a deceptively easy 'observation' that put the tradition into a tail-spin.⁸ That 'observation' concerns the extinction of the species we call human. Science determines relatively precisely the date of an arch fossil, an entity that did exist on this planet prior to the existence of thinking, or what philosophy, especially in its phenomenological varieties, calls thinking. Meillassoux calls it 'correlationism' as in the correlation between thinking and being. Existence is essentially understood from out of this correlation, even in radical versions that have shattered a thinking of subject and object correlations. Meillassoux's challenge is to how we 'know' when what we supposedly 'know' existed before thought, and will come to exist after thought. Hence, the subtitle to Brassier's book: *Enlightenment and Extinction*. This is not Anthropocenic crisis. Brassier is not a deep ecologist concerned about planetary wellbeing. Well, I cannot say he is indifferent to Anthropocenic crisis, though it does not register in *Nihil Unbound*. The extinctions he is discussing are a little more catastrophic and in some ways a little more 'certain' even if a little more 'distant': the collision of the

7 The reference to 'Bartleby' is to a now celebrated story by Herman Melville, "Bartleby the Scrivener: A Story of Wall Street" first published in 1853. Bartleby's disposition was such that he professed to 'prefer not to' when asked to undertake just about anything. This disposition, one of a potential *to not do* what one is yet capable of doing, has become celebrated by a range of twentieth-century theorists. See, for example, Giorgio Agamben, "Bartleby, or on Contingency," in *Potentialities*, trans. D. Heller-Roazen. (Stanford, CA: Stanford University Press, 1999) 243-274.

8 See Quentin Meillassoux, *After Finitude: An Essay on the Necessity of Contingency*, trans. R. Brassier (London & New York: Continuum, 2008).

Milky Way and the Andromeda Galaxy, or the extinction of our sun in 4.5 billion years. Yet, the book is pertinent for giving perspective to *Anthropos* as a species whose ascendancy may be thought of as random rather than destiny. Brassier approaches this in two ways. One is, for example, by discussing J.F. Lyotard on the solar catastrophe:

With the disappearance of earth, thought will have stopped – leaving that disappearance absolutely unthought of. It's the horizon itself that will be abolished and, with its disappearance, [the phenomenologist's] transcendence in immanence as well. If, as a limit, death really is what escapes and is deferred and as a result what thought has to deal with, right from the beginning – this death is still only the life of our minds. But the death of the sun is a death of mind, because it is the death of death as the life of the mind.⁹

We can recognize with Lyotard the crisis that extinction presents for correlationism as essential relation of being and thinking. Indeed, Lyotard's speculation goes in the direction of separating being and thinking entirely such that thinking becomes technology capable of surviving. The disappearance of 'life', then, can be survived by machine 'thinking'. Though, Brassier also goes in another direction, that of life living its abundance extraneous to the demise of *Anthropos*. He cites Stephen Jay Gould on the multiplicity of the living:

Thus, Gould argues, although life's mean complexity may have increased, as represented by the development of increasingly sophisticated multicellular organisms, its modal complexity, as exemplified by bacteria, has remained more or less constant. Yet, the latter outstrip the former not only in terms of frequency of occurrence – total bacterial biomass continues to exceed that of all other life combined – but also in terms of variation. Thus, out of the three most fundamental evolutionary domains, Bacteria, Archea, and Eucarya, two consist entirely of prokaryotes, which are simple unicellular organisms, devoid of nuclei, mitochondria, and chloroplasts. Moreover, the third domain, which is that of the eukaryotes (cells that do possess nuclei, chromosomes, etc.) comprises 13 kingdoms, among which are the three kingdoms that include all multicellular life – fungi, plants, and animals.¹⁰

9 Ray Brassier, *Nihil Unbound: Enlightenment and Extinction*, 225.

10 Brassier, *Nihil Unbound*, 227.

There are 23 kingdoms of unicellular life and three kingdoms of multicellular life, with for example, "as much genetic diversity between cyanobacteria and flavobacteria as between a carrot and a zebra."¹¹ Brassier thus emphasises, in his reading of Gould, that this 'tail' of multicellular ascendancy has been successively occupied by trilobites, dinosaurs, and *Homo Sapiens*. They are completely different species who have, in Brassier's words, "stumbled into this position one after the other."¹² This is not adaptive prowess but blind evolutionary history. The planet's living biomass would hardly miss this current ascendant. Hence, we recognise a relative extinction that may include, for example in Anthropocenic crisis, a great many multicellular organisms. However, much of the planet's 23 kingdoms of unicellular existents may well have a survival 'strategy'. There is, also, an absolute extinction of the planet, of the solar system, of the constellation of suns forming our galaxy, of the universe itself. Brassier's philosophical engagements with extinction open to new grounds for philosophy in speculative realism and object-oriented ontology, ways of conceiving of existents without this particular being, the one who supposedly thinks being.

If *Nihil Unbound* develops complex philosophical speculations on a post-Nietzschean nihilism, *New Earth Politics: Essays from the Anthropocene* is exceedingly more 'grounded' in survival rather than extinction. Except for the fact that the 'transcendental' is a target of *Nihil Unbound*, one could characterise *New Earth Politics* as an empirical correlate to Brassier's transcendentalism (or Transcendental Realism). Published in 2016, some nine years after *Nihil Unbound*, its subtitle, *Essays from the Anthropocene*, has a pressing inclination, a *clinamen*. This collection of writings comes to you *from* somewhere extant, from a milieu in existence, the Anthropocene. These are not writings *against* or *to* or *for* an anticipated Anthropocene, not writings to ward off, to curtail to refuse or get out of the Anthropocene. They are from! The 'new' earth is not a recovered patient, the earth after we do our work in eradicating Anthropocenic crisis. The *new* is this Anthropocenic earth. The questions posed in this collection concern political acumen, responsibility and approaches to working with and within the critical realities of the Anthropocenic. Interestingly, the book is dedicated to the children of the co-editors, Simon Nicholson and Sikina Jinnah, that they may inherit the

11 Brassier, *Nihil Unbound*, 227.

12 Brassier, *Nihil Unbound*, 227.

"New earth."¹³ There is no 4.5 billion-year prognosis on solar catastrophe, nor a *fait accompli* that *Homo Sapiens* will be dislodged from the summit. There is, though, recognition of human agency in destruction of the planet and multiple-thought approaches to addressing this. The book is in eight sections, with two contributions to each section. Each of the section contributions has a small confrontation with the other, thus establishing ongoing positional differences that open to the necessary pluralisms of strategic and tactical practices of eco-sustainability. The book structure opens ongoing reflexive commentary by contributors on the contributions of others, thus establishing a networking conversing, developing nuanced differences of approach, rather than defining a unifying position on things. Nicholson and Jinnah sum up the book's directions in their Introduction, "Living on a New Earth":

This book assembles prominent scholars and practitioners in the field of global environmental politics to consider the ecological and political realities of life on the New Earth. We asked contributors to give particular thought to the relationship between traditional scholarly activities and the practical work of generating social and political change. The resulting chapters range from meditations on the social and political drivers of environmental harm to musings on the state of environmental pedagogy, from analysis of the links between the environment and geopolitics to cutting-edge thinking about the future of environmental social movements, and from insights on the struggle to build more appropriate international environmental institutions to examination of the imperative to craft more compelling narratives in the service of global environmental action.¹⁴

Well, these sixteen essays that cover that amount of ground seem to be well aligned to establish something like a grounding from which to launch a project such as mine that questions design as Anthropocenic crisis. What are my reservations? One obvious one was an omission from the collective themes broached in the book, a surprising omission, noted by one of the reviewers of the book, the environmentalist, Fariborz Zelli. In an otherwise highly favourable review, Zelli notes: "Of concern, however, are the chapters that are not there. Since Nicholson and Jinnah based their selection on key themes in current scholarship,

13 The dedication reads: "For our boys: Liam, Lyosha, Julien, Zia, and Ash. / For you shall inherit the New Earth." *New Earth Politics*, v.

14 Simon Nicholson and Sikina Jinnah, Introduction, "Living on a New Earth", in *New Earth Politics*, 1.

contributions on business and cities would have deserved a place in this volume.”¹⁵ It is surprising and worrying that given the role of the urban as key contributor to Anthropocenic crisis, the authors would not have that as a focus. Though this is not the only omission. Zelli, too, failed to note a more significant omission, a failure at getting perspective on the predominantly Western first-world problem field that the book explores. Not only is there not a section or chapter or address to Indigenous peoples, or orientation to *ongoing* colonisations precisely by this ‘New Earth’, there is not even an entry in the book’s very comprehensive Index that indicates any mention of Indigeneity at all.

Thus, Brassier’s *Nihil Unbound* constitutes one of the limits in an especially philosophical questioning of just what living and dying are when the being who (traditionally) is the thinking one, the correlationist being of thinking and being already recognises absolute finitude, that in a future absolutely to come, there is no thinking being. Of course, Brassier does not broach Indigenous thinking either. His is a Western metaphysical ground. I see Nicholson and Jinnah’s *New Earth Politics* as an opposing limit, not opposed to Brassier, though. Their concerns do not touch his, at least not directly. The ‘opposition’ lies in an assumed humanism, an agency of consensus, even if agonistic up to a point. Brassier dissolves any remnants of a humanism. Nicholson and Jinnah’s horizon is one I want to work with, or at least not entirely refuse. Can I work between a radical non-humanism and a universalising humanism, between nothing and something? But would this not be *Anthropos* in its making and unmaking? Still Western metaphysical bounding, bonding, even if nihilistic. I want to be between these two, and equally somewhere other than with either of the two. Let me move on, to my ‘third’ text, my critical non-West, my decolonising metaphysics.

Pūtaiao ā-nuku

In “Tears of Rangi: Water, Power and People in New Zealand” Anne Salmond writes of an “ontological braiding” evident in contemporary New Zealand environmental debates.¹⁶ In these often-agonistic engagements, ancestral Māori and Western concepts come up against each other, enmeshing and entangling. This intertwining of difference occurs also, Salmond notes, in some recent New

15 Fariborz Zelli, “Review of *New Earth Politics*,” *Global Environmental Politics* 17 (1, February 2017): 129-131, 131.

16 Anne Salmond, “Tears of Rangi: Water, Power and People in New Zealand.” *HAU: Journal of Ethnographic Theory* 4 (3, 2014): 285-305, 300.

Zealand academic discourse, for example in riverine scholarship that bridges Indigenous-Māori thinking with contemporary ecological science. In the legal arena too, with regards, for example, to Treaty claims, we see attempts to position rivers as legal persons thus effecting a shift in ontological registers from what might be construed as bio-logics towards a geo- or hydro-logics. Such shifts are not simple empirical facticity, even if reportage makes them headline news. These shifts go deeper, to primordial or foundational understandings as to how entities come to appearance. These are ontological shifts, shifts in how the being of entities is not so much thought, as in itself thinkable. Mechanisms, energies and inclinations that constitute these transformative movements are the 'subject' of this thesis. Design – whakaahua – in its braiding entwining of Māori whakaaro and Western thinking – is the challenge to think the Anthropocene from out of a chronic and debilitating understanding of *Anthropos*, as grounding ground of Western thought, to *tāngata*: *tāngata* – becoming person.

Ontological braiding is 'method' for this thesis as Indigenous-Māori thinking moves alongside or across immanence ontologies of especially twentieth-century Euro-America, along with contemporary eco-science and design thinking. As with river-braiding, these diverse narratives flow, over-run, merge, separate. They sometimes flood and at other times run dry. They are always in flux. As with the course of braiding rivers, their gravity, their inclining, the 'territories' of this exploration are broad and their forms are fluid. In a braiding river what provides orientation, determining movement and trajectory, is inclination immanent to acclivities in the earth's surface – immanent cause (*causa*, 'thing') and *gravitas* (weight of thought, weight of things): Earth-oriented force of gravity.¹⁷ Within this thesis *whakapapa* – becoming-earth – is 'ontological' terrain (*maunga*). Together with *mauri* (immanent life-force) *whakapapa* inclines a topography across which spill diverse discourses, separately, in parallel, at times agonistic, at times confluent, as Anthropocenic counter-practices to the currents of our everyday.

17 The English word 'cause' is derived from Old French inheriting from Latin '*causa*' which in French is *chose*, though *chose* translates as both 'cause' and 'thing'. We will come to engage the thinking of French philosopher, Gilles Deleuze, later in this thesis, on the intimacy he finds from Stoic thinking between cause as immanent to actual bodies, to actual things. On the weight of thought and the weight of things, see for example, Jean Luc Nancy, "The Heart of Things," in *Idem, The Birth to Presence*, trans. B. Holmes & others (Stanford, CA: Stanford University Press) 167-188. This essay can be thought of as preliminary to Nancy's later writings on the weight of thought.

However, before we get too settled into a metaphor of some 'golden braid' as a 'best of both worlds' scenario, I want to point to some things that easily entangle this braiding into a knotty mess. I want to address two kinds of concerns that stem from the impossibility of approaching Indigeneity as if we were not always already colonised. That is to say, the braids are already both from the West, though one of them is working hard at a decolonising whakaaro. A 2018 article combs through the tangles: "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopia and Fantasies of Climate Change Crises," by Kyle Powys Whyte.¹⁸

This is quite a complex discussion, in three parts. It concerns the Western locus of much debate and science on climate change and the Anthropocene that rebounds on Indigenous peoples in a number of ways. Firstly, the kinds of crises and scale of crises we in the West look forward to in Anthropocenic disaster are nothing new for Indigenous colonised peoples, who have had crises precisely of Anthropos for a number of centuries, crises of all manner of dispossessions, extinctions, destructions of everything, including languages, beliefs, kinship networks, as well as sustainable lands, well-being, happiness. These are all prognoses now wrought on the West by the West. The second issue is that Anthropocenic crisis seems to have its initial and most acute effects precisely on Indigenous peoples whose existence precisely because of colonisations, is on the margins of things, especially vulnerable coastal lands. The third issue, and in fact one I especially aim at addressing, is the recourse by those Whyte terms "Indigenous Allies" to positioning Indigenous peoples as component parts of a global Anthropocenic crisis. This extends from framing or understanding Indigeneity as representative of the Holocene, the previous 12,000 years of human existence, eclipsed by the Anthropocene, to thinking the task of averting the apocalypse of climate-driven disaster by ensuring that this planet's humanity recognises the same biological and geological sets of conditions, within a spatial and temporal framing coincident with Western science:

18 Kyle Powys Whyte, "Indigenous Science (Fiction) for the Anthropocene: Ancestral Dystopia and Fantasies of Climate Change Crises," https://www.academia.edu/36476866/Indigenous_Science_Fiction_for_the_Anthropocene_Ancestral_Dystopias_and_Fantasies_of_Climate_Change_Crises. See also "Indigenous Climate Change Studies: Indigenising Futures, Decolonising the Anthropocene," *English Language Notes* 55 (1-2, Fall, 2017): 153-162; and "Critical Investigations of Resilience: A Brief Introduction to Indigenous Environmental Studies and Sciences," *Daedalus: Journal of the American Academy of Arts and Sciences* 147 (2): 136-147.

I use the term “allies” to mean nonindigenous-identifying persons who do not share personally (or regarding their group members) in precisely the same oppressions; yet they are deeply concerned for Indigenous well-being for diverse reasons, from justice to guilt. They seek to do what they understand as being in their power to support us in our struggles. When I recently reviewed some literature about approaches for human societies to best come to grips with the implications of the anthropocene and address climate crisis, I was reminded of some concerns I have about how Indigenous peoples are being referenced. To me, it seems like that just as the anthropocene is emerging as a concept and climate change is taken seriously as an issue, Indigenous peoples are already categorised into narratives and conceptions of time that we did not and would not choose. And, as Anson, Gergan, Smith and Vasudevan show clearly, these narratives and conceptions have implications for how colonialism is understood, remembered and highlighted/disappeared.¹⁹

Whyte’s emphasis is on refusing those time-periods that come from the West, ‘Holocene’ and ‘Anthropocene’, as they have no bearing on the ‘spiralling time’ of Indigenous intergenerational existence. That refusal is equally a refusal to allow such spatio-temporal geo- and biological understandings of the earth to mask over or even make disappear several hundred years of colonial dispossession, a completely other understanding of the violence of Anthropos coming from the West. And there is the necessity to be careful in working with and through new narratives of ‘allies’ who would want to make the planet’s well-being their first task, precisely by a continuance of a colonising dispossession of a people’s temporalizing, its spatializing, its belonging and its language.

A second concern goes even a little deeper than those primordial concerns brought out by Whyte. This second concern addresses an essential question of translation or translatability between paradigmatic differences, between for example, Māori and English. Yes, we have an on-line dictionary now that instantaneously translates this word now from Māori to English and that word now from English to Māori. But this itself is the crisis of translatability, the capacity to flatten out language from it being the very *stuff* of existence itself, to it being a potential for interchangeable equivalences of expression. So, this second concern is discussed by Carl Mika and Michael Peters in an editorial to a 2017 issue of the journal, *Educational*

19 Whyte, “Indigenous Science (Fiction),” 12.

Philosophy and Theory. The editorial, titled “Aborigine, Indian, indigenous or first nations?” provokes the question as to how we (colonising) English speak to and of the colonised. What designation does not afford continuance of a colonising locality?

There has been opposition by various tribal groups and ‘first nations’ peoples to the terms ‘Indigenous’ and ‘Aborigine’ (and its cognates), although governments around the world continue to use both terms. Increasingly, the favoured term is ‘First Nations’ although this term is increasingly used in legal discourse especially in Canada to refer to members of legally recognised reserve communities. Accordingly, some scholars argue that the collective nouns used to name the world’s tribal groups have become increasingly problematic and that at source the terms have been derogatory, historically inaccurate and contaminated by a colonial past based on the demeaning notion of ‘primitive’ peoples with its assumption of western cognitive superiority. One example – the collective noun ‘Maori’ – was introduced, according to Rangihau (1992), to destroy the heterogeneity of the indigenous tribes of New Zealand. Most indigenous peoples prefer to be named or referred to by their specific nation or tribe names which themselves are sometimes contentious. It has been noted that the term ‘indigenous’ (or ‘aborigine’) is not itself indigenous.²⁰

I am in a tough place here. Most of the literature I work with from Aotearoa New Zealand either written by those who identify as Māori or those writing on indigenous issues, for the most part unproblematically invoke the peoples-identity Māori while clearly acknowledging that ‘identity’ comes from whakapapa and not from a totalising naming. Whakapapa is local, tying someone to land and immediate whanau, family and iwi, tribe. In fact, I have generally followed a protocol of identifying Aotearoa’s ‘first nations’ peoples as Indigenous-Māori, fully cognisant of the complexity and contradiction of such naming, aware that cross-cultural translating is as knotted as it is braided. *In many ways, the term whakapapa stands in here for ontology as I come to ‘deploy’ this most Western of metaphysical terms, in the sense that it accommodates existence as connection and relationality.*

20 Carl Mika and Michael Peters, “Aborigine, Indian, indigenous or first nations?” Editorial, *Educational Philosophy and Theory* Vol. 49 (13, 2017): 1229-1234, 1229. DOI: 10.1080/00131857.2017.1279879

Questions

The thesis aims at a braided composition. One strand aims to explore an earth-oriented ontological terrain particular to Aotearoa New Zealand and from this position, to engage internationally with other geo-logical thinking. As Salmond's work reveals, articulating ontological difference within public discourse is an important component of cultural change. Geo-logical analytics *for* existence disclose sundry ways in which our cultural practices are harming mauri understood as essential life-vitality. The concept of the Anthropocene is a vital marker in this territory, notwithstanding the colonising caveat I outlined from Whyte above. The Anthropocene signals the extent, reach and diversity of ontologically-mediated human-led dislocations in the life-field. What, then, might constitute counter-practices to this temporal threshold? Such questioning is central to a second strand of this work that tests out design differentiating through critical everyday practices that aim at design for life-wellbeing. Practice and ontology are imbricated, as river and river-banks shape one another. This is an exploration of ontology as design thinking and design process – whakapapa as whakaahua and as whakaaro of whakaahuatia. My questions become: How might we counter-current Anthropocenic practices? How might we experiment, design, and build more viable futures? How might ontological difference be instantiated in built form and in the more intangible but formative conditions of design thinking itself? How might design thinking come to be understood as and through an ethical framework? Might Indigenous-Māori ontologies, as decolonising metaphysics, design a paradigmatic shift from predominant Euro-American cultural-material frameworks? Such is the questioning of the urban material practices within this research.

Key critical contexts for this practicing-questioning are (briefly) (i) the geo-temporality of the Anthropocene, (ii) recognising that design, thought as transcendent instrumentality, has 'produced' the Anthropocene, and (iii) recognising the urban as our local and significant deepening or thickening of Anthropocenic design crisis. In a counter-thinking to transcendence, I especially look at the philosophical writings of Gilles Deleuze and his collaborations with Félix Guattari. Deleuze's Spinozist understanding of immanence is essential for the orientations I take up to critically assay Western design thinking, along with a braiding of Māori whakaaro, which I think as essentially immanent, in the sense by which Deleuze understands life. Also essential are a series of recent essays by the Māori academic, Carl Mika, that aim to do something intriguing and valuable. Mika approaches Western philosophical understandings of metaphysics especially via the writings of Martin Heidegger. What is especially valuable is how Mika approaches an understanding of Heidegger from out of a Māori decolonising

metaphysics. Māori whakaaro is brought to a reading of Heidegger. We think Heidegger through Māori understandings. In terms of my task for thinking, my call to think a braiding, Mika's work is helpful.²¹

Equally valuable are a series of texts by Salmond, already referenced with her "Tears of Rangi." Salmond draws out the complexity of defining ethical frameworks, which is to say defining how we practice our lives, precisely in those contexts that are most foregrounded by, for example, Whyte. Thus, in "Tears of Rangi," Salmond discusses the complexity of the legal battle for the pronouncement of personhood on the Whanganui River, on the North Island of Aotearoa.²² She notes that Māori, in argument for the river's personhood, invoked Western legal understandings of private property and ownership. Yet, they also invoked cosmological ancestry. She stresses this was not simply differing perspectives on the same reality that could be adjudicated by someone shifting perspective: "In the process of these shifts and juxtapositions, differences emerge that imply – indeed sometimes explicitly assert – the simultaneous relevance of alternative realities, not merely difference perspectives on the same thing."²³

Elizabeth Povinelli's questioning of the relationships of ontology, political power and governance of difference in this Anthropocenic time forms another key layer.²⁴ With her development of the notion of geontopower, Povinelli extends in significant ways the thinking ushered in initially by the work of Michel Foucault on biopower, and then by Giorgio Agamben who reads in close conjunction the division of life in the work of Aristotle between *bios* and *zōē*, between the good

21 Mika's focus is decolonizing metaphysics and his engagements are a careful 'braiding' of challenging Western thinking to Western metaphysics, especially in the writings of Heidegger. What is powerful in Mika's work is how braiding avoids the trap of explicating Māori thinking via Heidegger's radicality. Rather, difficulties in Heidegger's thinking are elucidated through the resonating depth of Māori metaphysics. I discuss Mika's work especially in Chapter Two of the thesis.

22 This legal battle is discussed in Chapter Four of the thesis.

23 Salmond, "Tears of Rangi: Water, Power and People in New Zealand", 290.

24 Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism*, (Durham, NC & London, UK: Duke University Press, 2016). See also, *Economies of Abandonment: Social Belonging and Endurance in Late Liberalism*, (Durham, NC & London, UK: Duke University Press, 2011).

life of humans and raw life, or life as such. Agamben reads the importance of this division in relation to Aristotelian understanding of *dynamis* as potentiality to be or, equally, to not be. Povinelli makes two important moves, one incisively theoretical and one politically vigilant. What, Povinelli asks, intervenes between bios and zōe that would more primordially define an immanent ontology of politics as event? This constitutes the critical 'ground' of *geos*. The second move actualises her understanding of geontopower. For just when Agamben's writings on biopolitics were gaining considerable critical traction, especially in relation to issues of biosecurity in the wake of the events of 9/11, biosecurity itself became secured precisely through military tele-technologies of geo-security. As Povinelli emphasises, this same military hardware maintains metro-security: "This focus [on biopower] has obscured the systematic re-orientation of biosecurity around geo-security and metro-security: the social and ecological effects of climate change."²⁵ Geontopower emerges with late liberalism. Its tactics aim at defining relations between life and nonlife. Povinelli's work goes to an essential concern I have with Indigenous-Māori understandings of mauri and whakapapa within which there are no life-nonlife differentiations. There is a 'univocity' in all existence, an immanent ontology of ora, life, for which ethics is mauri-ora, force of life's connectivity or relationality as well-being.

There are other important references for my critical thinking: David R. Cole's small book, *Traffic Jams: Analysing Everyday Life through the Immanent Materialism of Deleuze and Guattari*.²⁶ Cole coins the term "petro-citizen" to, in Povinelli's terms, activate a social imaginary. The urban is a fundamental locale of carbon-life whose biopolitical agency is geo-extraction as bio-extinguishing. Cole's immanent materialist critique locates a becoming-fossil of Anthropos such that geo-carbons may become otherwise, activating an immanent ontology as analytics of existence. Then there are concerns with walking as earth-moving, from a schizo stroll discussed by Deleuze and Guattari in *Anti-Oedipus*, to Walter Benjamin's account of Baudelaire's *flâneur* and Michel de Certeau's practices of walking the

25 Povinelli, *Geontologies*, 19.

26 David R. Cole, *Traffic Jams: Analysing Everyday Life through the Immanent Materialism of Deleuze and Guattari*, (New York: Punctum Books, 2013).

city.²⁷ These are discussed in Chapter Five. Walking is at once a bipedal agency by sentient creatures but also an ontological horizon for thinking movement as something other than or more than that inherited from Aristotle as *kinesis*, as the transformative moment from potentiality to actuality. De Certeau identifies governance structures and modes of radicalising movement via small-scale tactics enacted within everyday practices. Walking, too, now becomes whakapapa, becoming-earth. As a collection of writings, this thesis addresses design as ethics, a practice-as-critical-thinking, in relation to a thinking of life, and in the context of the Anthropocene, that epochal moment indexing a faltering in the vital life-force of this *immanent worlding*. Life, life-force, life-vitality are determining notions, explored particularly in a first strata (papa), concerning *living in the Anthropocene*. This composes three experimental assemblages of life: Those of lines, times and fields. A second strata, concerning *design ethics for the Anthropocene*, explores how a design ethics of mauri-ora – life vitality – enables a reorienting of the transcendent instrumentalism of Anthropocenic design, to an ethical design-attending to how things live-in-relation. A third strata develops a *design focus on urbanism*, framed by the agency of the Anthropocene. In this I look to design counter-practices that manifest life-wellbeing. As an event that dislocates and disorders life-processes, the Anthropocene brings life-concepts into focus. What orientates this thesis is a located Indigenous-Māori thinking of life, ora.

Chapter Two, "Life Line," introduces four 'refrains' as markers for the thesis as a whole: Anthropocenic climate change; Anthropos as culturally mediated construct; life as bio-logic construction; and life as geontological existence. The chapter discusses how we are now, with the Anthropocene, at a time in which ancient lifelines, whakapapa, are failing. Major arenas of threat include incipient biodiversity collapse, pollution, and climate change. Hence the question emerges: How do ontologies instantiate material practices? Discussion shuttles between poles of thought and practice, between bio-ontologies and geo-ontologies, and between transcendence and immanence. My discussion extends to looking at classical China and the West as incommensurable with respect to their basic 'concepts' in order to develop a deeper questioning of the difficulties of working

27 See Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia* Vol. 1, trans. R. Hurley, M. Seem & H.R. Lane. (New York & London: Penguin, 2009); Walter Benjamin, "Convolut M: The *Flâneur*," in *The Arcades Project*, trans. H. Eiland & K. McLaughlin. (Cambridge, MA: Harvard University Press, 2002) 416-455; Michel de Certeau, "Walking in the City," in *The Practice of Everyday Life*, trans. S. Rendall. (Berkeley, CA: University of California Press, 1984) 91-110.

across different cultural and language paradigms. The section "Bio-logics," explores how a thinking of life as life/death/nonlife creates an ontologically-mediated horizon for the Anthropocene. "Geo-logics" discusses another way of thinking life, as immanent indwelling, as relational field. This opens to the chapter that follows, which focuses on Māori geo-ontological concepts for living.

With Chapter Three, "Life Time ... Life Field," the Indigenous-Māori 'concept' of whakapapa is introduced as a fundamental non-instrumental way of conceiving existence. This discussion happens within a broader approach to Māori decolonising metaphysics that emphasises life as an always-already-relational event of deep time, formed of fragile individual lives whose capacity to extend into the future is threatened by diverse Anthropocenic conditions of risk. "Life Field," addresses the Indigenous-Māori notion of mauri as concept of a pervasive life-vitality, that precipitates a sense of life-as-interrelation. As concept-device, the Anthropocene offers a potential salvage or lifeline. If we are able to think *Anthropos* otherwise as such, and thereby reorient our fundamental disclosive thinking towards another conception of 'life', we may shift our current trajectory of life foreclosure.

Design as ethics is the focus of Chapter Four. The chapter sets out from the perspective of Western instrumentalist understandings of design. Via brief or summary discussion of Martin Heidegger's understanding of the epoch of technology as the readiness of all beings to be consumed, along with Michel Foucault's genealogy of contemporary neo-liberalism, I provide some grounding understanding of design-as-crisis. A third moment engages Deleuze and Guattari on the notion of a 'new earth' as radical immanent deterritorialising of design-as-transcendent instrument. Ethics, then, is considered as immanent (to) practice, and design becomes ethics' materialist medium. Ethics is a condition of life, which arises early in our collective brachiating life-line and is practiced by many different existents, including humans. So how might the idea of mauri, within its cosmogonic-immanent framework of whakapapa, contribute to minimal (relational, personal) rethinking of design (ethics) in the Anthropocene? If mauri is the instantiation of radical immanent life-force (ethics), how may it displace instrumental design considered as human mastery? How does mauri bring near, inhere, indigenous-to-this-place design for living? These questions underpin this chapter (and the project as a whole): Mauri-ora (resonant and vital life-force) becomes the guiding principle through which other purviews – design, minimal ethics – are brought into new becomings. The chapter introduces a number of 'case studies' as examples where governance structures (legal, economic, design) are challenged under pressures from Indigenous activism.

Chapter Five, "Living Urbanism," broaches three linked discussions. The first, following from discussion in Chapter Four, asks how an eco-ontological turn comes about and what its significance might be. From engagement with eco-ontology, I discuss the urban in terms of understanding the city as carbon-geo(bio)ontology, introducing Cole's work on the petro-citizen, addressing a design ethic for mauri-ora in the context of the contemporary city. Mohsen Mostafavi's edited collection, *Ethics and the Urban: The City and the Spaces of the Political*, becomes a critical focus, particularly Chantal Mouffe's concept of agonistic difference in public space, and Keller Easterling's notion of enacted ethics.²⁸ *Cole's Traffic Jams* scans the everyday life of the city through immanent materialist analysis focused on the agency of petroleum. A third moment engages an ontology of walking, referencing Deleuze and Guattari, Baudelaire, Benjamin and, especially, de Certeau. From Benjamin, I inherit a model of the non-totalising fragment, a mosaic-writing by which I survey (in de Certeau's understanding of the blindness of walking) the city of Auckland as a montage of carbon-fragments, phantasms or social-imaginary of Anthropocenic crises.²⁹

Chapter Six, "Counter-practices for Living Urbanism" addresses a series of design engagements undertaken during the course of this PhD research. Urban strategist, Nabeel Hamdi, offers an orientation: "In order to do something big, to think globally and act globally, one starts with something small and one starts where it counts."³⁰ This aligns with the pragmatic methods and methodology for the work. Serial iterations of whakapapa are a methodological framework for serial case-studies that start *somewhere that matters* or give agency to the work. That somewhere is tactically encountered as the institutional 'everyday' of my teaching and research practices, the work places to which I am obliged. A resonant *vagueness* is essential. This work is enacted to see what happens, what discussions are inaugurated, what

28 Chantal Mouffe, "Radical Politics as Counter-Hegemonic Intervention: The Role of Cultural Practices," in Mohsen Mostafavi (ed.), *Ethics and the Urban: The City and the Spaces of the Political*, (Cambridge, MA: Harvard GSD /Lars Müller Publications, 2017) 210-229; Keller Easterling, "Matrix Space," in *Ethics and the Urban*, 230-257.

29 Benjamin's fragment-thinking, his mosaic-assemblages are for the most part developed in his early writing on German tragic drama. See *The Origin of German Tragic Drama*, trans. J. Osborne. (London & New York: Verso, 1998).

30 Nabeel Hamdi, *Small Change: About the Art of Practice and the Limits of Planning in Cities*, (New York: Earthscan / Routledge, 2004) xix.

connections made, what habits – or networks or infrastructures – are shifted. As all of the design works are related conceptually and methodologically, projects overlap, align or group, create shifting whakapapa as genealogical lineages of practice-as-life. This is practice as activism, what Namdi emphasises as “[...] making the ordinary special and the special more widely accessible. ... It is about building densely interconnected networks, crafting linkages between unlikely partners and organisations, and making plans without the usual preponderance of planning.”³¹

Importantly, Chapter Six does not aim to provide illustrations of design theory as action. Rather, what we call ‘action’ is immanent cause to a multiplicity of effects, some of which may (or may not) be recouped as ‘theory’. The aim is to activate interventions that confound an already-defined doing of living: Design as immanent ontological disclosure. But what does it mean to write of *ontology* as a material practitioner, as a designer? For me, at least (or perhaps as my own-most), it means bringing certain unkempt, disorderly approaches, a little ‘chaos’ to the ordering cosmos of philosophy, ‘chaosmosis’ as Félix Guattari might say.³² Hence the thesis initially outlines certain approaches to thinking-living, which emphasise what re-orient to wellbeing. There are, perhaps, numerous philosophical lacuna, places where the integrity of the ontological edifice doesn’t hold but, as non-philosopher, my concerns are with how to, messily, responsively, obligingly, think-live in ways that materialise difference and counter Anthropocenic practices installed by colonising metaphysics of all kinds. What matters here is how whakaaro, thinking – gut-reactions, sensations, in all their directed, contradictory, sublimated, resistant modes – comes to matter, becomes-earth.

As Deleuze noted, in a celebrated conversation with Foucault (the one where Deleuze inherits the twentieth-century), the relationship between what is known as ‘theory’ and what is felt as ‘practice’ is complex:

31 Hamdi, *Small Change*, xix.

32 See Félix Guattari, *Chaosmosis: An Ethico-aesthetic Paradigm*. trans. P. Bains & J. Pefanis. (Bloomington & Indianapolis: Indiana University Press, 1995).

The relationships between theory and practice are far more partial and fragmentary. ... Practice is a set of relays from one theoretical point to another, and theory is a relay from one practice to another. ... Representation no longer exists; there's only action-theoretical action and practical action which serve as relays and form networks.³³

Foucault goes on to refine an understanding of theory as practice:

Theory does not express, translate, or serve to apply practice: it is practice. But it is local and regional, as you said, not totalising. This is a struggle against power, a struggle aimed at revealing and undermining power where it is most invisible and insidious. ... A theory is the regional system of this struggle³⁴

Deleuze responds with an affirmation around the agency of 'theory':

Precisely. A theory is exactly like a box of tools. It has nothing to do with the signifier. It must be useful. It must function. And not for itself. If no one uses it, beginning with the theoretician himself (who then ceases to be a theoretician), then the theory is worthless or the moment is inappropriate. We don't revise a theory, but construct new ones; we have no choice but to make others.³⁵

The messy disarray of this ge(bio)ontological-practice, this thinking-living (or living of thinking), extends to material practices. Choices around project foci and sites are made provisionally, with a view to agencies of intervention and viability, dependent on lines of variation or modal potentials outside of my powers. For example, institutional approvals are needed, access to sites may need to be given, funding needs to be sought, transdisciplinary collaborators need finding, linkages to be made with existing groups or activities. Multiple sign-offs or approvals need to be gained from agents who (Kafka-like) lack agency for engaging. Funding (is it \$1000 or \$100,000?) must be found, and then pushed through institutional systems configured for other modes of research funding, other normalising

33 See Michel Foucault, "Intellectuals and Power: A Conversation Between Michel Foucault and Gilles Deleuze," in Michel Foucault, *Language, Counter-memory, Practice*, trans. D.F. Bouchard. (Ithaca, NY: Cornell University Press, 1977) 205-217; 205.

34 Foucault, "Intellectuals and Power;" 208.

35 Foucault, "Intellectuals and Power;" 208.

regimes for legitimising researcher labour-time. Various Anthropos-Assemblages must hold, people or institutions remain in place, or replacements be found, to enable some of the projects to even begin, let alone move to something approaching completion. As small-scale tactical interventions, registering these as 'work' is questionable in contexts of a globalised Anthropocene. And yet this 'questionableness' is essentially question-worthy. It is where change must happen, in the seemingly nugatory practices of Petro-Carbon everyday. Speculative works operate in this minor register, minor-practices, testing tactics for doing something provisionally, now, while hoping to set in place differentiating frameworks for futures-to-come.



Chapter 2

Life Line

INTRODUCTION

Four Refrains

Life Line is composed in four refrains. A refrain is what, in a sense, repeats itself, though perhaps in each repetition there is something different. Gilles Deleuze and Félix Guattari, in *A Thousand Plateaus*, adopt the notion of 'refrain' as a way of discussing this relation of differentiations that happen in what repeats. In Chapter 11 of *A Thousand Plateaus*, "1837: Of the Refrain," Deleuze and Guattari commence with three quite contrasting scenarios: a fearful child who sings to herself in the dark; someone at home, humming along; and in a third scenario there is a rhythmic 'line of drift'.¹ Yet all three speak of the refrain (*ritournelle*): "These are not three successive moments in an evolution [not being at home, being at home, leaving home]. They are three aspects of a single thing, the Refrain."² The refrain forms a centre within chaos: the child secures her centre immersed in the dark; the home does not pre-exist but is composed from out of a centring refrain; with the third, that centring cracks open, letting something or someone in or out: "[The refrain] is territorial, a territorial assemblage ...: it always carries earth with it; it has a land (sometimes a spiritual land) as its concomitant; it has an essential relation to a Natal, a Native."³ This notion of refrain is earlier developed by Henri

1 Gilles Deleuze and Félix Guattari, "1837: Of the Refrain," in *A Thousand Plateaus: Capitalism and Schizophrenia Vol II*, trans. B. Massumi. (Minneapolis: University of Minnesota Press, 1987) 310-350, 311-312.

2 Deleuze & Guattari, *A Thousand Plateaus*, 312.

3 Deleuze & Guattari, *A Thousand Plateaus*, 312.

Bergson in *Time and Free Will*.⁴ Bergson is discussing a fundamental question as to the nature of motion: how is it measurable?⁵ From Bergson, we get a sense of just what Deleuze and Guattari mean with those little examples they offer of the child, of being at home and of leaving. The refrain speaks to a qualitative intensity as the originary locus of motion, where motion is the founding moment of territorialisation. It does not speak to quantitative extensity at all, to motion as something recorded and measured in 'objective' space.

Bergson's argument proceeds as follows: We generally say that a movement takes place in space, and when we assert that motion is homogeneous and divisible, it is of a space traversed that we are thinking, as if it were interchangeable with the motion itself. The successive positions of a moving body really do occupy space. But the process, by which it passes from one position to another, a process occupying duration, has no reality except for the consciousness of a spectator. It eludes space. Motion does not engage an object, but progress. Motion is a mental synthesis, a psychic and therefore un-extended process. In order to explain this, Bergson introduces a notion that will become important for Deleuze and Guattari in *A Thousand Plateaus: The Refrain*.⁶ The problem is this: With space there are only positions, in parts of divisible space. If consciousness is aware of anything more than positions, it is because it keeps the successive positions in mind and synthesizes them. But how does it do such a synthesis? It cannot be by a fresh setting out of these same positions in an homogeneous medium, for a fresh synthesis would then be necessary, ad infinitum. We have here a qualitative synthesis – a gradual organisation of our successive sensations, a unity resembling that of a phrase in a melody. It is just such a synthesis whereby we extract mobility from motion. Hence, in motion there are two elements to be distinguished: successive positions and the synthesis of these positions (the act by which we traverse these positions). The second exists in consciousness only. It is a qualitative intensity. For the most part, we confuse or refuse this and so we suggest that objects move in space, forgetting that while we can divide objects, we cannot divide acts.

Hence, these refrains, introduced here, are played out in this chapter, but equally, resound and resound differently throughout the thesis as a whole. They are a bit

4 Henri Bergson, *Time and Free Will: An Essay on the Immediate Data of Consciousness* (London: Dover Publications, 2001) 111.

5 Bergson, *Time and Free Will*, 110-112.

6 Deleuze & Guattari, *A Thousand Plateaus*, 311-312.

like 'life lines' running or coursing through the thesis. Initially, in "Anthropocene," I introduce the phenomenon of climate change in terms of a series of dislodging impacts that figure or configure the shifting grounds upon which this design research project does its (un)building. The name given to these shifting grounds is "*Anthropocene*." The Anthropocene is critical danger, requiring a thinking of its compositional forces as those capable of scaling and communicating the sublimely excessive planetary reorientations we witness today. From some of the critical engagements in eco-philosophy by Elizabeth Povinelli, I follow a Deleuzian recognition she cites that describes "understanding ... what is all around us but not in our field of vision."⁷ The Anthropocene has agency, as critical danger, that is essential for our design encounters. Elizabeth Grosz offers a further Deleuzian characterisation in thinking this notion of the Anthropocene: "Concepts do things, make things, perform connections, bring about new alignments."⁸ In a second refrain, "Life's Line," I present something fundamental to the overall argument of this thesis: that the Anthropos of the Anthropocene is not a totalising absolute but rather a culturally mediated construction and, as such, amenable to critique and reconstruction. To an extent, at least, the Anthropocene comes into being as an

7 Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism*, (Durham, NC: Duke University Press, 2016) 4.

8 Elizabeth Grosz, *Architecture from the Outside: Essays on Virtual and Real Space*, (Cambridge, MA: MIT Press, 2001) 58. Note also, there is an entire issue of the journal, *Deleuze Studies*, addressing the Anthropocene: "Deleuze and Guattari in the Anthropocene," *Deleuze Studies* 10 (4, 2016). I want to especially note a contribution that resonates closely with the concerns of this thesis: Simone Bignall, Steve Hemming and Daryle Rigney, "Three Ecosophies for the Anthropocene: Environmental Governance, Continental Posthumanism and Indigenous Expressivism," 455-478. The text draws heavily from Deleuze's Spinozism and Guattari's notions of ecosophy and transversality, discussed later in this thesis. The authors note when discussing the Ngarrindjeri Nation in South Australia: "For the Ngarrindjeri, the ecological health of their Country depends upon the uninterrupted connectivity of all its life forms; 'speaking as Country' enables the Ngarrindjeri to monitor ecological well-being and articulate the points where connectivity in the ecological system has suffered and led to decline in the overall health of the region." 469-470. Lands, waters, body, spirit — all things living — are interconnected and all need to be healthy for each to be so. The authors recognise strong resonance here with Guattari's transversality, and with what Deleuze understands as the third kind of knowing described by Spinoza, which is expressionism of God/Nature itself.

existential disjuncture or dislocation determined or construed by the disclosive horizon of Western metaphysics, an onto-theology of sub-stance, essentially grounded in transcendence, originating with an exogenous ex-nihilo divine entity and, by extension, the human as creating creature, made in that entity's 'image'. The transcendent ground of this thinking – its transcendental signified – structures in fundamental ways understandings of the bounding of physical limits – nature and history – of a bounded planet. My argument is that Western metaphysics offers alternatives to philosophical transcendence. Equally, thinking other than that derived from Western metaphysics, such as that of Indigenous and colonized cultures, breaks the absolute of transcendent 'Man'.

The third refrain, "Bio-logics for the Anthropocene," addresses culturally-mediated understandings of *life*, whose dominant manifestation can be termed 'Anthropos Ascendant': the human as transcendent ground or *subject-sub-stance*, grounding substance. The errancy of human agency as exogenous transcendence, in the epochal history of the being of humanity, inflects human industry to design practice – a productionist metaphysics for which the moment of the human becoming substance-as-subject coincides with the inauguration of the Anthropocene. A *terrestrial-oriented* ontology, by contrast, emerging from this planet's limits, establishes inherent indwelling as radical immanence. A fourth refrain, "Geo-logics for Living in the Anthropocene," develops a radically different understanding of *life* and immanence, enabling the emergence of the notion of 'Anthropos-as-assemblage'. Crucial to this difference and my thesis as a whole is recognition of the complex (and at times seemingly contradictory) relations between transcendence and immanence. This includes ways by which I aim to deploy and work with these notions. For this reason, in what immediately follows, I want to give some brief though definite understanding to what might be considered as some 'technical terms' of the thesis: immanence and transcendence; universality and particularity; anthropologism and anthropocentrism; anthropomorphism and the anthropological turn; and finally, what I term onto-logics. These hardly exhaust some of the more 'thorny' notions engaged in this thesis. Though, for now they get us off to a good start.

Some Technical Terms

IMMANENCE & TRANSCENDENCE

As suggested above, in that brief summary of this chapter's concerns, there is something essential in the distinction I am making between transcendence and

immanence. There are numerous ways to understand these two key notions within the Western metaphysical tradition. Are they exclusionary, reciprocal, or ultimately self-same? At times, it can be baffling to read across differing accounts of Western thinking and seemingly see one or the other as 'villain'. I do take up a position here, or take 'sides' recognising that nuanced challenges can always be made to such position-taking. Perhaps an interesting starting point is to look at a simple diagram made by the Italian philosopher, Giorgio Agamben, in "Absolute Immanence," a discussion of the philosophical understandings of immanence in the work of Deleuze and Spinoza.⁹ There are two columns.¹⁰ The one on the left has a heading 'Transcendence' with the right-hand one headed 'Immanence'. On the left are Kant then Husserl. On the right are Spinoza and Nietzsche. This seems to make sense so far. Then appears Heidegger in the centre, between the two columns at the centre of four diagonals, one descending from Husserl, one descending from Nietzsche. Then a third diagonal descends from Heidegger to Levinas and Derrida, on the side of transcendence and one descends to Deleuze and Foucault on the side of immanence. For the most part, suggests Agamben, immanence and transcendence tended to implicate one another, and Deleuze recognises this. Agamben notes: "Starting with Husserl, immanence becomes immanent to a transcendental subjectivity, and the cipher of transcendence thus reappears at its centre."¹¹

He goes on to quote Deleuze and Guattari on this: "This is what happens in Husserl and many of his successors who discover in the Other [Levinas] or in the

9 Giorgio Agamben, "Absolute Immanence" in *Potentialities: Collected Essays on Philosophy*, ed. & trans, D. Heller-Roazen, (Stanford, CA: Stanford University Press, 1999) 220-239.

10 Agamben, *Potentialities*, 239.

11 Agamben, *Potentialities*, 227.

Flesh [Merleau-Ponty], the mole of the transcendent within immanence itself ... In this modern moment, we are no longer satisfied with thinking immanence as immanent to a transcendent; we want to think transcendence within the immanent, and it is from immanence that a breach is expected¹² Deleuze's Spinoza is more radical. The task is to think immanence as the ontology of the univocity of Being, to exclude all transcendence of Being: A cause that is immanent, in which 'agent' and 'patient' coincide.¹³ Deleuze rediscovers the etymology of 'immanence' itself, displacing its generally understood origin in *manere*, 'to remain' (and hence requiring a transcendent moment for any movement) to *manare*, 'to flow out'. As Agamben emphasises, further citing Deleuze: "Deleuze returns mobility and life to immanence: 'A cause is immanent ... when its effect is "immanate" in the cause, rather than emanating from it.'¹⁴

This thesis confronts the complications of thinking radical or absolute immanence within a Western tradition that for the most part foregrounds complicity between immanence and transcendence. This discussion will be ongoing along with the peculiar understanding of 'life' developed by Deleuze, where life is precisely the immanence of immanence, a 'vertigo' at the heart of philosophy "where inside and outside, immanence and transcendence, are absolutely indistinguishable."¹⁵ Watch this 'space'!

UNIVERSALITY & PARTICULARITY

In Chapter Four of this thesis, I discuss a short though important book on ethical approaches to the crises of the Anthropocene. This is Joanna Zylińska's *Minimal Ethics for the Anthropocene*,¹⁶ a book whose understanding of 'minimal' stems

12 Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. G. Burchell and H. Tomlinson. (London & New York: Verso, 1994) 46-47. Agamben, *Potentialities*, 227.

13 Agamben, *Potentialities*, 226.

14 Agamben, *Potentialities*, 228. Here Agamben is citing Deleuze from *Expressionism in Philosophy: Spinoza*, trans. M. Joughin. (Cambridge, MA: MIT Press, 1990) 172.

15 Agamben, *Potentialities*, 228.

16 Joanna Zylińska, *Minimal Ethics for the Anthropocene* (Ann Arbor: Open Humanities Press, 2014).

from another small work on ethics by Theodore Adorno, *Minima Moralia*.¹⁷ I mention this now and under a heading of 'universality and particularity' for Adorno's ethics has as one of its targets Hegelian subsumption of particularity under the concept of the universal, or the universal as concept. We are here in a sense continuing discussion on transcendence and immanence. To work with the conventional pairing of universal and particular is to invoke a transcendent moment of the concept over the empirical encounter of a this or that, to invoke the crossing of some frontier between extensity and interiority of consciousness or self-consciousness, to subsume the 'I think' in or as language. Inasmuch as this thesis aims at working with the difficulties of a pure immanence, and a 'minimal' ethics, it aims at refusal of the legacies of the categorical thinking of Western metaphysics (Aristotle) that privileges epistemic sense (or *logos* as logic) over sensation as immanent (transcendental) cause without *cogito* or subject. Hence there is no universalisation, no transcendent concept that subsumes empirical individuals.

ANTHROPOLOGISM; ANTHROPOCENTRISM

The key concern of this thesis is the *Anthropocene*. But what can this name if it is not a universal category that subsumes a panoply of crises, of critical dangers? Is it not a universal, and for all that a *concept* that transcends the multiple milieus within which life is? We cannot separate these difficult questions (and hence the drift of this thesis) from the legacies of Anthropos itself, of the human as that entity considered as rational animal, animal with *logos*, with language, that being understood as measure. From the inception of Western thinking with Parmenides and Heraclitus, to the epochal shifts in Scholasticism and Cartesian thinking, to our technological and 'post-human' times, humanism remains an unshaken ground. For all the supposed radicality of today's vitalist and materialist thinking, the human remains essentially un-thought. For this reason, the Anthropocene remains, as a Western construct, transcendence at the very heart of life thought as immanent field. The coming task of this thesis is to dislodge the hegemony of an essentially un-thought Anthropos. But from where?

ONTO-LOGICS; ONTO-THEOLOGY

Western philosophy, from its inception, is concerned essentially with securing the permanent ground for being, securing the grounding question: What is x? Hence ontology, enquiry into the question of beings that are, and securing a ground for

17 Theodor Adorno, *Minima Moralia: Reflections on a Damaged Life*, trans. E.F.N. Jephcott. (London and New York: Verso, 2005).

that questioning forms the outlook for successive ways in which this question is posed. Ontology takes two directions that in fact are one: logic and theology. Each asks in its way for a securing or permanent ground and will find reciprocal 'comfort' in the *logos of theos* (Word of God) and the *theos of logos*. The *ens creatum*, 'God' is 'logical' or manifests order in creation. Anthropos becomes the 'image' of this supreme being, itself a creating creature, as creature created. This philosophical legacy privileges universalisms of all kinds and transcendence in all things. Again, the coming task of this thesis is to make a decisive break here. But how?

1. ANTHROPOCENE

Naming things

The Anthropocene is time. Though this is anything but clock-time, or now-time. The Anthropocene is disclosive horizon of the human as telluric force, as earthly and absolutely immanent refrain. This is not the 'human' captured by or categorically defined as Anthropos, not the human as genus to multiple 'species', not the human as transcendent being, as rational animal to all other living beings, and not even a being that differentiates itself from humus, organic and inorganic matter. This time, then, is developed within this research, in its complexity, urgency and global reach as well as in its epochal historicity. Epochal reference orientates us especially to diverse failures occurring at a planetary scale as a result of our telluric forces. *Our?* Return to universalisms? The 'we' of these telluric forces are complex, partial, contradictory, distributed unevenly, destroying in multiply complex ways, consuming, producing and aiding or caring in exceedingly contradictory ways. The Anthropocene, from the Greek, *anthropo*–human–and *cene*, 'new', is formally proposed as a *geological* epoch, a period in which human 'culture' is apprehended at a geological scale and timeframe.¹⁸ Though one wonders if 'culture' does not essentially return us to the most concealing of notions rather than anything revealing. What is 'culture' in such a context? – Global warming, climate change, sustainability, species loss – but also philosophical or socio-cultural frameworks capable of accounting for the 'ravages' of this time, where *this time* is the human as telluric force? Perhaps we even drop the metaphor, the 'as'. The human *is* telluric force and nothing more nor less, pure immanence of the earth. As this research

18 See Paul J. Crutzen and Eugene F. Stoermer, "The 'Anthropocene'," *Global Change Newsletter* 41 (May, 2000): 17-18; Will Steffen et al, "The Anthropocene: From Global Change to Planetary Stewardship," *Ambio* 40 (7, 2011): 739-761.

seeks ethical *design practices* as 'responses' to the Anthropocene; it proceeds in order to essentially rethink a toxic hierarchy: *Anthropos ascendant*. This research asks what it means to design for the Anthropocene. Design cannot be considered an intentional and human-centered pre-figuring of future worlds, not when the human is earth-immanent refrain: Telluric force, time as Anthropocene. What becomes of 'design' when *everything* is critical danger, critical risk? How might we ever recognise Anthropocenic dis-ease opening to ethical dwelling, such that life is survivable, is sustained?

An Anthropocene Working Group, under the auspices of the International Union of Geological Sciences, led by British geologist, Jan Zalasiewicz, is currently exploring the geological evidence for the declaration of a new geological time scale.¹⁹ This 'evidence' is based on whether human influence has created identifiable 'signals' in the geo-stratal record.²⁰ Dates for the inception of the Anthropocene are subject to debate, with some suggesting a commencement consequent with the development of agriculture.²¹ Others argue for the beginning of the industrial revolution.²² Some propose a mid-twentieth century date, congruent with acceleration of consumption, depletions, and planetary ecosystem degradation and a globally distributed cloud of radioactive nucleotide/isotope fallout.²³ The calls for a mid-twentieth century initiation reflect Zalasiewicz's assertion that the importance of the Anthropocene: "... lies not so much in seeing within it the 'first traces of our species' (i.e. an anthropocentric perspective upon geology), but in the scale, significance and longevity of change (that happens to be currently human-driven) to the Earth system."²⁴

19 Jan Zalasiewicz et al, "Subcommission on Quaternary Stratigraphy," Working Group on the Anthropocene: <http://quaternary.stratigraphy.org/workinggroups/anthropocene/>

20 Jan Zalasiewicz, Colin Waters and Martin J. Head, "Anthropocene: Its Stratigraphic Basis." *Nature* 514 (289, 19 January, 2017): 289-289.

21 William F. Ruddiman, "The Anthropogenic Greenhouse Era Began Thousands of Years Ago." *Climatic Change* 61 (3, 2003): 262-293.

22 Crutzen and Stoermer, "The 'Anthropocene'," Steffen et al, "The Anthropocene: From Global Change to Planetary Stewardship."

23 Zalasiewicz et al, "When Did the Anthropocene Begin?" *Science Direct* 383 (5 October, 2015): 196-203. <https://www.sciencedirect.com/science/article/pii/S1040618214009136>

24 Zalasiewicz et al, "When Did the Anthropocene Begin?"

Critics argue that the Anthropocene as a 'premise-concept' is potentially problematic.²⁵ Ironically, and against its supposed emphases, the term may well incline towards the anthropocentric as 'human exceptionalism', as the ground of an Anthropos-as-isolate approach. This epochal construction may also reinforce perceptions of a constructed binary or divide between capital 'N' Nature and capital 'C' Culture by way of a narrative in which the human species has again been acting in an un-Natural way with disastrous effects. Critiquing the construction of the Anthropocene, Professor of Media and Cultural Studies, McKenzie Wark, writes in *Molecular Red: Theory for the Anthropocene*:

New experiences often have to be thought within the basic metaphors that already exist. Anthropocene, it is then. A bad name for a bad time, thus not unfit ... a brilliant hack. The Anthropocene introduces the labor point of view – in the broadest possible sense – into geology. Perhaps the challenge then is to find analogous but different ways to hack other specialized domains of knowledge, to orient them to the situation and the tasks at hand. Let's invent new metaphors! Personally, I like the #misanthropocene, but don't expect it to catch on. Jason Moore prefers the Capitalocene, Jussi Parikka the Anthrobscene. Kate Raworth suggests the Manthropocene, given the gender make-up of the Anthropocene Working Group....²⁶

The term, 'Anthropocene', may be thought as a, perhaps, flawed name whose metaphoric field of allusions – perhaps for Wark, *illusions* – enables agency in thinking otherwise. Wark emphasises an analysis based on labour politics and capitalist commodification: "[...] this moment when planetary constraints start really coming to bear on the ever-expanding universe of the commodification of everything. This is the worldview-changing realization that some now call the

25 See, for example, Christophe Bonneuil and Jean-Baptiste Fresoz, *The Shock of the Anthropocene: The Earth, History and Us*, trans. D. Fernbach. (London: Verso, 2016); Chris Bonneuil, "The Geological Turn: Narratives of the Anthropocene," in Clive Hamilton et al, *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch*, (London, Routledge, 2015) 17-31; Karen Suckling, "Against the Anthropocene," in *Immanence: Ecoculture, Geophilosophy, Mediapolitics*, ed. A. Ivakhiv. <http://blog.uvm.edu/aivakhiv/2014/07/07/against-the-anthropocene/> Accessed 24 May 2018.

26 McKenzie Wark, *Molecular Red: Theory for the Anthropocene*, (London & New York: Verso, 2015), 223.

Anthropocene."²⁷ The editors of *The Anthropocene and the Global Environmental Crisis*, Clive Hamilton, Christophe Bonneuil and François Gemenne, see the term as a means of extending the domain of politics from the human to the non-human: "The Anthropocene poses a challenge to political theory, which used to see political regimes as purely intra-human contracts and struggles. . . . Political theory can no longer externalise the material and energetic metabolism on which the diversity of political systems rests."²⁸ Radically, the editors suggest that rather than being orientated to the more common understanding of a capitalist-modernist externalising of nature, the Anthropocene forces us to think the geopolitics of the non-human, such that we understand "Earth as a political subject."²⁹

Anthropocenic Everyday

One can argue that it is through the banal everyday notwithstanding those (everyday) practices for world-ending, such as nuclear tests, reactor melt-downs and atom bombs, that the Anthropocene most comes into being and is perhaps most readily apprehended. We live the breathing, ingesting, digesting, excreting defoliating and inhabiting of manifold markers of the Anthropocene. An archaeological dig through backyard geological strata reveals plastic dolls' heads, bottle tops, concrete, lost trowels, plastic clothes' pegs, batteries, coins, favourite Kinder Surprise cars, detritus of our household-everyday. These small incidental and overlooked or long-sought after items, in their aggregation, compose an image—or imaginary, a fable—of our everyday as literally waste-full, polluting and polluted.

An archaeological exhumation of an old rubbish tip, with its leaching, rotting contents spreading rhizomatically through soils and waterways, and even a contemporary land-fill, screened for content, and sealed to mummify its contents for future material-miners or anthropologists, might offer up an intriguing cartography of the Anthropocenic everyday: Plastic bags, arsenate tantalised timber, individually plastic-wrapped plastic dominos, I-pods, nail-polish-remover solvent, Walkman players, nuclear-powered cardiac pacemakers, Lego dog-grooming tools, polar fleece garments, polyisocyanurate foam insulation, batteries, asbestos cladding, tetra-pack packaging, dioxin [agent orange/2-4-5],

27 Wark, *Molecular Red*, xi.

28 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 9.

29 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 10.

asbestos fireplace gaskets, glittery transparent jelly sandals, aerobics head-bands, single-use polystyrene food packaging, fly-ash, industrial waste, contraceptive pills, insecticide-reared cotton t-shirts, expanded polystyrene foam beads, plastic exfoliation beads, antibacterial soaps, *polymethyl methacrylate/methacrylate* polymer nail extensions, nail glue, bisphenol-A can liners, PMMA dentures, car door liners, paper nappies, car tires, orthopaedic prostheses, tire-blackening paint, azo-dyed jeans, flame-retardant impregnated flannelette pyjamas, Goretex polytetrafluoroethylene (PTFE) jackets, azo-dyed polyester-velour frozen slippers, polyester eye-lash extensions, the illuminated plastic soles of Ugg-boots and much, much more.

Somehow 'we' – our design cultures, our manufacturing systems, our materials' labs, our governmental standards, our social norms – appear unaware that the earth, as *magic matrix*, can only make-disappear bio-degradable matter. All non-bio-degradable material placed into the earth, or rivers and oceans, further degrades at varying rates, losing material integrity – form and ethics – delivering pollutants right down to the cellular level by way of nano-toxins that migrate and mix with emergent or unpredictable effects.³⁰ The hydrophobic and small-size characteristics of nano-plastics create the conditions for them to enter through the cell-wall (through poration or other rupturing processes).³¹ And so cellular life becomes plastic – bio-plastics as a final petro-colonising frontier instantiating strato-dermal signals for the Anthropocene. Our 'cultural' outputs largely prove capitalist culture's profound disconnect from its living-world that provides the food stock and place for its 'products'. Within this late consumer capitalist model, we currently lack any holistic strategy or any implementation process for the design, usability and decommissioning of the goods, services and infrastructures we have. For example, we currently lack any means of assessing risk and effect of this plasticising of the environment given the paucity of data on micro and

30 The European Union defines nano-particles as being less than 1-100nm. See Commission Recommendation 2001/696/EU of 18 October 2001 on the definition of nanomaterial. *Official Journal of the European Union*, October (2001): 38–40. Accessed at: <http://eur-lex.europa.eu/oj/2011/10/direct-access.html?ojYear=2018>

31 Laura M. Hernandez, Nariman Yousefi and Nathalie Tufenkji, "Are There Nanoplastics in Your Personal Care Products?" *Environmental Science and Technology Letters* (4, 2017): 280-285; Rongxue Cui and Shin Woong Kim, "Polystyrene Nanoplastics inhibit reproduction and induce abnormal embryonic development in the freshwater crustacean *Daphnia Galeata*," *Scientific Reports* (7, 2017).

nanoplastic toxicity and toxicokinetics – another kind of blindness to the terrain of our everyday.

Single-use or disposable, therefore badly designed, consumer items are, as items of often-daily use, rendered invisible by their 'everyday' status. Yet, this 'everyday' leads in the aggregate to an extraordinary 'merchant modernity',³² what Timothy Mitchell describes as a carbon democracy that instantiates what may as well be called the Capitalocene as the Anthropocene.³³ The work of Henri Lefebvre, a twentieth century Marxist philosopher of space and the spatiality of capitalist production processes in contexts of everyday consumption, foregrounds the manner in which the everyday, as residual spacing in which 'life' takes place, is also the locale within which capitalism survives and reproduces itself as spatialising practices.³⁴ While Lefebvre's perspectives developed at what might be termed the epochal beginnings of a globalised and accelerated merchant modernity of today, his critique offers value to contemporary spatial-social discourses.³⁵ Ian Angus suggests that, more broadly, 'left-wing' thinkers have espoused a notion of "... radical change in the relationship between human society and the global environment" consequent with radical advancements in technologies of production.³⁶ John Bellamy Foster's Marxist analysis of the post-war period suggests:

32 Bonneuil and Fressoz, *The Shock of the Anthropocene*.

33 See Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil*, (London: Verso, 2011).

34 Henri Lefebvre, *Production of Space*, trans. D. Nicholson-Smith. (Oxford: Blackwell, 2000).

35 Lefebvre, *Production of Space*. Basic to Lefebvre's understanding of spatiality is a triad of relations. Space is practiced before it is known. Such practices become codified as knowable through two somewhat competing frames. There are 'representations of space' defined by the 'technicians' or planners of space. Then there are 'representational spaces' understood as the thick symbolic dimensions to actual lived experience. Lefebvre understands the politico-cultural dimensions to spatiality through the relational interactions, contradictions and antagonisms of each of these. See especially for a summary of these, 38-39.

36 Ian Angus, *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System*, (New York: New York University Press, 2016); Barry Commoner, *The Closing Circle: Nature, Man and Technology*, (New York: Alfred Knopf, 1971).

[There is] a new stage of planetary crisis in which human economic activities began to affect in entirely new ways the basic conditions of life on earth. This new ecological stage was connected to the rise, earlier in the century, of monopoly capitalism, an economy dominated by large firms, and to the accompanying transformations in the relation between science and industry. Synthetic products that were not biodegradable—that could not be broken down by natural cycles—became basic elements of industrial output. Moreover, as the world economy continued to grow, the scale of human economic processes began to rival the ecological cycles of the planet, opening up as never before the possibility of planet-wide ecological disaster. Today few can doubt that the system has crossed critical thresholds of ecological sustainability.³⁷

It becomes clear from current research, or more directly when I look out my window at spring blossoms in winter or migrating birds arriving early, that radical and accelerating change of the Anthropocenic 'everyday' is unsustainable and insupportable. Such a "critical knowledge of everyday life" is a potential enabler for activating processes of change.³⁸ The everyday, for Lefebvre, is the space of reproduction of capitalism but also the potential site of a 'utopic' transformation. Anthropocenic design has written itself into the geological strata of the globe. How could we have thought of ourselves as so separate from a living-world?

2. LIFE'S LINES

This research locates time as radical, crisis-level perturbation of global ecological systems. New terms abound as horizons for new conditions become disclosed: 'Climate Departure', refers to average yearly temperatures exceeding the historical averages established between 1860-2005. Climate departure is estimated for the tropics within three years of the writing of this text, that is, in 2020, for the Indonesian city of Manokwari.³⁹ In 2017, scientists reported that

37 John Bellamy Foster, *The Vulnerable Planet* (New York: Monthly Review Press, 1994), 109.

38 Lefebvre, *The Production of Space*, 98.

39 See Camilo Mora et al, "The Projected Timing of Climate Departure from Recent Variability," *Nature* 502 (10 October, 2013): 183-187.

for the first time the planet has registered three sequential years of “hottest temperature ever recorded.”⁴⁰ While petro-carbon driven climate change has already foreclosed on the lives of many and will increasingly call time on life, this is not the only global-scaled threat to life. Alongside this significant shift in climate systems is a massive shift in biological systems as multiple entities go extinct under Anthropocenic pressures. Meanwhile new research shows the degree to which plastics pollution suffuses the planet, evident in the air we breathe, and in the foods and drink we consume. Toxins diffused globally as radioactive particles, synthetic pollutants, micro and nano-sized petrochemical plastics, further harm life's capacity to live.

Together these three intensities – petro-carbon, petro-plastics (or synthetic pollutants), and species-extinction – constitute key agencies and urgencies of the Anthropocene. If I characterize the Anthropocene as critical danger, and as time ontologically disclosed as radically immanent ‘human’ forces – those of the earth – I foreground these three modalities of danger (petro-carbon, petro-plastics, species-extinction) as three modifications of the temporalizing of telluric forces I call Anthropocenic temporalizing. These are human but not a humanism. These are human though not anthropocentric. This pure immanence of disease is proliferating carbons, systemic synthetic pollutants and multiple species extinctions that are now ‘human’. These refrains are dark, cold and terrifying, as Nietzsche said of the State in *Thus Spake Zarathustra*: “State is the name of the coldest of all cold monsters. It even lies coldly, and this lie crawls out of its mouth: ‘I, the state, am the people.’”⁴¹ Think again of Deleuze and Guattari’s refrain. Think again of that fearful child in the dark outdoors who sings to herself, securing her centre. ‘Our’ ‘child’ inherits this monstrous state, ‘cold’ as it is. Nietzsche’s state, its lie, creeps now into the everyday of a girl’s harboring refrain.

Petro-Carbon

Warming seas glow a blue warning at night: Bioluminescent plankton, *Noctiluca Scintillans*, are an illuminating sign of warming seas around Tasmania. *Noctiluca* had not been seen in Tasmania prior to 1994 but climate perturbations are changing sea temperatures and currents, in this instance driving warmer waters

40 See *NASA Global Climate Change: Vital Signs of the Planet*: <https://climate.nasa.gov/vital-signs/global-temperature/> Accessed 23 May 2018.

41 Friedrich Nietzsche, *Thus Spake Zarathustra: A Book for All and None*, trans. A. del Caro. (Cambridge, UK: Cambridge University Press) 34.

down towards the cool Southern Ocean. As the marine habitat shifts, so new organisms establish niches with potential negative effect: Dense blooms of *Noctiluca* can deplete oxygen levels in water, killing other marine organisms.

Petro-Plastics

Like air-borne carbon pollution, plastics pollution is now a global issue. Unlike carbon, however, plastics pollution has an even more complicated relationship with the life-field for it affects not just the atmosphere and sea – which become more acidic and thus hostile to most life-forms – but also the earth and, most close to the bone, biological life at micro and nano-scales of pollution. Micro-plastics have now been found in the air, in the earth, in the water, in the ice in the Arctic, in fish, in beers and water, in honey.⁴² A host of new research declares the plasticising of the planet has occurred, as an outcome of exo-logical design approaches: Design disconnected from, or conceived exterior to, planetary processes, rather than as vital immanence.

Mass-Extinction

As I have discussed briefly already, further and equally incipient threat to the life-field is registered in the sixth mass extinction event. This mass die-off of plant and animal species is in process now and intrinsically threatens human life given the extent to which life exists as a mesh-composition or assemblage rather than as individuated beings whose externality or relationality transcends their immanent being. This extinction event reveals a further crisis yoked particularly tightly to human wellbeing and the capacity to live: There is an agro-biodiversity crisis.⁴³

42 See: Daniel Cressey, “The Plastic Ocean: Scientists Know That There is a Colossal Amount of Plastic in the Oceans. But they don’t know where it all is, what it looks like or what damage it does.” *Nature* (536, 2016): 263-265; Gerd Liebezeit and Elizabeth Liebezeit, “Synthetic Particles as Contaminants in German Beers.” *Food Additives and Contaminants: Part A*, 31 (9, 2014), 1574-1578; Rachael W. Obbard, Saeed Sadri, Ying Qi Wong, Alexandra A. Khitun, Ian Baker, Richard C. Thompson, “Global Warming Releases Microplastic Legacy Frozen in Arctic Sea Ice,” *Earth’s Future* 2 (6, 2014): 315-320; Lisbeth Van Cauwenberghe and Colin R. Janssen, “Microplastics in Bivalves Cultured for Human Consumption,” *Environmental Pollution* (193, 2014): 65-70.

43 M. Anne Tutwiler, “Agro-biodiversity: ‘Eulogy’ for our foods.” See: <https://www.theguardian.com/environment/2017/sep/26/chips-chocolate-and-coffee-our-food-crops-face-mass-extinction-too> Accessed: 23 April 2018.

We increasingly rely on a reductive collection of plant and animal species for our food, and these come under stress in different ways as a result of Anthropogenic effects. In a series of articles on agro-biodiversity threats, M. Anne Tutwiler writes a potential *eulogy* for our food.⁴⁴ Our enlivening morning coffee, for example, is under threat due to the effects of heat and drought stress under climate change and yields have already dropped.⁴⁵ In a reminder of the Irish potato famine of 1845-49, it seems that climate change will also significantly affect key staple crops such as potatoes as a result of a range of factors, including reduction of available arable land due to urban expansion, changes in rainfall and pest patterns.⁴⁶

Our time, now, has no prior analogue: "In terms of some key environmental parameters, the Earth System has moved well outside the range of the natural variability exhibited over the last half million years at least. The nature of changes now occurring simultaneously in the Earth System, their magnitudes and rates of change are unprecedented. The Earth is currently operating in a no-analogue state."⁴⁷ Attesting to the degree of radical and rapid transformation, the eleven authors of *Global Change and the Earth System: A Planet Under Pressure*, describe these transformations as 'profound':

[...] profound transformation of Earth's environment that is now apparent, a transformation owing not to the great forces of nature or to extraterrestrial sources but to the numbers and activities of people - the phenomenon of global change. Begun centuries ago, this transformation has undergone a profound acceleration during the second half of the twentieth century. During the last 100 years the population of humans soared from little more than one to six billion and economic activity increased nearly 10-fold between 1950 and 2000. The world's population is more tightly connected than ever

44 Tutwiler, "Agro-biodiversity."

45 See A.C.W. Craparo et al, "*Coffea Arabica* Yields decline in Tanzania Due to Climate Change: Global Implications," *Agricultural and Forest Meteorology* 207 (15 July, 2015): 1-10.

46 Andre Daccache et al, "Impact of Climate Change on Irrigated Potato Production in a Humid Climate," *Agricultural and Forest Meteorology* 151 (115 December, 2011): 1641-1653.

47 International Geosphere-Biosphere Programme, 2001, *Amsterdam Declaration on Earth Science*: <http://www.igbp.net/about/history/2001amsterdamdeclarationonearthsystemscience.4.1b8ae20512db-692f2a680001312.html>

before via globalisation of economies and information flows. Half of Earth's land surface has been domesticated for direct human use and nearly all of it is managed by humans in one way or another. Most of the world's fisheries are fully or over-exploited and little pristine coastline exists outside of the high latitudes. The composition of the atmosphere – greenhouse gases, reactive gases, aerosol particles – is now significantly different from what it was a century ago. The Earth's biota is now experiencing the sixth great extinction event, but the first caused by another species: *Homo Sapiens*. The evidence that these changes are affecting the basic functioning of the Earth System, particularly the climate, grows stronger every year.⁴⁸

Steffen et al discuss the extreme complexity and emergent nature of the multiple drivers and outcomes of change, noting: "Systems theory suggests that complex systems can never be managed; they can only be perturbed and the outcomes observed."⁴⁹ The diversity of factors, the scaling from planetary-system to nano-particle, and the extent of change is vertiginously complex. How may we comprehend this complexity and apprehend agents? Though from the point of view of my research, we also need to stop a moment at the attribution in the above quote to the species *Homo Sapiens*. It would be a simple and easy mistake to now slip into species-essentialism, as if paramount in our thinking is the task for a more radical refrain: human is telluric un-building of species-humanism.

Natures and Cultures

What defines the socio-political forces that brought the Anthropocene into being? The editors of *The Anthropocene and the Global Environmental Crisis* point to the cultural narratives and practices of what they call industrial modernity as a key producer of Anthropocenic conditions:

The stories that the elites of industrial modernity have told themselves – about nature as external and purposeless, about the world as resource, about human exceptionalism, about progress and freedom as an escape from nature's determinations and limits, about technology as quasi-autonomous prime mover – have served as the cultural origins and conditions of the Anthropocene.⁵⁰

48 Will Steffen et al, *Global Change and the Earth System: A Planet Under Pressure*, (Berlin, Heidelberg, New York: Springer, 2004) 5.

49 Steffen et al, *Global Change and the Earth System*, 286.

50 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 17.

Part of the Anthropocenic project, as the editors present it, involves an attempt to rethink or think past capitalist-modernist ontological substrates towards a narrative more attuned to an Anthropocenic geosphere. A central point of their argument is how Euro-American modernity was founded on a newly instantiated split between what had been understood as mutually correspondent:

[...] at the moment when both the natural sciences and the social sciences and humanities were being institutionalized and professionalized, setting the cultural stage of industrial modernity, the world was being divided. On the one side there was 'Nature', external to society and governed by slow and steady laws, but free of any telos in its history. On the other there was 'Society', teleologically oriented towards a freedom understood as humankind wrenching itself out of any natural determination and limit.⁵¹

Similarly, Philippe Descola, in *Beyond Nature and Culture*,⁵² makes the case, based on a wide-ranging across-six-continents anthropological study of Indigenous cultures, that the concept of a Nature external to humans is a recent cultural construction particular to Euro-American modernity. Just as definitions of the Anthropocene are various, so are the future potential trajectories diverse. In the twelve chapters of *The Anthropocene and the Global Environmental Crisis*, various critiques, analyses, narratives and futures are presented. Is the narrative that is in play an 'eco-catastrophist' one, concerned with planetary limits to growth, the collapse of industrial-capitalism, and the need for socio-economic innovation? Will we move towards a geo-engineered techno-instrumentality, taking up what Bonneuil describes as a post-nature eco-modernist narrative that drives towards:

Constructivist-demiurgic projects – the transhumanist project to re-engineer the human species ... the geo-constructivist project of eco-pragmatists, notably the Breakthrough Institute, to achieve a technical stewardship of the Earth as a whole (Neyrat 2015, in Hamilton) ... eco-pragmatists do not see the Anthropocene as demanding more humility and caution towards the Earth. Rather they radicalize the Baconian project to artificialize evermore the Earth.⁵³

51 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 6.

52 Philippe Descola, *Beyond Nature and Culture*, trans. J. Lloyd. (Chicago, Ill.: The University of Chicago Press, 2013).

53 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 25.

Despite the breadth of reflection and projection presented in *The Anthropocene and the Global Environmental Crisis* there is a notable lack of any real engagement with *Indigenous* narratives that never really adopted a nature/culture binary as a means of understanding or positioning human practices. And this locates a central and determining aspect of this research. 'Anthropocene' as concept is inseparable from the milieu of forces recognized as contemporaneous with industrial modernity. This constructed *Anthropos* announces Euro-American modernity. It is its 'social imaginary' to use a term from Povinelli. It is far from being globally normative, universalising, totalizing or transcendent to its situatedness. It is not determining of all agency or direction. The Anthropocene as discursive ensemble, as the name given to an epoch speculatively emerging, discloses a normalizing taken, in the 'best' 'spirit' of the West to be global and universal, a transcendental signified of planetary proportions, a humanism rooted in Eurocentric enlightenment thinking, assumed to be applicable to all those existing within, or adjacent to, or infected by, modernity.

Thus, this research presents a *narrative* of the Anthropocene as epoch of *Anthropos Transcendens*, for whom existence and existent are separated substances, product of instrumental and transcendent design – *Anthropos Transcendens Designato*. Perhaps this 'narrative' is a meta-narrative encompassing all others, for all narratives are designed. How would we no longer tell stories? Perhaps that is the most pressing question. How is the Anthropocene the end of telling stories, telling narratives, and the inception of a thinking or contemplating that eschews all knowing? This would be Deleuze's absolute immanence. All 'eco-catastrophists' are designed; all 'post-natures' are designed. Though perhaps meta-narrative is not the correct 'term'. We need to think 'design' as something other than a master-discourse of mastery (end of the story of human progress). The question to then asked is perhaps: How might an ethical design for wellbeing, a geo-logical design, perhaps, compose the Anthropocene as some other 'thing'? Initially, in what follows, "Bio-logics for the Anthropocene," I explore some of these questions. Following "Bio-logics" I explore a Geo-logic. "Geo-logics" asks for an accounting for place as 'geotics' rather than as 'biotics', and this research attends particularly to a question of place as something to be thought from out of an Indigenous-Māori understanding of temporality and place, from time as telluric force of earth, from whakapapa as un-grounding ground of Māori life line. Geospatial locale is thought through Indigenous-Māori geo-onto-logics that, at once, reveal and exceed Anthropocenic assumptions. In aligning Indigenous-Māori thinking with design thinking – whakapapa with whakaahua, my aim is to acknowledge how onto-logics 'are' affective worlding–sensation-without-subject. This questioning-imblicating of design and Indigenous worlding profoundly opens to dis-closure of ontological horizons that inaugurated the Anthropocene and that permeate our

everyday. As Bonneuil asserts: “[The] various Anthropocene narratives we tell are performative; they preclude or promote some kinds of collective action rather than others, and so they make a difference to the becoming of the Earth.”⁵⁴

3. BIO-LOGICS FOR THE ANTHROPOCENE

What have constituted dominant registers for life and living during (or as) the emergence of the Anthropocene? “Bio-logics for the Anthropocene” argues that any thinking of life as biology, or science constituted in an ontology of transcendence that positions the human as essential knowing substance – *cogito* – has created the conditions for the Anthropocene. Corollary to this is an essential definition of ‘life’ constituted on two modalities, that of movement (*kinesis*) and that of perception (*aesthesis*). Living things have awareness of their milieu, hence reciprocity with that milieu. They also have capacity for movement, which is not so much ‘territorial’ in nature, but rather capacity for change, from potentiality to actuality, *dynamis* to *energia*, in Aristotelian terms. Hence, seeds germinate; infants grow. Such definition of life defines non-living or inanimate beings in terms of that which lacks *dynamis*, as auto-capacity for change, and lacks *aesthesis*, reciprocal relations with a milieu. These criteria remain consistent with Aristotle’s categorisations of life: “The animate seems to differ from the inanimate by two things in particular, motion and perception.”⁵⁵ Life has thus been understood, in a tradition especially inaugurated by Aristotle, in relation to a concept of ‘soul’ or *psyche* as animating principle. The animate, the living thing (*zōon*), is alive because of its soul or *psuché*. Aristotle describes how *psuché* is “... that by which we are alive.”⁵⁶

Crucial for Western metaphysics is that life as animate agency is to be differentiated from that which is inanimate. From Classical Greek thinking, to Medieval Christian philosophy, to Cartesian modernity, characterisations of what is alive and what is not alive follow inconsistent or competing narratives. Greek gods resided in what modern science would call inanimate things. The Christian god made the world but did not compose it in pantheistic terms. Landscapes of inanimate matter were very much alive for Greece of 400 BCE, as *muthos* presided over *epistēme*. Though

54 Hamilton et al, *The Anthropocene and the Global Environmental Crisis*, 30.

55 See Aristotle, *De Anima*, 403b25-7, in Jonathan Barnes, *The Pre-Socratic Philosophers*, (New York: Routledge, 1982) 5.

56 Aristotle, *De Anima*, 414a12, in Barnes, *The Pre-Socratic Philosophers*, 5.

from Greek metaphysics, life is an exclusionary category, possessed by some things and not by others. Life is animated, from *anima*, "life, breath," as auto-capability for change, Latin translation of the Greek, *psuché*. Descartes's substantialist definition of certainty in the *Cogito ergo sum* inscribes the self-certainty of existence no longer as a Scholastic 'breath of life'— faith in God at the limits to reason – but in reason itself as individuated grounding substance. That other, for Cartesian thinking, that other than an animating 'breath' of a *cogito*, was *res extensa*, what is radically outside cogitation of an individuated self. Life is then a graded or graduating table of differences with respect to cogitating awareness or reciprocal engagement with a milieu as perception, reason and will. The inanimate, what the Greeks called *hyle* – matter or stuff – assumes for post-Cartesian modernity an emphasis on a perceiving subject of that stuff, and a culture of individuation rather than collectivity. The Husserlian concept of *lebenswelt* (lifeworld) discloses this emphasis on a perceiving subject within a world of other animate beings along with inanimate, non-agential things.⁵⁷ Biology is here a preserve of life understood as regulatory and reciprocal relations between the living and a non-living world of matter.

I want to draw attention to how life can be thought otherwise, in a manner that includes but also extends out from the biotic. Further, I want to draw out a wider schema around this particular thinking of life as *bios* and how it springs from transcendence, which constructs Anthropos-as-ascendant or isolate. Human agency, as exogenous and transcendent, results in human industry and design practice as a productionist metaphysics whose *telos* or finality-of-use in consumption, or end-of-life in dis-use, is designed as *not designed*. Products arrive (often after two 'uses') as landfill 'lacuna', or break down as toxic elements that cannot contribute to the cycles of our closed-loop world. Though I need to introduce the notion of an ontological *continuum* stretching between transcendent and immanent 'poles'. The transcendent is understood here, loosely following Deleuze, as a thinking of essences, categories or a priori grounds as transcendental ideas or ideals by which experience can understand its world of things. This transcendental thinking breaks from the Cartesian *Cogito*, or the *ego* 'I think' at the centre of Kant's transcendental idealism. For Western metaphysics, Platonic forms inaugurate such transcendent thinking, where things produced and things of nature are 'copies' of *eidos*, ideal notions or concepts. In this respect, inferior things of this world,

57 Edmund Husserl, *The Crisis of European Sciences and Transcendental Phenomenology*, trans. D. Carr. (Evanston, Ill.: Northwestern University Press, 1970) 142.

in their changeability, have their fixed identities residing in transcendent forms.⁵⁸ These ontological 'poles' of immanence and the transcendental are considered (geo) spatially in an attempt to locate their differential agencies and capacities. I recognise transcendence as that which exceeds extension or limit, a centrifugal arcing outward. By contrast the immanent is located here-in, in relation to a certain finite and centripetal centring, an existing within, an indwelling and 'in-turning', an embedding.⁵⁹ Think of the three refrains I mentioned from Deleuze and Guattari at the beginning of this chapter, or rather the three 'scenes' of a single refrain that constitute a centring territorialising from out of chaos that can crack open to afford lines of flight. Here one never quite arrives at fully formed 'forms' or fully realised 'subjects' as entities fully present-to-themselves. They are matter as ongoing chaotomic flux, identities as ongoing differentiations.⁶⁰ Elizabeth Povinelli provides a short-hand for conceptualising these ontological poles, transcendent, immanent, as "essences or existents."⁶¹

Transcendence – Life/Non-Life

"Life's Lines" aims to trace a 'line' between the thinking of life and non-life in terms of a bio-centric logic of what lives whose thinking is grounded in the transcendence of ex nihilo inception. It does this critically in order to open other lines of life. Discussing hegemonic life concepts, Gil Anidjar describes the "becoming-biological of life" as a "biocentric" focus in the thinking of life and suggests that the "general, hegemonic acceptance of mere life as biological ... appears at once modern and ancient."⁶² Echoing Jacques Derrida's question, posed in *The Beast and the Sovereign*, Anidjar asks is there "another thinking of life?"⁶³ Is there a way

58 See Gilles Deleuze, *Difference and Repetition*, trans. P. Patton. (New York: Columbia University Press, 1994).

59 See Gilles Deleuze, *Pure Immanence: Essays on a Life*, trans. A. Boyman. (New York: Zone Books, 2001).

60 Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia Vol II*, trans. B. Massumi. (Minneapolis: University of Minnesota Press, 1987).

61 Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism*, (Durham, NC & London, UK: Duke University Press, 2016) 1.

62 Gil Anidjar "The Meaning of Life," *Critical Inquiry* 37 (4, 2011): 697.

63 Anidjar, "The Meaning of Life," 710; See Jacques Derrida, *The Beast and the Sovereign Vol. 1*, trans. G. Bennington. (Chicago, Ill.: University of Chicago Press, 2009).

to think of life that can exceed what he proposes as the effect of a yet to be critiqued Christian colonisation of the concept of life?: "We are still with Christianity and with the biological as theological."⁶⁴ This amounts to a rethinking of the ontology of metaphysics not only as onto-theology but further as bio-onto-theology, even as the Christian *logos* as *bios*, the 'Word made Flesh'.

The preliminary work undertaken by Michel Foucault on modernity and bio-politics, and significantly extended by Giorgio Agamben, is significant here in considering what now constitutes life as political substance determined by Christian legacies of the flesh.⁶⁵ Though, also significant are systems of thought that are entirely non-Western, that have not developed within or been derived from a Western tradition of metaphysics, onto-theology or bio-onto-theology. The discussion that follows is a turn to the East in asking how a division in thinking living and non-living happens, whose legacy in the West was established with Aristotle. In classical China, as David Hall stresses, following sinologist Arthur Graham:

The 'existential' verb, *you*, 'being' overlaps with the sense of 'having' rather than the copula, and that, therefore, *you*, 'to be', means 'to be present', 'to be around', while *wu*, 'not to be', means 'not to be present', 'not to be around'. ... *Wu* does not indicate strict opposition or contradiction, but absence. ... Thus, the *you/wu* distinction suggests mere contrast in the sense of either the presence or absence of *x*, rather than an assertion of the existence or nonexistence of *x*.⁶⁶

The inference here is that a philosophical tradition of ontology, of a question of being, of essence, never emerged. Nor did a philosophy of negation emerge (i.e., the question of non-being). There was no ex-nihilo creation. It was inconceivable

64 Anidjar, "The Meaning of Life," 715.

65 See Foucault's *History of Sexuality* series of publications, culminating in publication of *The Care of the Self* almost at the time of his death in 1984. Note also the posthumous publication of a further volume in this series in 2018, *Confessions of the Flesh*, (Gallimard, 2018). It has yet to be translated to English. Volumes I-III were: *The Will to Knowledge*, (London: Allen Lane, 1979); *The Uses of Pleasure*, (London: Penguin, 1992); and *The Care of the Self*, (London: Penguin, 1990). With Agamben, see *Homo Sacer: Sovereign Power and Bare Life*, trans. D. Heller-Roazen. (Stanford, CA: Stanford University Press, 1998).

66 David L. Hall, "Culture of Metaphysics: On Saving Neville's Project (From Neville)," *American Journal of Theology and Philosophy* 18 (3, 1997): 198.

to think the opposition of void and existence. Rather, there emerged a thinking of allusive resonance and bi-polar movement between elements—such as yin and yang—that are not oppositions, regulated by negation, but mutually resonant relations, whereby each already implicates a becoming-its-other.

In *Thinking Through Confucius*, the initial volume of a three-volume comparative study of classical Chinese and Western philosophical traditions, Hall and Ames address Western philosophical legacies, based on Aristotelian naturalism that transcends the 'natural' world and thereby defers concepts of the correlative, as do philosophies of the Hellenic and Hebraic traditions, which begin with ex nihilo cosmogonies.⁶⁷ I aim, here, to briefly introduce aspects of the work of Hall and Ames, as paradigmatic of engagements with non-Western philosophical thinking precisely as contestation of principles of transcendent and ex-nihilo thinking. Though I will discuss their work in more detail in the section following this, "Geo-logics for Living in the Anthropocene." Hall and Ames propose that Western philosophy's hierarchical dualisms, such as god/man, nature/culture, and man/woman, are coterminous with an originary and radical act of ex nihilo creation. Creation by a transcendent and anthropomorphic creator is the original progenitor of creatures as dependent creation. Classical Chinese thinking happens as immanent process while Hall and Ames characterize the major strands of the Western philosophical tradition as transcendent and substance based:

There is a direct relationship between the Anglo-European language of transcendence and the necessity to construe the world, and a fortiori the social world, in terms of substances. Thus, any recourse to transcendent principles inevitably leads to a substance view of the self. ... And it is such characterization that renders the agent into a substantial being – that is, a being with an essence, an essential "nature."⁶⁸

Hall and Ames stress that the major strands of Western philosophy are embedded in a transcendent onto-theological tradition that privileges substance-essences over a thinking of existence, the predominance of 'whatness', quiddity, what

67 David Hall and Roger Ames, *Thinking Through Confucius*, (Albany, NY: SUNY Press, 1987). The other two volumes are: *Thinking from the Han: Self, Truth, and Transcendence in Chinese and Western Culture*, (Albany, NY: SUNY Press, 1997); *Anticipating China: Thinking through Narratives of Chinese and Western Culture*, (Albany, NY: SUNY Press, 1995).

68 Hall and Ames, *Thinking Through Confucius*, 15.

something is, over that it is, that it exists. They also stress there are minor strains or strands of Western thinking that align more closely to Chinese thinking. At the time of writing *Thinking Through Confucius*, they especially mention the deconstruction of Derrida, and the minor philosophy of Deleuze, who traces a philosophical genealogy from the Stoics and Duns Scotus, via Spinoza and Leibniz to Hume, Bergson and Whitehead. There are other twentieth-century philosophers they could equally have mentioned, such as Foucault or his 'teacher', Georges Canguilhem, who supervised Foucault's doctoral thesis resulting in the important book, *History of Madness*.⁶⁹ Canguilhem's research was as a philosopher of the biological sciences, producing a revolutionising understanding of the notion of 'pathology' in his *The Normal and the Pathological*.⁷⁰ Elsewhere Canguilhem references Aristotelian philosophy in his conceptualisation of life and thought: "For Aristotle, soul was not only nature but also the form of the living thing. Soul was at once life's reality (*ousia*) and definition (*logos*). Thus, the concept of the living thing was, in the end, the living thing itself."⁷¹ Canguilhem's identification of auto-mobility as fundamental life principle follows Aristotle: "Life, identified with animation, thus differs from matter; the life-soul is the form, or act, of which the living natural body is the content: such was Aristotle's conception of life."⁷² Canguilhem's thought is distinguished by a clustering of philosophy, biology, and history and by an interest in the relationship between thought and life, where thinking takes on a certain vital force. In discussions such as "Machine and Organism," Canguilhem offers a radical reading of tools and machines as body prosthetics.⁷³ Ian Hacking develops this work of Canguilhem, pointing to its overcoming of Cartesian dualistic thinking, denying a binary difference between organism and machine, and prefiguring current post-humanist discussion around machinic life.⁷⁴

69 Michel Foucault, *History of Madness*, ed. Jean Khalfa, trans J. Murphy and J. Khalfa. (London & New York: Routledge, 2006).

70 Georges Canguilhem, *The Normal and the Pathological*, trans. C. R. Fawcett. (New York: Zone Books, 1991. See especially Foucault's "Introduction," 7-24.

71 Georges Canguilhem, *A Vital Rationalist: Selected Writings from Georges Canguilhem*, trans. F. Delaporte. (London: Zone Books, 2000) 303.

72 Canguilhem, *A Vital Rationalist*, 67.

73 Georges Canguilhem, *Knowledge of Life*, trans. S. Geroulanos and D. Ginsburg (New York: Fordham University Press, 2008),

74 Ian Hacking, "Canguilhem Amid the Cyborgs," *Economy and Society*, 27 (2-3, 1998): 202-216.

In terms of current post-humanist thinking, Eugene Thacker's *After Life* critiques current ontological frameworks which he describes as arising from two traditions: A dominant strand of post-Aristotelian thought that addresses life as a 'transcendent emanation'; and a second approach that has a 'more radical, heretical' orientation in which life is defined by negation, univocity-equivocity, and the concept of pantheistic immanence. Arabic, Chinese and Japanese traditions are also briefly discussed.⁷⁵ For Thacker: "The classical framework set out by Aristotle, and developed by post-Aristotelian scholasticism, still informs philosophical reflection on 'life' today—life as time (the affective-phenomenological), life as form (the biopolitical), and life as spirit (the politico-theological)."⁷⁶ On the affective-phenomenological, he characterises life as: "... neither a quality that a body has, nor a vital force separate from a thing that is vitalized, but the priority of immanence in itself, a continuum or network of affects in which individuated subjects are more effects than causes."⁷⁷ He addresses the challenge of: "... thinking a concept of life that is foundationally, and not incidentally, a nonhuman or unhuman concept of life."⁷⁸ This poses the paradox or conundrum of what a 'concept' would be of 'life' as foundationally nonhuman or unhuman, when 'concept' cannot itself be thought outside of human conceptuality. Basically, how is thinking not anthropology?

This conundrum is somewhat addressed in its *aporia*, in consideration of global ontological governance structures. In *Geontologies*, Povinelli foregrounds how extant political systems govern and maintain ontological frameworks.⁷⁹ She shifts from a Foucauldian focus on biopower, as governance through life (*zōē* and *bios*) and death to geontopower as that "set of discourses, affects and tactics used in late liberalism to maintain or shape the coming relationship of the distinction between Life and Nonlife."⁸⁰ While Povinelli notes that biopolitics is and has been subtended by geontopower (life/nonlife binary) she emphasises how current conditions – geological, meteorological, cultural – are bringing a reactionary governmentality of geontopower to the fore. In addressing governance structures in relation to conceptualisations of 'life', Povinelli argues that regional, as in Euro-

75 Eugene Thacker, *After Life*, (Chicago & London: University of Chicago Press, 2010).

76 Thacker, *After Life*, xiii.

77 Thacker, *After Life*, xiii-xiv.

78 Thacker, *After Life*, xv.

79 Povinelli, *Geontologies*.

80 Povinelli, *Geontologies*, 4.

American, thinking of life as biology is now globalised and normalised: “Western ontologies are covert bioontologies ... [which] measure all forms of existence by the qualities of one form of existence (*bios, zōē*).”⁸¹ Povinelli describes this conceptual colonisation as “... biontological enclosure of existence (to characterise all existents as endowed with the qualities associated with Life).”⁸² In order to speak to and around this biontological capture of existence, Povinelli uses the term “existent” to connote what might otherwise be named “life, thing, organism, being.”⁸³ Povinelli’s is an immanent materialist political analysis, diagnostic of the ways that ontology matters – literally in the sense of bringing into being (cultural practices, governance structures, economics) – and how associated governance structures can disable ontological disclosure:

The point of the concepts of geontology and geontopower is not to found a new ontology of objects, nor to establish a new metaphysics of power, nor to adjudicate the possibility or impossibility of the human ability to know the truth of the world of things. Rather they are concepts meant to help make visible the figural tactics of late liberalism as a long-standing biontological orientation and distribution of power crumbles, losing its efficacy as a self-evident backdrop to reason. And more specifically, they are meant to illuminate the cramped space in which my Indigenous colleagues are forced to manoeuvre as they attempt to keep relevant their critical analytics and practices of existence.⁸⁴

Povinelli notes how a Life / Nonlife binary is increasingly porous as various discourses problematize current conditions. Thus, she emphasises “[the] geological concept of the Anthropocene and the meteorological modelling of the carbon cycle, the emergence of new synthetic natural sciences such as biogeochemistry, the proliferation of new object ontologies (new materialists, speculative materialists, speculative realists, and object-oriented ontologies).”⁸⁵ These all together shift a cultural landscape. Anthropocenic emphases on Life (and Death) establish ontology as a key cultural ground and matrix. Driven by the life-

81 Povinelli, *Geontologies*, 5.

82 Povinelli, *Geontologies*, 5.

83 Povinelli, *Geontologies*, 5.

84 Povinelli, *Geontologies*, 5-6.

85 Povinelli, *Geontologies*, 14.

failings and extinctions of this age, Life is primary in the book *and* subject of a 'post-life' critique:

As the future of human life—or a human way of life—is put under pressure from the heating of the planet, ontology has reemerged as a central problem in philosophy, anthropology, literary and cultural studies, and in science and technology studies. Increasingly not only can critical theorists not demonstrate the superiority of the human to other forms of life—thus the rise of posthumanist politics and theory—but they also struggle to maintain a difference that makes a difference between all forms of Life and the category of Nonlife. Critical theory has increasingly put pressure on the ontological distinctions among biological, geological, and meteorological existents, and a posthuman critique is giving way to a post-life critique, being to assemblage, and biopower to geontopower. (14)

Povinelli describes our contemporary risks of being “captured by the competing claims of precarious natures and entangled existences, a wild proliferation of new conceptual models, figures, and tactics.”⁸⁶ She notes that if actual change is to occur there will have to be radical disruption to the Life/Nonlife binary and to who or what matters in the world: “Political topologies must allow existents that are not biologically and anthropologically legible ... to disrupt the Logos of demos.”⁸⁷ Povinelli points out that “meteorological and geological forms of existence are playing a part in the current government of demos ... economically, politically, socially.”⁸⁸ What is in question is whether, as the Anthropocene affects intensify, they will simply be absorbed or deflected by geontopower governance structures or whether they will radically “disrupt the material and discursive orders that prop up these forms of governance.”⁸⁹

Povinelli’s work travels territories that matter to this study. Her insistence on recognising the operations of “power, or governance, or governmentality” in respect to extant understandings of the Anthropocene is important for the way that it systematically reveals links between ontology, governance, ontologically-mediated economies of extractive capitalism, and this newly inaugurated

86 Povinelli, *Geontologies*, 15.

87 Povinelli, *Geontologies*, 142.

88 Povinelli, *Geontologies*, 142.

89 Povinelli, *Geontologies*, 143.

geological epoch.⁹⁰ In her chapter, "Can Rocks Die? Life and Death Inside the Carbon Imaginary," Povinelli describes a law suit brought by the Aboriginal Areas Protection Authority against OM Manganese Ltd for harm to an Indigenous sacred site named "Two Women Sitting Down."⁹¹ The "Two Women Sitting Down" site is a manganese outcrop – the manganese understood as the sacred blood of two 'women' dreamtime ancestors, a bandicoot and rat. During land-claim hearings for "Two Women Sitting Down" Indigenous testimony stated that the rocks are sentient ancestors to whom their human descendants have kin obligations. The mining company that owns OM Manganese is a large multinational company. Australian mining supported around ten percent of global manganese production at the time of the legal challenge, while the mining industry was supported, in an act of geontopower, by conservative Australian governments as a bulwark against the financial shocks associated with the global financial collapse of 2008.

Perhaps surprisingly, given the power differential of the claimants, the Protection Authority won the case and a small fine was set. As Povinelli notes, the geontopower response, on the part of the conservative Northern Territory government, was to seek to change the status of the Protection Authority, while in Western Australia legislation was proposed to enclose the meaning of 'sacred' within a biological rather than geological framework. Further, in order to argue the case within a bio-onto-legal framework, Indigenous claimants must translate a contemporary "analytics of existence" into a hermetically sealed, 'perfect' pre-contact traditionalism—thereby reinforcing ontologies of Life and Nonlife that do not represent their lived-experience or 'world-reality': "Rocks separate, divide, and assess different humans based on how, or whether, they differentiate Life and Nonlife."⁹²

The subtitle of *Geontology* is *A Requiem to Late Liberal Capitalism*. Povinelli notes that the scale of change needed to exceed the current "overrunning of all forms of existence by late liberal capital" is so radical that who we are now will change: "Thus a requiem: neither hopeless nor hopeful."⁹³ Povinelli ends *Geontologies* with an opening out, away from a binary ontology of Life and Nonlife, enabled by the emergent, incipient, and entrained failures of the Anthropocene and Meteorocene

90 Povinelli, *Geontologies*, 175.

91 Povinelli, *Geontologies*, 30-56.

92 Povinelli, *Geontologies*, 34.

93 Povinelli, *Geontologies*, 28-29.

(climate change). In the face of globalised extinctions, she suggests that it is in Nonlife that radical potential exists:

If we look to where and how life began, and how and why it might end, then how can we separate Life from Nonlife? Life is not the miracle – the dynamic opposed to the inert of rocky substance. Nonlife is what holds, or should hold for us, the more radical potential. For Nonlife created what it is radically not, Life, and will in time fold this extension of itself back into itself as it has already done so often and long. It will fold its own extension back into the geological strata and rocky being, whereas Life can only fall into what already is. Life is merely a moment in the greater dynamic unfolding of Nonlife. And, thus, Life is devoured from a geological perspective under the pressure of the Anthropocene and Meteorocene. Life is merely another internal organ of a planet that will still be here when it is not, when we are not, undergoing its unfolding, creating who knows what. Will Life be a relevant concept there?⁹⁴

Povinelli's strategy, in the use of the term geontology, is to contrast "components of nonlife (geos) and being (ontology) currently in play in the late liberal governance of difference and markets."⁹⁵ Her description of the 'cramped' space available to her Indigenous colleagues resonates with me as does her handling of the problematic identification of a Life Nonlife division. I want a more expansive territory as I describe another way of thinking life, as *nonlife's* unfoldings and refoldings. Povinelli's Nonlife is not a *Thanatos* or an ex-tinctive death-drive. The 'non' is not the work of negation or the negative. It is not an opposition to what is living. How do we then consider it? To return to our notion of refrain that began this chapter and to Deleuze's understanding of a radical immanence of immanence itself that he calls *life*: The refrain of life's territorialising, its telluric force is at once a centring sheltering and preserving and the cracking open of encircling, acceding to the *manare* of immanence, its flows, fissures and escapes to that life's outside but equally that outside-to-life coming in. The vertigo of pure immanence is that vertiginous movement. Yet movement is not reducible to extension in space. Deleuze's Spinozan radical immanence is equally Bergson's movement as qualitative intensity and not quantitative extensity. This suggests that what we adopt as Povinelli's Nonlife is a geological encounter with the qualitative

94 Povinelli, *Geontologies*, 176.

95 Povinelli, *Geontologies*, 5.

intensities of the inorganic as much as of the striated spacing of the organic. In our fourth and final refrain, we encounter this peculiar 'geos'.

4. GEO-LOGICS FOR LIVING IN THE ANTHROPOCENE

With "Geo-logics," I explore a wider thinking of life, one that includes the biologic, but extends further, as immanent geo-strata of living, contemporary Euro-American geo-logics. Testing limits to Life Non-Life distinctions, Sophia Roosth discusses crypto-biotic life, where an organism enters an a-metabolic suspended state. Roosth asks:

How quickly must life proceed to count as life? What defines life when the animating processes that mark the living slow into imperceptibility, as life deanimates, slackening or pausing from the temporalities of biological phenomena into epochs geological?⁹⁶

Roosth's probe tests the extent of a biological accounting for life. Her discussion of *matter* that 'transubstantiates' between the inorganic and organic defines "... organisms stilled in states of suspended animation ... classed as only problematically alive, not dead, yet nonetheless pervaded by a potent and vital potentiality."⁹⁷ Roosth's encounter with a liminal condition of life is part of a larger 'turn' in contemporary critical thought, variously described as an *ontological* or *ecological* turn. I would characterise this re-orientation as a *geo-onto-logic*, a *geontology*, extending beyond bio-logical definitions of life, to include a wider geosphere. As well, geontology engages traditional metaphysical categories of being, becoming, life itself within this geo-logical plane of existence. Geo-logics are the immanent relationality constitutive of the metaphysical distinctions between being and becoming or transcendence and immanence. We cannot so easily 'step outside' metaphysics except by repeating its favoured notions of transcendence and thereby all the more securely nestle into its grounding.

Geo-logics aim at shaking metaphysics, trembling its grounds. Geo-logics should not be mistaken, despite its name, for a new grounding. It is an immanent ground-trembling or seismic process. The Western tradition's inherited language

96 Sophia Roosth, "Life Not Itself: Inanimacy and the Limits of Biology," *Grey Room* (Fall, 2014): 56-81.

97 Roosth, "Life Not Itself," 57.

of metaphysics then becomes an obstacle in its concern with securing settlement, architectonic completeness and foundational solidity. Thus, my tactics are to encounter other languages and their concepts as ground-shaking geo-logics in order not so much to exit from metaphysics but to shake it loose from its transcendent binds. In this sense, this study addresses itself largely to Indigenous-Māori practices, especially mauri and whakapapa, as ways to encounter ontologically something other than transcendent metaphysical ontology, something un-grounding yet geo-, concerning *ek-sistence* rather than essence, immanence as de-centring 'centre'.

I think immediately of that chapter in *A Thousand Plateaus* that addresses geology: "10,000 B.C: The geology of Morals (Who Does the Earth Think It Is?)"⁹⁸ The chapter opens uncannily, with a geo-bio-logics:

The same Professor Challenger who made the Earth scream with his pain machine, as described by Arthur Conan Doyle, gave a lecture after mixing several of his textbooks on geology and biology in a fashion befitting his simian disposition. He explained that the Earth – the Deterritoralised, the Glacial, the giant Molecule – is a body without organs. This body without organs is permeated by unformed, unstable matter, by flows in all directions, by free intensities or nomadic singularities, by mad or transitory particles.⁹⁹

But things are more complicated than this, as Deleuze and Guattari explain: For there are also strata and layers, a certain forming of matter, "imprisoning of intensities or locking singularities into systems of resonance and redundancy ... organising into molar aggregates."¹⁰⁰ But what interests Deleuze and Guattari here is not a wholesale destratification, a privileging of flows and free intensities, but a thinking of stratification itself as composed assemblage of surfaces. Minimally strata come in pairs. Each strata pair is an assemblage of two surfaces. One surface is 'interstratum'. Yet the other surface faces something different. They call it 'metastratum'. This open surface is the body without organs, or plane of consistency. The relation life/non-life is an assemblage along these lines, a double-articulation of surfaces rather than a negating binary. Non-life is that body without organs, a seismic disturbance that cracks open strata without destratifying.

98 Deleuze & Guattari, *A Thousand Plateaus*, 39-74.

99 Deleuze & Guattari, *A Thousand Plateaus*, 40.

100 Deleuze & Guattari, *A Thousand Plateaus*, 40.

Such seismic disturbances have long figured in Western (European) philosophical traditions, infused as they have been from North Africa, from India, China, and the Islamic Middle East. These shock waves through Western strata of knowledge have most often been expressed as tropes of fluidity and change and figured by emphases on what is immanent to a thought or a being or correlative with a being-in-common, rather than as a being's definitional quiddity, its species-difference within a univocal genus or particularly within a universality. Such thought is especially evident in pre-Socratic philosophies, especially inasmuch as metaphysics is inaugurated with Platonism and consolidated with Aristotle, making a break from Heraclitean dynamism or the atomism of Democritus. This break relegates to a minor tradition of thinking a lineage from Lucretian turbulence physics, Spinoza's non-Cartesian immanence, Leibniz's monadology, to Deleuzian immanence or a current rhizomatic distribution of thought around the post-human, the vital, the material.¹⁰¹ In following chapters, the thesis discusses a range of philosophical positions in greater depth, from Deleuze's Stoic thinking, to Heidegger's fundamental ontology and more recent thinking on vital materialism and transversality in eco-logics.

Immanence – China and the West

I want to briefly return discussion to the work of Hall and Ames on classical Chinese thinking, in order to, as I mentioned above in the "Life's Lines" refrain, to enact a further geo-seismic shaking of metaphysical transcendence. If classical Chinese never had a verb 'to be', how could Chinese thinking possibly happen? From the viewpoint of Western metaphysics, no question of essence or existence could be asked from the point of view of something being as such. Yet, in a cosmos, such as that of classical Chinese, Hall and Ames assert: "There is no element or aspect that in the strictest sense transcends the rest. Every element in the world is relative to every other; all elements are correlative."¹⁰² Immanence, in this sense, affirms power thought here as *potentia*, rather than as *authority*. Possibility as agency resides within and through relationality. *Thinking Through Confucius* engages a project of cross-cultural transfer between classical Chinese thinking

101 See, for example, Michel Serres, "Extract from *The Birth of Physics*," trans. D. Webb. *Parrhesia* 27 (2017): 1-12; Serres, *The Birth of Physics*, trans. D. Webb and W. Ross. (London: Rowman & Littlefield, 2018); Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature*, (Boulder, CO: New Science Library, 1984).

102 Hall and Ames, *Thinking Through Confucius* (Albany, SUNY Press, 1987).

as correlative or immanent, given the emphasis on inter-related worlding, and a *Euro-American* or *Anglo-European* metaphysics with its transcendent philosophy of being. In devising this project, Hall and Ames were painfully aware of an *aporia* that is somewhat central to my own research project. Classical Chinese thinking and Western metaphysics are so radically different in their 'grounding' thinking that one is faced with the impossibility of a scenario where one can be translated into the other. To approach Chinese thinking from the West is immediately to pose a question of being foundational to transcendent metaphysics: What is classical Chinese thinking? What are its categories, its origins, its limits or bounds? None of these conceptual notions actually happen in Chinese thinking. Equally to commence with classical Chinese thinking is to ask how Western metaphysics thinks in an allusive resonance of the relationality of a this and a that, whose 'definition' is entirely situational, performative and contingent to the circumstantial. There are no categories in Western thinking correlative to this. How do Hall and Ames proceed? They opt for or prefer to favour the radical immanence of Chinese thinking in order to try to translate that to Western metaphysics and thereby challenge Western orthodoxies of grounding knowledge. This dislocating work is as much a book on Western thinking, and how to tremble its ground, as it is a book on China and its Confucian legacies.

While this book is now more than thirty years old, it remains a compelling exploration of a method its authors term cross-cultural anachronism, wherein they explore Confucian thinking through contemporary Western philosophic concerns in order to understand Confucius in relation to current conditions and to acknowledge that one always "begins to think *where one is*."¹⁰³ The writers describe the ways that *change*, in the emphasis *Anglo-European* thought gives to this notion, has drawn attention to alignments between minor or non-dominant *Western* thought and classical Chinese thinking. In discussing what has distorted scholarship around Confucius, Hall and Ames acknowledge and address what they term: "... the mostly unconscious importation of philosophical and theological assumptions ... associated with the mainstream of Anglo-European classical tradition."¹⁰⁴ They begin by asserting the need to seek and foreground particular cultural presuppositions: "... those usually unannounced premises held by the members of an intellectual culture or tradition that make communication possible

103 Hall, & Ames, *Thinking Through Confucius*, 12.

104 Hall, & Ames, *Thinking Through Confucius*, 7.

by constituting a ground from which philosophic discourse proceeds."¹⁰⁵ They are careful to affirm the potential instability and complexity of Chinese *and* Western traditions such that these assumptions retain a certain agency or mobility.

A key contrast Hall and Ames identify is the primacy of concepts of transcendence and immanence respectively within *Anglo-European* and classical Chinese traditions. Unacknowledged assumptions about transcendence where, for example, ideas or principles may exist independent of the Cosmos, can corrupt Western readings of Confucian thought. Rather, *Thinking Through Confucius* requires an alignment of thought towards a "language of immanence grounded in the supposition that laws, rules, principles or norms have their source in the human, social contexts which they serve."¹⁰⁶ In comparative philosophy, one can only: "... attempt to articulate the other tradition that, by virtue of some underlying similarity, can be reshaped and extended to accommodate novel ideas."¹⁰⁷ Hall and Ames propose that process philosophies, such as those developed by Bergson or Whitehead, offer potential points of alignment towards a Confucian ontology of event. They note that recourse to exoteric thought and the rise of comparative philosophy was, to a degree, assured, given that these twentieth-century philosophies of process sought ways to articulate 'non-substantialist' thinking:

There is a direct relationship between the Anglo-European language of transcendence and the necessity to construe the world, and a fortiori the social world, in terms of substances. Thus any recourse to transcendent principles inevitably leads to a substance view of the self. ... And it is such characterization that renders the agent into a substantial being – that is, a being with an essence, an essential "nature."¹⁰⁸

Confucian philosophy, on the other hand, entails an ontology of event, not substance. Immanence thinking of the Confucian tradition emphasises a "... concept of self as an ethical agent."¹⁰⁹

105 Hall, & Ames, *Thinking Through Confucius*, 11.

106 Hall, & Ames, *Thinking Through Confucius*, 14.

107 Hall, & Ames, *Thinking Through Confucius*, 14.

108 Hall, & Ames, *Thinking Through Confucius*, 15.

109 Hall, & Ames, *Thinking Through Confucius*, 15.

This notion of ontology-of-event is one of three key understandings of an immanence of cosmos. A second understanding is the status of 'order'. It is also significantly differentiated in Confucian thinking in that order becomes a function of process and is thus realised through immanent inclinations, while a transcendent order is preordained as an instantiation of exogenous determinations. It could be God's design, or nature's laws, mathematical and geometrical laws of a physical universe or society's juridical decrees or normative determinations.¹¹⁰ Thirdly, there is the question of how *creativity* is understood: "[For a] Judaeo-Christian notion of *creatio ex nihilo*, creativity is often understood as imitation of a transcendent creative act. In Confucian terms, creative actions exist *ab initio* within the world of natural events and are to be assessed in terms of their order of specific social circumstances."¹¹¹ Hence immanent worlding has three primordial 'structures' or conditions: entities are evental and not substantial – relationally temporal rather than present-at-hand; the categorical is not exogenous but immanent to any given evental milieu – order is a function of evental process; and entity-emergence is not creation as production *ex-nihilo* – there is no productionist metaphysics requiring a transcendent agent-producer.

Another key implication of immanence thinking in this context is the correlative polar shuttling that occurs between 'conceptual' poles, investing these conditions in each other rather than separating them. One may think momentarily here of the shuttling that Deleuze and Guattari discover in strata assemblages, between surfaces as interstratum and metastratum. In a Confucian cosmos: "[There is] no element or aspect that in the strictest sense transcends the rest. Every element in the world is relative to every other; all elements are *correlative*."¹¹² Classical Chinese thinking is described as a polar '(non) metaphysics', where a continuum exists between two poles. By comparison, Western dualistic categories: "... encourage an essentialist interpretation in which the elements of the world are

110 Hall, & Ames, *Thinking Through Confucius*, 16.

111 Hall, & Ames, *Thinking Through Confucius*, 17.

112 Hall, & Ames, *Thinking Through Confucius*, 18. Note that 'correlativism', as discussed by Hall and Ames in relation to Confucian thinking, should not be mistaken for 'correlationism' as discussed in contemporary literature on Speculative Realism, and as introduced by Quentin Meillassoux in *After Finitude: An Essay on the Necessity of Contingency*, trans. R. Brassier (London & New York: Continuum). Though there is certainly an interesting discussion to be had on the relationality of these two notions.

characterized by discreteness and independence. By contrast, a polar explanation of relationships requires a contextualist interpretation of the world in which events are strictly interdependent."¹¹³

One of the projects of *Thinking Through Confucius* is to sensitise its readers to the culturally determined assumptions operating within their own histories of systems of thought. Similarly, the French sinologist, François Jullien, addresses Confucianism with a further intent to see *Western* philosophy from "the outside," such that its characteristic assumptions or processes are foregrounded. He suggests:

We will see that [our Western system of thought] is based on what is hypothetical and probable rather than on what functions automatically, that it favors a single and "transcendent" pole rather than interdependence and reciprocity between two poles, and that it values liberty rather than spontaneity. ... The originality of the Chinese lies in their indifference to any notion of a *telos*, a final end of things, for they sought to interpret reality solely on the basis of itself, from the perspective of a single logic inherent in the actual processes in motion. ... Let us use this new appreciation ... to decipher from the outside our own intellectual history – now so familiar to us that we can no longer see it as it is – so as to reveal our own a priori assumptions.¹¹⁴

These assumptions are summarised by Jullien in these terms: "Chinese thought differs essentially from Greek thought in its inclination to operate not in terms of being (that which is eternal), but in terms of becoming (change)."¹¹⁵ From this, Jullien asks us to:

... imagine a new "physics" and stop thinking of nature abstractly in terms of fundamental opposites (matter and form, potentiality and actuality, essence and accident) or the terms later substituted for the canonical formulations (for Aristotle's *Physics* certainly was the seminal work for Western philosophy, lurking always in the background and thus never really "thought through"). Let us instead

113 Hall, & Ames, *Thinking Through Confucius*, 19.

114 François Jullien, *The Propensity of Things: Towards a History of Efficacy in China*, trans. J. Lloyd. (New York: Zone Books, 1995) 17-18.

115 Jullien, *The Propensity of Things*, 91-92.

experience “physics” as the “single breath at the origin of things, forever circulating,” which flows through the whole of space, endlessly engendering all existing things.¹¹⁶

In this call to outline a new physics, as a rethinking of ‘nature’, influenced by Chinese process thinking for change and differentiation, we hear an echo of contemporary critical thinking around new materialisms, object-ontologies, and immanence ethics. Some kinds of folding are occurring here, as these various strands of critical thinking reference ‘nature’ or physics or ontology-as-being-becoming, referencing, that is, a particular plane of existence that incorporates the human, and is attentive to, or constitutive of the *geo* as seismic (un)grounding.

This research brings together those cultural or discursive locales that address a geo-logical, immanent field, working with a concept of life as *assemblage*: Life as field, as clustering-networking. How does this notion of assemblage resonate with that deployed by Deleuze and Guattari in their writings on schizophrenia and capitalism? Any ‘life-field’ has its coherency and trajectory. Yet this trajectory is currently being disabled or derailed by another assemblage, that of the Anthropocene. As already introduced, ‘assemblage’ references Deleuze and Guattari.¹¹⁷ Assemblage has multiple agencies in *A Thousand Plateaus*. And there is more than one way to read or ‘deploy’ this notion. The term ‘assemblage’ translates Deleuze and Guattari’s French ‘*agencer, agencement*’. There is a question as to the aptness of this word ‘assemblage’ to translate just what Deleuze and Guattari mean.¹¹⁸ That question, ironically perhaps, repeats what we have been saying about classical Chinese thinking. Does assembly, or assemblage, infer the accomplishing of a pre-figured design that would be the work of an *arche-tekhnē*, a *demiurge* in all its transcendence? Or would it be processual becoming from out of the intensive flows of unformed matter, where assemblage yet leave within its machinic assemblages the surfaces of a body without organs? Inevitably, in any account of usage, one recognises ‘use’ as abrasion, wear-and-tear that is also collaging-contamination in and of placing and misplacing. In *designating* assemblage as multiplicity, Deleuze and Guattari suggest multiplicity is a condition

116 Jullien, *The Propensity of Things*, 91-92.

117 Deleuze and Guattari, *A Thousand Plateaus*, 43-45.

118 See Ian Buchanan, “Assemblage Theory, or, the Future of an Illusion,” *Deleuze Studies* 11 (3, 2017): 457-474. See also an earlier discussion by Buchanan on the notion of assemblage: “Assemblage Theory and Its Discontents,” *Deleuze Studies* 9 (3, 2015): 382-392.

of being. Yet, this multiplicity may still have inherent coherency. Ian Buchanan suggests the etymology of agencer infers a condition of design or composition as piecing together as with, for Guattari, a *refrain*.¹¹⁹ Hence, the question is whether such piecing together as 'assembly' has a designated and preceding order to it, or whether such *agencement* is a gathering together without any implicit order – ontology-of-event?

Thus, as Buchanan notes: "While true assemblages are contingent, their outputs are not. Indeed, what would be the point of the concept if this were the case? As Deleuze and Guattari say, given a certain effect, what kind of machine (assemblage) is capable of producing it?"¹²⁰ Effects and causes are radically separated. In summary, Buchanan suggests:

Firstly, the assemblage is not a thing in the world – it is assemblages that explain the existence of things in the world, not the other way round; secondly, assemblages are structured and structuring (not purely processual), that is one of their principal processes; thirdly, assemblages have a logic, an operational sense if you will, that can be mapped – one always knows what is possible and what is not possible within a given assemblage; and, lastly, assemblages always strive to persist in their being, to use a Spinozist turn of phrase – they are subject to forces of change, but ultimately they would always prefer not to change.¹²¹

So, within a study addressing systems-change within a condition of Anthropocenic collapse, the concept of assemblage may have value as an agent of action and a concept concerned with 'work' rather than with truth, value or 'meaning'.¹²² Buchanan notes:

119 Buchanan, "Assemblage Theory, or, the Future of an Illusion," 458.

120 Buchanan, "Assemblage Theory, or, the Future of an Illusion," 461. Buchanan cites Deleuze and Guattari, *Anti-Oedipus: Capitalism and Schizophrenia Vol. I*, trans. R. Hurley, M. Seem and H. R. Lane. (Minneapolis: University of Minnesota Press, 1983) 3.

121 Buchanan, "Assemblage Theory, or, the Future of an Illusion," 463.

122 Deleuze and Guattari, *Anti-Oedipus*, 109.

What is of central importance – and the reason why the assemblage is such a powerful concept – is the issue of what it takes to yoke together these two dimensions in the first place: this is what the assemblage does. We have to stop thinking of the concept of the assemblage as a way of describing a thing or situation and instead see it for what it was always intended to be: a way of analysing a thing or situation. Concepts should bring about a new way of seeing something. ... [For] Deleuze and Guattari, the critical analytic question is always: given a specific situation, what kind of assemblage would be required to produce it? ... In this way it points to different kinds of entities, non-discursive and discursive (or better yet, performative) that have been yoked together. However, it must be emphasised here that the assemblage is the yoke, not the product of the yoke. This is why the comparison with Greimas's concept of the actant is valuable: it helps us to see that the assemblage is a virtual entity with actual effects.¹²³

Assemblages are contingent, causal models that link together the heterogenous, the discursive and nondiscursive, concepts and matter. These are analytical constructs. Perhaps central to the very potential of an outcome for this research is the question of whether assemblages can come into material being through design-as-process, through more iterative, processual means, through tests and case studies that over time assemble together a condition that has *agencement* or composition, that is structuring, and has a coherent trajectory. Design, in a conventional sense of thinking that word, would then be after-the-fact, so to speak. Design would be what we recognise as this or that in terms of making sense of what it is. This would be a radically non-productionist mode of thinking design. To think the radical immanence of the Anthropocene is to think it as assemblage, to stop describing the Anthropocene as transcendent cause of a multiplicity of effects and to consider the Anthropocene as analytical situation, as immanent cause, yoking of actual effects immanent to their cause and not emanating from their cause. Such a project suggests, perhaps, renovation rather than whole-scale destruction of the Anthropocenic assemblage, which may make for less resistance to forces of change. As assemblage, the Anthropocene is a contingent rather than necessary structuring model. To encounter the Anthropocene as Deleuze and Guattari might is already to slide along the continuum to an immanent (un)grounding of, or as, the geo. Assemblages are inventions for explaining real effects. In another sense, I am *deconstructing* the Anthropocene in the way Derrida uses the notion with respect

123 Buchanan, "Assemblage Theory, or, the Future of an Illusion," 472-473.

to metaphysics. There is no getting outside metaphysics or the Anthropocene. At best, we shake or tremble its structures to show the fragile moments.¹²⁴ Indeed, this is precisely what Martin Heidegger meant by 'destruction' or *abbau* with respect to metaphysics. Deleuze and Guattari do similar, though not coincident, things.

An *Anthropocene assemblage* is the immanent analysis of real effects that are multiple, including global carbon, plastic and radiological pollution, registering in the atmosphere, lithosphere or hydrosphere. The assemblage poses contingent structures as causal frames in attempts to make sense of things happening such as catastrophic failures of life systems. If for Deleuze and Guattari, the critical analytic question is what kinds of assemblages or 'machines' would produce these real effects, I question if this may provide an assemblage, a mapping of what is possible, in order to move 'beyond' the Anthropocene. Is there a 'beyond' to Anthropos and its epoch of catastrophe?¹²⁵ This crucial question is posed in two ways: One asks if a 'tipping point' of planetary extinction has been reached, questioning survival of all species as such. Though drastic, this is an empirical question, though one whose ontological ground yet requires further questioning in its calculative reasoning. The other asks, ontologically, geontologically, if there is a 'beyond', an outside, to the Anthropocene, not as structuring causal engaging with effects but as structuring structure of Anthropos? Though one immediately sees the transcendent moment in this, that moment of an 'outside', a 'beyond' an 'Other'-than-this for which

124 See, for example, Jacques Derrida, "Force and Signification," in *Writing and Difference*, trans. Alan Bass. (London: Routledge, 2001) 1-35. Derrida suggests: "Structure is perceived through the incidence of menace, at the moment when imminent danger concentrates our vision on the keystone of an institution, the stone which encapsulates both the possibility and the fragility of its existence." 4.

125 This question of a 'beyond' is precisely the address by the Spinozist scholar, Eugene Holland, for his contribution to the *Deleuze Studies* issue on the Anthropocene. See Holland, "On/Beyond the Anthropocene," *Deleuze Studies* 10 (4, 2016): 564-573. Drawing from his book, [*Nomad Citizenship: Free-market Communism and the Slow-motion General Strike*, (Minneapolis: University of Minnesota Press, 2011)] Holland's trajectory resonates with my aim for an ontological disclosure of the human as 'Anthropos assemblage' which would in some ways coincide with Holland's ontology of the 'nomad citizen'.

there is transcendence at the heart of the immanent. Would such a thing be an assemblage then? Would it yoke together the various geo-logics I have described or are they, themselves, Anthropocenic assemblages? Might it 'produce' otherwise in an Anthropocene where *Anthropos* comes to stand for connection? Our question is, then: How do we 'contain' the infinity and vertiginous movements of life as pure immanence, *manare* as flows of unformed matter? How does stratification happen, assemblages composed, such that extinction is both more and less than real?

VERTIGINOUS IMMANENCE

Curiously, the word 'refrain' has several meanings. I have borrowed one from Deleuze and Guattari, a rather complex one that has guided, in a way, the life lines of this chapter. Commencing with discussion of the Anthropocene, my aim was to develop a particular territory, plan it out a little, occupy it though in order as well to find its porosity, its lines of escape and moments of permeability. A second refrain cracks open or seeps into these striations, this territory of the Anthropocene, various life lines that cross and recross it but also de-territorialise it, move to other possible locales, while not leaving behind anthropocenic thinking. A third refrain discovers what yokes this assemblage we call life, splits its lines or linings, ushers in a biologies whose framing of life, whose biopowers, or biopolitics perhaps, centre too much on a vitalist organicism. Then a fourth refrain unsettles that territory of bios, of life for the living, not in terms of invoking a Thanatos, or death drive, but to find a more expansive understanding of life-as-non-life in a geo(bio)ontology. There, multiple refrains, multiple assemblages, multiplicity of a vertiginous immanence!

And that other notion of 'refrain'? – Well, of course, it means to hold back from doing something, to prefer not to act, to hold in potential what may well be actualised. One thinks of Melville's *Bartleby the scrivener*, the one who would prefer not to.¹²⁶ This 'refrain' ushers in radical contingency and a radical ethics opposed to all morality that is based on the principle of moral law, a principle essentially defining the necessity to be. This would be an ethics whose pronouncement would entail the potential to not be, to 'refrain' in a radical passivity from the question of

126 See Giorgio Agamben, "Bartleby, or on Contingency," in *Potentialities*, trans. D. Heller-Roazen. (Stanford, CA: Stanford University Press, 1999) 243-274.

being.¹²⁷ Between these two refrains, that of a qualitative intensity of movement and that of a radical passivity with respect to being, we look for cracks *in and as* Anthropocenic Assemblage, cracks that open, not transcendentally to another 'world' but cracks that move all the more complexly into the vertiginous immanence of life-non-life, not a new world, but a 'new earth'.

The inauguration of the Anthropocene finds a major, human-caused perturbation in this geo-biological cycling, where vastly fewer bio-entities are able to be activated out of the geo-spherical (hydro/atmos/geo)-matrix due to massive global change. The manifold crises of the Anthropocene operate in different registers, in regards to the question of living in this time. Concentrations of atmospheric carbon dioxide, resultant from human activities, have increased some forty percent since pre-industrial eras.¹²⁸ Carbon-mediated climate and global change creates diverse life-crises. Biological life-cycles and relationships are disrupted as ecological niches change faster than ecological webs can reconfigure. Tightly sequenced relationships between plants flowering, insects feeding, new life arising – often driven by temperature cues – become dislocated. Up to forty percent of the carbon dioxide released by carbon-emitting industries and processes has been absorbed into the ocean, there dissolving into carbonic acid.¹²⁹ Since the

127 See Giorgio Agamben, "XI: Ethics," in *The Coming Community*, trans. M. Hardt. (Minneapolis: University of Minnesota Press, 2003) 43-44: "This is why ethics has no room for repentance; this is why the only ethical experience (which, as such, cannot be a task or a subjective decision) is the experience of being (one's own) potentiality, of being (one's own) possibility – exposing, that is, in every form one's own amorphousness and in every act one's own inactuality. The only evil consists instead in the decision to remain in a deficit of existence, to appropriate the power to not-be as a substance and a foundation beyond existence; or rather (and this is the destiny of morality), to regard potentiality itself, which is the most proper mode of human existence as a fault that must always be repressed." 44.

128 Thomas F. Stocker et al, *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge and New York: Cambridge University Press, 2013).

129 Chen-Tung Arthur Chen, Hon-Kit Lui, Chia-Han-Hsieh, Tet-suo Yanagi, Naohiro Kosugi, Masao Ishii & Gwo-Ching Gong, "Deep Oceans May Acidify Faster than Anticipated due to Global Warming," *Nature Climate Change* 7 (2017): 890-894; Christopher L. Sabine, "Hot and Sour in the Deep Ocean," *Nature Climate Change* 7 (2017): 854-855.

Industrial Revolution, our seas have become in the order of thirty percent more acidic.¹³⁰ As oceans become more acidic, the viability of certain marine life-forms is compromised – it becomes harder to grow shells or coral reefs. The extreme effects of climate change may radically shift current ecological relationships, resources and environmental limit – thereby destabilising our ability to maintain human cultures as they currently exist. Globalised plastics pollution presents a different kind of crisis that perturbs the future of life as it affects the life-vitality of the geo-biological world.

How, then, might we attend to human being as part of a larger assemblage or composition of world being? How might we recognise being/becoming – living – as an always already immanent field of connection, not singular but rather, in its essential emphasis on being-with, a condition of life-as-assemblage? This four-part chapter has explored how an Anthropocene-assemblage might be thought through the yoking of *geontology* to the predominantly metaphysical-transcendent discourses that currently define and orient it. With regards to an ethics for wellness, designed entities – beings produced within a productionist metaphysics that returns to or freely circulate within our *geo* – should, geo-logically, be designed to accord well with this life-field as a whole. Design cycles fundamentally premised on transcendent thinking, premised thus on subject-object correspondences, have as their grave risk or danger a metaphysics of production for which a geontology as essentially non-instrumentalist or non-teleological, misses entirely the exogeneity of production cycles, with the appearance–or miraculous appearance–of things simply vanishing when no longer used. However, a cycling–assemblage or structuring structure even–between immanent geontology and transcendent instrumentalism could perhaps re-orientate the Anthropocene and its capacity, in order to support a viable life-field.

In the following chapter, “Life Time ... Life Field,” I orientate discussion to Indigenous-Māori concepts, as a way of bringing to this predominantly Western philosophical discussion something of the shuttling I earlier discussed when introducing the thinking of Chinese philosophy in relation to the West. My aim is to break open the settled territory of Anthropocenic thinking by introducing notions, ways of fundamentally understanding the world at odds with the West, in short, Māori ‘ontology’ (if this term does not already present an impossible moment of translation). I begin with discussion of the Māori notion of whakapapa which is variously translated as genealogy, or encountering one’s sense of identity

130 Sarah de Weerd, “Sea Change,” *Nature*, (550, 2017): 554-558.

and place in the world, one's being or existence. It is both noun and verb, and translates literally as 'whaka' (becoming) 'papa' (layering understood both temporally and spatially). Following this discussion, I introduce the notion of mauri as a concept that refuses or simply does not think established Western binaries, such as animate/inanimate, life/nonlife, establishing rather a living-world, te Ao, of human and non-human actors: winds, oceans, birds, whales, trees, mountains, activated by a vital life-force. Mauri does not 'have' in-animation. The inanimate does not *figure* and this enables a non-hierarchical ethics for life as the connective that becomes us in all our relations of force. While some suggest that mauri is the "vital life principle present in all objects, both animate and inanimate," a radical immanence for thinking mauri discloses there is no such binary, that all is alive—univocity of being in Deleuze's terms.¹³¹ In the concept of mauri and related geologic or geotic concepts for life, we see a releasing of the singularity of life as *bios* or *zōē*. Life is biological, but also hydrological, atmospheric, geological.

In considering the diverse immanence philosophies I've discussed, there emerges an horizon for thinking radical immanence across Indigenous thought and its others. This 'opportunity' of coexistence as allusive resonance of correlative thinking is the very performative thinking of radical immanence in action. With respect to the immanence of Māori thinking, Manuka Henare notes:

According to the workings of whakapapa, Māoriness encompasses other identities without obliterating or diluting them – one maybe Māori and Irish, but even a majority Irish ancestry does not make one any less Māori. The implications of this for analyses of cultural dynamism and the articulation of culture-based claims in postcolonial situations are significant and wide-ranging. If one can no longer assume that the effects of colonisation necessarily adulterate or demolish distinctive concepts, producing ontological hybrids, half-castes and cross-breeds, then it is necessary to acknowledge positions that may be wholly Māori and also European.¹³²

There are diverse 'strands' of immanence that connect (to) my own lifeworld, my

131 Bev James & Wellington Regional Council, *The Māori Relationship with the Environment*, (Wellington, NZ: Dept. of Conservation. Publication No. WRC/PP-G-93/29, 1993) 5.

132 Amiria Henare, Martin Holbraad, Sari Wastell, *Thinking Through Things: Theorising Artefacts Ethnographically*, (London and New York: Routledge, 2007) 64.

Māori *whakapapa*. To whakapapa, in its verbal agency, is to *cause* something to be placed in layers, as in a geo-stratal-gene-logic lineage. The Māori 'Papa' in whakapapa concerns surfaces, planes and earth. Deleuze and Guattari may be taking notes here! The act of 'taki whakapapa', reciting cosmogonic genealogy, links all entities on this plane of existence, as geological process, and spatio-temporal layering. When our cultural thinking and practices bear upon finite existence (the planet), we should recognise, analyse and design for finitude for our own sake, for the craft of our practices, but also for the sake of a wider life-assemblage within which we exist. And why 'should' we do this? Indigenous-Māori thinking and contemporary science suggest that we live within a relational field; we are multiple. Contemporary research shows that an ethics of altruism may be ancient, a pre-human ontology of 'being-with' that extends back to major bifurcations in the 'tree of life'. Ethical attention to others is prior to the human, it seems, and makes a call on our own ethical frameworks, particularly a call to that highly privileged proportion of humanity whose practices have precipitated the Anthropocene. Being in a 'developed' country, and being a designer, I am deeply implicated in producing the Anthropocene. Yet, since childhood I have been taught to have reverence for our place within the whakapapa of this living-world, and to develop a profound sense of the numinous beauty and power of this land. My existence is a continual shuttling (often literally in a fossil-fuel driven vehicle) between transcendence in instrumental and teleological design thinking, and immanence as resistive tactic to the everyday workings of and within the Anthropocene as acknowledgement of life-non-life.

The following chapter, "Life-Time ... Life-Field," introduces Indigenous-Māori thinking in building on Chapter Two's predominant Western orientation to the Anthropocene. Chapter Three is developed in two broad discussions, the first extends, in terms of Māori thinking, our opening proposition that the Anthropocene is time, though time not expressed or understood as clock-time, but rather as 'life-time'. The second part further extends discussion, again in terms of Māori notions, of territory as immanent field. Hence, it opens to questions of spatiality as life field. Discussion shuttles between Western understanding of life's temporalizing and inter-connectivity, and key Māori concepts that unsettle the groundedness of Western ontology. This chapter opens discussion on how ethics as mauri-ora (wellbeing) arises out of the concept of mauri as life force and thereby offers strategies for differentiating design practices including design at urban scales, predominantly taken up in Chapters Four and Five. As Gerardo

Ceballos suggests, life only lives as assemblage.¹³³ A design ethics for mauri-ora is not, then, another case of human exceptionalism, a heroic effort to save the planet, but is rather an ethics that arises out of life's fundamental interconnections. With Chapter Four, this ethics is explored through a range of case studies, architectural and urban. My aim is to critically analyse through these examples how mauri-ora becomes articulated as design ethics, modes of designing-with, with respect to other life, and with respect to wellness.

133 Gerardo Ceballos, Paul R. Ehrlich, Rodolfo Dirzo, "Biological Annihilation via the Ongoing Sixth Mass Extinction Signalled by Vertebrate Population Losses and Declines," *Proceedings of the National Academy of Sciences of the United States of America* 114 (30, 2017).

Chapter 3

Life Time...Life Field

INTRODUCTION

Decolonising Metaphysics

In Chapter Two I introduced a discussion of classical Chinese thinking by way of the work of Hall and Ames, as well as that of Jullien. Hall and Ames emphasised the difficulties in shuttling between differing philosophical frameworks that are at the same time deeply embedded cultural frameworks. What we call 'culture' is disclosive of deep structures to a people's thinking its world and itself. In this sense, we need to jettison a Eurocentric and especially Enlightenment precept of 'humanity', as if the *human* is essentially to be thought from out of the mould of Eurocentric Western metaphysics. There is no universal humanism just as there is no anthropocentrism. Chapter Two also emphasised the vertiginous 'nature' of a radical or absolute immanence, especially in the ways Deleuze discusses it. Absolute immanence is the immanence of immanence as life itself, a vertiginous life. A third notion to bring over from Chapter Two is that of 'non-life' introduced by Povinelli, as a tactic for radically addressing life from out of a geontology that does not refuse *bios* or *zōon*, but refuses all the same to make a distinction between the living and the not-living. For Povinelli, non-life does not designate the not-living but rather is *inclusive* in a transformative continuum of matter as flow, as *force* that we discuss as living.

In this chapter, discussion turns initially to philosophico-cultural frameworks that are decidedly non-Western, though this term, non-Western is a bit like Povinelli's non-life. It cannot ignore that the West is named in it. My aim is initially to introduce key notions within Indigenous-Māori understandings of existence, though in doing this I want to keep two exogenous frames in view. One is a colonising Western frame whose framework is principally grounded in

transcendent structures or worldviews. The second frame comprises key notions introduced in Chapter Two that hopefully prepare us in some ways for discussing Māori ontology in relation to Western understandings of immanence. I began this chapter with some summary note-taking in this regard. In introducing key notions in Māori thinking or in understanding Māori worldviews, I have recourse to one particular Māori philosopher and academic, Carl Mika, who in a series of quite recent writings, aims at elucidating precisely what needs to be said here regarding that shuttle between Aotearoa and the West. And perhaps the best place to begin this conversation is with a short article Mika wrote, as an academic supervisor of PhD candidates, on doing Māori research in institutional settings or locales derived entirely in structure and categorical thinking from the West: “Papatūānuku/Papa’: Some Thoughts on the Oppositional Grounds of the Doctoral Experience.”¹ Mika commences, as he does in a number of his other texts we aim to reference, with something fundamental to colonisation. There is ample evidence, self-evidence perhaps, in recognising colonisation as the confiscation of land and the making unlawful the speaking of Indigenous languages, both undisputed in the colonial history of Aotearoa. It is, perhaps, less self-evident to recognise how colonisation happens metaphysically. This is subtle and at times it seems positively progressive and enhancing. It most happens when the primordial understandings of one’s existence, expressive in language, are challenged precisely by a questioning-enquiry that simply asks for clarification, definition, the grounding of concepts, the certainty of understandings, when the question of truth becomes the question of methodical reasoning of empirical evidence. Papatūānuku, at times shortened to Papa, is a fundamental notion. It is at times translated as ‘earth’ or even ‘mother earth’, ‘gendered’ in this sense. It is basic or fundamental to other basic concepts for Māori: kaupapa and whakapapa. Kaupapa translates most directly as ‘body of knowledge’ and whakapapa as ‘genealogical layering’. But Mika aims to complicate such translating, whether that happens from Māori to English or it happens within Māori itself in terms of how meanings disseminate. This goes to the heart of metaphysical colonisation:

Whilst Papatūānuku is often reductively translated as “Mother Earth,” it holds more gravid implications for the researcher and the supervisor: it represents potential being, the request that a writer represents things in the world with some uncertainty; moreover it possesses

1 Carl Mika, “Papatūānuku/Papa’: Some Thoughts on the Oppositional Grounds of the Doctoral Experience,” *Knowledge Cultures* 4 (1, 2016): 43-55.

its own 'mauri' or life-force and can – if the supervisor and student withhold from defining it too restrictively – disrupt the certainty of academic text. ... It is important, however, not to rush too quickly into a thetic description of what kaupapa Māori/whakapapa/Papatūānuku are, for this would be to constrain their potential within the thesis.²

Mika goes here to the heart of a Western tradition that asks for clarity of definition, that asks, from a deep Western metaphysical tradition the basic question: What is x? Mika's own reading of the Western tradition is highly informed by the 'destructive' 'ontology' of Martin Heidegger, his destructing of ontology as such, a destructing of the question of Being inasmuch as that question was and is the questioning of the beingness of the beings that are, to the forgetting of Being itself.³ I want to go from here to discuss further a series of basic concepts in Māori thinking, whakapapa, whakaaro, mauri and mauri-ora, and ira, with the caveat just mentioned. In reading between Heideggerian thinking and Māori thinking, Mika transliterates Papatūānuku in terms of Heidegger's Being, though we need to foreground that, for Heidegger, Being needed to be put 'under erasure', crossed out as a 'concept' inasmuch as Being is not a being, withdraws in its capacity for un-concealing, and un-conceals only that there is primordial concealment. In this sense, Being, like Papa, is essentially unknowable as that which *is* the becoming-being of all. That the fundamental grounding of Māori thinking should be 'mysterious', unknowable potentiality-to-become and not a grounding actuality, makes such mystery easy to dismiss in a confrontation with the empirico-rationalism of Western science, just as, for example, much of Heidegger's thinking was dismissed as mystical by neo-Kantian logical positivism in the early decades of the twentieth century and continues to be dismissed in the ongoing ascendancy

2 Mika, "Papatūānuku/Papa," 43-44.

3 See Martin Heidegger, "§5 The Phenomenological Destruction," in *Phenomenology of Intuition and Expression*, trans. T. Colony. (London & New York: Continuum, 2010) 21-30. In this lecture course from 1920, Heidegger introduces and develops his understanding of phenomenological 'destruction'. This notion does not concern at all the destruction and erasure of a preceding philosophical tradition, in order to start again, but rather a careful 'destructing' of that preceding tradition in its epochal shifts such that the essential understandings of the naming of being come to the fore. Jacques Derrida borrows Heidegger's thinking of the destructing of the metaphysical tradition in coining his term, 'deconstruction'. See Derrida, "Différance," in *Margins of Philosophy*, trans. A. Bass. (Sussex: The Harvester Press, 1982) 1-28.

of analytical philosophy as instrumental mathematisation or 'cybernetisation' of existence.

In another article, "The Ontological and Active Possibilities of Papatūānuku: To Nurture or Enframe?" Mika reads Māori basic concepts against the grain of a Western colonising metaphysics and in deep resonance with Heidegger's destructing of that metaphysics:

Māori thought posits metaphysics as primordial beings that are participatory in voidness as much as presence. On the basis of self-organisation of those entities, things appear ... Māori have a concept of Being that is culturally embedded within a Māori metaphysics. One of the words that Marsden (2003) uses to convey the idea of becoming and Being, or the movement of a thing towards its ultimate (but interconnected, and hence non-foundational) goal is 'Papatūānuku'. The name Papatūānuku is one that refers to Being, both solid and active. This energetic yet essential embeddedness shows itself in a performative, Māori view of language, for instance, when a noun is also at once an active entity. A term is in a constant state of movement.⁴

Two key notions we draw from this citation are, firstly, the emphasis Mika gives to dismantling a metaphysics of presence as grounding ground of Western metaphysics. That notion of presence, of the making present to oneself of one's essential ground, is the hallmark of truth thought of as verification, or correctness, grounded in a tradition guided by the law of non-contradiction, *logos* as logic rather than as the arising self-showing of what is voided in its appearing. The second notion is a corollary of the first: that *logos*, language is not the instrumental preserve of *zōon logon echon*, of the 'speaking/rational animal' defined in Aristotelian thinking.⁵ Language is not a means by which we humans communicate our factual knowing of things. Language does not originate from out of human rationality. In more than one article, Mika offers the same powerful citation on Te Reo, Māori *logos*. He cites Charlotte Mildon recounting the words of Pa Delamere, a Māori healer:

In the grander scheme of things, traditional Te Reo [languages] are

4 Carl Mika, "The Ontological and Active Possibilities of Papatūānuku: To Nurture or Enframe?" *Knowledge Cultures* 4 (3, 2016): 58-71, 60.

5 See Aristotle, *The Nicomachean Ethics*, trans, J.A.K. Thomson. (London: Penguin, 1976) 75ff.

the voices of nature; the jolt of an earthquake, the song of a bird, the rustling of leaves, the rumbling of thunder before a storm, the piercing bolt of lightning in the night sky, the rushing waves of a tsunami, the cry of a whale, the fresh smell of rain on the earth.⁶

This understanding of language, of an opening to language as such, is crucial if we are to make sense of something else that Mika stresses. He notes that for Māori there is no equivalent to the English verb 'to be'. We noted the same issue with classical Chinese thinking. It was not as if, for Chinese or Māori thinking, 'being' was missing and needed to be found. It was not 'absent'. The inference here is that there was no metaphysics of presence for which or by which being held sway. But, equally, language did not make things present in their absence, as subsuming concept of a thing. Being, then, becomes something imposed on both Chinese and Māori thinking in processes of Western colonisation such that language, which Heidegger calls the 'house of being', becomes that which instrumentally inscribes an ordering-framing of presence-as-concept, annihilating the obscurity that characterises Māori metaphysics.⁷ This is discussed by Mika via the Māori notion of *raupapa*. The notion is linked to *Papa*, to a primordial withdrawing grounding out of which or from which beings come to appearance. *Raupapa* offers the notion of an 'ordering' or moulding of appearances as emerging from what essentially withdraws as primordial ground. How is that ordering to be conceived? Is it, too, to remain obscure in the uncovering or showing of beings that are? Or is it to be that which decisively positions and orders such that what is *yields* its 'properties', its instrumental means for some fashioned end? Is *Rau* to be thought essentially and creatively as mystery or is it to be conceived of as rational elucidation? Mika is alluding to the thinking undertaken by Heidegger on the essence of technology as 'enframing' or instrumental ordering of all beings as entities positioned for a producing-consuming for its own sake:

6 See Mika, "The Coexistence of Self and Things Through *Ira*," *Journal of Aesthetics and Phenomenology* 2 (1, 2015): 93-112, 98; Mika, "The Enowning of Thought and Whakapapa: Heidegger's Fourfold," *Review of Contemporary Philosophy* 13 (2014): 48-60, 49.

7 For discussion on language as the 'House of Being', see Heidegger, "Letter on Humanism," trans. F. A. Capuzzi. In *Pathmarks*, ed. W. McNeill. (New York: Cambridge University Press, 1988) 239-276. Heidegger questions whether what is essential to the human is something other than *zōon logon echon*, something other than living animal that *has* language. See especially 272ff on thinking building on the house of being.

What becomes important in the essential interpretation of raupapa-as-enframing is the tightening of Papatūānuku as the most fundamental perceptual schema of things in the world. The conditioning of perception that we are talking about here, then, is one that Heidegger (1967) described as an object being 'present-at-hand', in his critique of the metaphysics of presence, and of the tendency of modernity to insist that things manifest in a tightly prescribed way.⁸

The metaphysical colonisation of Māori basic concepts has led, then, to flattening out of creative and allusive understandings of notions such as whakapapa, which now tend to be levelled off to mean 'genealogy' in its Western understanding of historical descent, invoking with it in unquestioning ways, notions of Western historical temporality, historical recording and even the demarcation of the historical (or genealogical) from other disciplinary branches of knowledge. It is also levelled off in its archaeological inflection to 'layering' as with geo-strata in archaeology. Crucially, it becomes a 'concept' of something to be represented in a world of things made present by language. Gone is the withdrawal and voiding of Papa, for which whaka, as 'becoming' complicates the coming-to-appearance of beings, or things that are. Things never do fully come to appearance; in them mystery remains and must remain as that which opens to becoming. Hence whakaaro, loosely translated as 'thinking' is also levelled off to a term or concept referencing the recognition of what is present-at-hand: Epistemology constituted in a subjective knowing of an objective or object-like realm. Existence becomes 'experience' accountable in a thinking substance—an 'I think'—as knowing ground. Whakaaro then becomes instrumental encounter of a world of things prefigured conceptually. Again, gone the mystery of Papa, of a whakapapa whose unfolding is a creating-inventing each time of a primordial becoming via a whakaaro as ge-ontology, univocity of a vertiginous immanence, a life thinking its infinity, infinitely:

8 Mika, "The Ontological and Active Possibilities of Papatūānuku," 68. See Heidegger, *Being and Time*, trans. J. Macquarrie and E. Robinson. (London: Blackwell, 1962). Heidegger makes a distinction between two ways by which an existent is being-in-a-world. One concerns encountering things as present-at-hand: "It takes over a viewpoint in advance from the entity which it encounters" (88). Science is founded on present-at-hand circumspection. Opposed to this is what Heidegger calls 'readiness-to-hand', not a 'knowing' as objective encounter, but a "*dealing in the world*" (95), phenomenologically disclosed. See especially, "¶ 15. The Being of Entities Encountered in the Environment," 95ff.

Deep time though no longer time thought sequentially, from then to then, but ec-statically, at that 'point' – Moment (*Augenblick*) – where pure immanence and pure transcendence are indiscernible, are the same.⁹

A couple more terms, and then we can be underway. I have inferred something already about time, about whakapapa as a way of thinking time, though not a notion of time recognised in the Western tradition. I suggest something in Deleuze's absolute immanence opens a Western perspective to Māori deep time, as does, certainly for Mika, the most radical considerations of time from any thinker in the West: Heidegger's understanding of ec-static temporality and the history of Being. Heidegger's notion of 'history' for Being, for what primordially withdraws and is not a being, goes to the limits of any Western conception of 'history', historical agency, or temporalizing of temporality.¹⁰ How can Being be historical? Perhaps its closest approximation in thinking is the Māori understanding of whakapapa, of the 'sendings' or 'becomings' of Papa, of Being, which itself never 'is'. Two further important basic 'concepts' (though we retract this word even as we write it) are mauri and ira. Mauri tends to be thought of as life-force, and ira holds a crucial locutionary force for this research for its 'traditional' meaning was precisely the emerging coming-to-appearance of entities from out of primordial Papatūānuku. More recently, though, it was settled on as the translation of the Western notion of 'gene' in introduced discourses to Māori peoples of genetics and gene-

9 *Augenblick*, which translates from the German as the expression 'in the blink of an eye' is a term used infrequently by Heidegger, though used for moments of profound disclosure, a notion of 'moment' to be distinguished from any notion of the self-presence of the present. It is rather a 'moment' of ek-stases. See, for example, *The Fundamental Concepts of Metaphysics: World, Finitude, Solitude*, trans. W. McNeill and N. Walker. (Bloomington and Indianapolis: University of Indiana Press, 1995) 166. Here Heidegger addresses what he terms "that extremity of the most incisive moment of vision."

10 In *Being and Time*, Heidegger introduces the notion of the history of being as primordial possibility for any notion at all of human temporalising or historicizing. His 1946 "Letter on Humanism" further engages with this notion of the history of being, as does his 1938-1940 *The History of Being*, trans. W. McNeill and J. Powell. (Bloomington and Indianapolis: University of Indiana Press, 2015). See especially for a discussion on this difficult notion, Derrida's 1964 lecture course on Heidegger, *Heidegger: The Question of Being and History*, trans. G. Bennington, (Chicago: University of Chicago Press, 2016).

modification.¹¹ This chapter's discussion of Western science's genetics will draw on the complexity of this elision in translation. Again, we recognise the extent to which these notions come to be levelled off or flattened out to delineate imported epistemological frameworks from Western science or Western philosophy. Mauri, like the Chinese notions of *Qi*, or *Chi*, or *Shi*, is an animating force in all entities, a binding and connecting 'propensity' to cite Jullien on Chinese *Shi*.¹² All is potential, precisely in that sense Mika emphasises for understanding Papatūānuku. Thus, this univocal 'all' is not everything present-at-hand and available to yield up what it has. Rather, Papa is voided void (though we need to also discuss korekore precisely as the very positivity of voiding void), potential, constituting a force field of interconnected agencies, what, for example, Deleuze emphasises in Spinoza's radical immanence as the concatenation of the *nexus rerum*, the nexus or potentiality of thingness to 'thing', to actualise as singularity and to preserve itself in actualising. Mauri equates to force as radical potential, while ora signals life, though life not reducible to *bios*, to living things that can die, but rather to whatever has movement in mauri. Hence mauri-ora is life force, though orientated to what we would say is well-being. Mauri-ora is, in Western philosophical terms from Lucretius, a *clinamen*, a swerving force-movement that inclines to this or that. Its inclining is to preserving or maximising the relationality of Papa's potentialities. Ira becomes the self-showing of this swerve-becoming well-being, the emerging of entities from, and their submerging into, Papa's potentialities, its propensity to 'be'.¹³

"Life Time ... Life Field" aims to investigate the expanse and extent of these notions I have briefly outlined above, with considerable help from Mika. As can be seen, 'time' is not reducible to the clock ticking away and 'field' is not a simple spatializing trope that marks a series of forces in play. Time and field cannot actually

11 See Mika, "The Co-Existence of Self and Thing Through Ira," *Journal of Aesthetics and Phenomenology* 2 (1, 2015): 93-112.

12 François Jullien, *The Propensity of Things: Towards a History of Efficacy in China*, trans. J. Lloyd. (New York: Zone Books, 1995). *Shi* has a range of interrelated meanings, from disposition to potentiality, to unique circumstance to propensity.

13 See Mika, "The Co-Existence of Self and Thing," 104: For Māori, ira augurs a playful kind of thinking that is not reliant on essentialist notions of Māoriness but instead attempts to look beneath those rigid surfaces to come into contact with the hidden but persistent possibilities of a thing."

be separated out in good Western fashion within disciplinary divisions. Time, field, force, being and becoming are, as what I loosely (and poorly) term 'basic Māori concepts', a concatenation of a *nexus rerum*. They are radically immanent to a radically thought 'life'. They do not encounter a moment of transcendent hierarchy. The chapter, nonetheless, commences with temporality, with whakapapa and with ira. It then moves to mauri and mauri-ora, with the aim of bringing into discussion decidedly Western scientific accounts of Anthropocenic crisis and Māori ontological disclosure.

LIFE TIME

I, Amanda Monehu Yates (originally Goetz), am many: I am the 100 trillion microbes and 40 trillion human cells¹⁴ that constitute 'me' in this present moment; I also extend back as a continuous, brachiating line of life-vitality, back to my grandparents, and their great grandparents in pre-colonial Aotearoa/New Zealand, or in a Jewish enclave in Eastern Europe, or in Scotland or Ireland; back to the origin of Homo Sapiens some 150 million years ago; and back further to the very first quickening of life-force from abiotic matter encoding into an initial DNA or RNA song-sequence. Life is revealed here as a *continuum* of deepest time, an interlinked, sequencing condition made up of singular events (some carbon atoms, a section of DNA coding, an archaic bacterium, an early hominid, your maternal great-great-great grandmother, you) that together manifest in the most recent iteration to form as life— you or yours.

We who are alive at this time are so because our precursors, our ancestors' lives were maintained in a continuous relay of life-vitality. This research explores an expansive thinking of life as biologic and geologic, hydrologic, atmospheric. This life, our lives now, are singular, evanescent, and utterly unique as iteration; but these lives are also continuous through time as an unbroken lineage and durational condition extending from a primordial past with a potential

14 Ron Sender, Shai Fuchs, Ron Milo, "Are We Really Vastly Outnumbered? Revisiting the Ratio of Bacterial to Host Cells in Humans," *Cell* 164 (3, 2016): 337-340; See also Sender et al, "Revised Estimates for the Number of Human and Bacterial Cells in the Body," *PLOS Biology* (August, 2016): 337-340.

propagation casting forward our lifeline into a future. Each life that lives, now, at this moment, has a lifeline that has remained vital, alive, since the very first moment of kinetic inception as a replicating, differentially iterating, repeating song-cycle encoded in cellular chording (ACTG) of DNA and RNA- whakapapa. Explored in diverse ways-through indigenous cosmo-ontological conceptualisations and contemporary science-human life is revealed as an assemblage condition, a supra-organism of *chaosmic* time. When viewed from this vertiginously deep-time perspective, as a continuously sequencing cellular oratory and song-cycle, each individual life is revealed as inexpressibly precious and as a deeply extensive temporal reserve: Fragile container of an originary life-forcing-line that has persisted and remained through the slow grind of geological epochs, enduring, living through into this time of Anthropocenic foreclosure.

"Life Time" develops three discussions concerning a delineating of life, establishing a culturally-located platform for thinking life *and* design in the Anthropocene. The first, under the heading, "Whakapapa," discusses this Indigenous-Māori cosmological-relational framework as expression of deep time. As a way of thinking ontological relationality, whakapapa powerfully accounts for life as interconnection, as inclusive of mineral and biotic, hydrologic and atmospheric: Disclosive horizon of enmeshed relationalities. This may be contrasted with an Anthropocene characterised by transcendent structures for which design ethics is crisis-management. In what ways might we understand ourselves as geologic, proto-biotic, not singular nor isolated but inherently enmeshed in a world? Accordingly, a second discussion, "Vertiginous Time," aims to think Western life sciences according to the disclosive horizon of whakapapa, with the many discordant moments we may well expect in the confrontation of Western science and Māori thinking. Though this discordance is positive. It alerts us to ways whereby Western epistemological frameworks expose their ontological suppositions and where, equally, there may well be deep resonance between Western science's ontical disclosures and Māori ontological horizons. This discussion explores the temporalising of deepest time, to some four billion years ago, in a newly stabilising planet, when abiotic (geotic) matter may have self-assembled into proto-nucleic organisms that seeded the lives of those of us biotic entities currently alive, you and I, birds and invertebrates, small mammals, whales, the very last of the Maui dolphins, and all the many other unique life-forms who, after some 4 billions years of continuous serial-life, are currently on a track to Anthropocenic extinction. In a third line of questioning, I ask: How does this serialising of life happen? How are the intricate, unique, diversifications of life encoded and cast forward? Hence, a third discussion, "Ec-static Life," asks what is the nature of this

diverging, bifurcating-extinguishing, discontinuing-unfolding cycle of life? What are the structures, encodings, directives, sensings and communicating modes by which our lifelines live on? How are they in common? These three lines of enquiry, those of whakapapa, deep time and futural structures, together pose questions concerning how life is understood, in relation to time's ex-stases and epochal passage.

1. WHAKAPAPA

The notion of whakapapa has multiple registers: It is a cosmogonic framework, an evocation of human-nonhuman connection. As a concept or 'mind-map', whakapapa brings with it an immanent space where all entities have common origins and inter-relations continue to be created. The time-line of life described within whakapapa is prior to that of human existence. In whakapapa, we see a lifeline expressed at the scale of individual lives, *and* as a reiterating sequencing, a time-line of life as unbroken chain that extends into proto-biotic 'worlding' and further still into a cosmogonic coming-into-being. Whakapapa is ontological disclosure rather than ontical recounting of beings; it is iterative life-forces, lifelines and fields. Whakapapa gives evidence to an onto-logic bequeathed from Oceanic kin with similar cosmogonies, where all come from a common source and are inter-related. Whakapapa was customarily propagated through oratory-song-cycle. Commonly recited, whakapapa can trace along lifelines to common ancestors known within proximate East Polynesian cultures. For example, "Whiro is the most widely known of all East Polynesian navigating figures, known as Hilo in Hawaii, Hiro in Tahiti and tuamoty, and 'Iro in Rarotonga. Whiro's name appears in the generalogies of most tribes."¹⁵ While the details of cosmogonic whakapapa differ between Polynesian and Māori accounts and within Māori iwi and rohe, they do follow a similar trajectory, often beginning with a voided nexus or potential, then moving to activation, wherein primal ancestors arise, from which descend the entities and phenomena of this worlding.

Creation chants often begin with Te Korekore—sheer potentiality—and site of mauri

15 Rāwiri Taonui, "Whakapapa – genealogy – Whakapapa with links to Polynesia," *Te Ara – The Encyclopedia of New Zealand*: <https://www.teara.govt.nz/en/whakapapa-genealogy/page-3/>

and Te Po—as field of darkness.¹⁶ A condition of light, Te Ao, then follows during which time the earth and skies come into being. In this Indigenous-Māori paradigm all—mists, mountain-ancestors, mosquitoes, moon, stars, seas and whales, ferns, birds and humans—descend from primal immanence—Papatūānuku and Ranginui, Earth mother and Sky father. In certain iwi accounts (descent Tane), human beings are teina, junior siblings (Te Rangi-kaheke), upon who rests a cultural obligation to honour the tuakana, senior kin.¹⁷ Huhana Smith describes whakapapa as: “The essential expression of whanaungatanga, between a wider cosmology, people, environmental properties, and lands, so all entities were interrelated and interdependent.”¹⁸ Whanaungatanga translates as those co-mutual bonds formed within an intricate “socio-cultural-ecological system.”¹⁹ To taki whakapapa, or to recite cosmogonic chants, takes time. The oratory involves a deep journey ‘through’ time. Whakapapa is commonly recited at every hui (gathering) and tangihanga (funeral ceremony) to reinscribe familial connections between those gathered and to aid in a process of coming to know each other. Genealogical lines are traced and a depth of time to kinship is comprehended through layers of generations and across the space of the Pacific.²⁰ Orating whakapapa back many generations broadens the brachiate ‘architecture’ of ancestral lines, allowing for a greater number of potential relations, and acknowledgements of kinship connections. Tangihanga oratory often makes reference to cosmogonic whakapapa, accounts that extend back to the origins of the universe.

16 Michael Shirres, *Te Tangata: The Human Person*, (Auckland: Accent Publishers, 1997), 116-117; This follows Māori Marsden, “God, Man and Universe: a Maori View,” in *Teaohurihuri*, ed. M. King (Wellington: Hicks Smith & Sons, 1975): 196-197.

17 Mere Roberts et al, “Kaitiakitanga: Maori Perspectives on Conservation,” *Pacific Conservation Biology* 2 (1, 1995): 10.

18 Huhana Smith, “Hei Whenua ora ki te hākari: Reinstating the Mauri of valued ecosystems: History, lessons and experiences from the Hei Whenua Ora ki Te Hākari/Te Hākari Dune wetland restoration project,” *Ngā Māramatanga-ā-Papa Iwi Ecosystem Services Research Monograph Series No. 9*, (Palmerston North, NZ: Iwi Ecosystem Services, 2012): 16.

19 Smith, “Hei Whenua ora ki te Hākari,” 29.

20 East Coast kaumātua Āpirana Ngata describes whakapapa as ‘the process of laying one thing upon another’—A.T. Ngata, *Rauru-nui-ā-Toi lectures and Ngati Kahungunu origin*, (Wellington: Victoria University, 1972), 6.

As oral recitation, whakapapa is a constant remaking, not embodied or static knowledge. Its time is that of performative iterations differing from themselves, nuanced preservation *and* renewing of itself. Each new vocalization of whakapapa invokes it, makes it anew as does each new body born as a differentiated refrain within an unbroken (song)line. The expansive temporality of whakapapa is then a calling to that most ancient originary condition, the cosmogonic, as well as a construct of the now, always differentiating in response to those who are gathering and are drawn into the relational net, drawing out futures. As a meta-account of interrelation, whakapapa is a practicing-making-do for how to *be-with* a living-world.

Temporalising: Becoming-Earth

The real agency of whakapapa, in terms of this study, resides not in the extent to which it can be used instrumentally as a tool for knowledge, but rather in how it can be revealed as primordial process or ontological disclosure of being-becoming. Indeed, some Māori academics are highly critical of the reductive ways by which whakapapa is defined largely as only to do with the human and the genealogical, describing this as a form of hegemonic colonising, an un-grounding of Indigenous peoples and concepts.²¹ As I have intimated above and discuss here in more detail, Mika, for example, describes the way in which whakapapa becomes empirically constructed and brought into science discourse through descriptions of it as “taxonomy.”²² With Barlow’s work, Mika asserts that whakapapa becomes a “tool” for knowledge, a means by which to “organise knowledge.”²³ Whakapapa remains in this sense a prescriptive human construct which does not sit outside of or before our ‘understanding’ of it. In contrast, Mika describes the way that Leonie Pihama discusses whakapapa as that which comes before the human.²⁴ Mika,

21 Cheryl Smith, “Straying Beyond the Boundaries of Belief: Maori Epistemologies Inside the Curriculum,” *Educational Philosophy and Theory* 32(1, 2000), 43-51. Carl Mika, *Reclaiming Mystery: A Māori Philosophy of Being, in Light of Novalis’ Ontology*, (Unpublished PhD, University of Waikato, 2013).

22 Mika, *Reclaiming Mystery*, 228.

23 Mika, *Reclaiming Mystery*, 228.

24 Leonie Pihama, “Tihei mauri ora: Honouring our voices: Mana Wahine as a Kaupapa Māori Theoretical Framework,” (Unpublished PhD, The University of Auckland, 2001). <http://www.kaupapamaori.com>. Cited in Mika, *Reclaiming Mystery*.

following a number of Māori scholars,²⁵ positions whakapapa, in the context of a “holistic” Māori world: “Māori had a non-analytical, emotional/spiritual/mental/physical-at-once relationship with everything.”²⁶ Western metaphysics operates in a space other to that of Māori cosmologies: “Abstract rational thought and empirical methods cannot grasp the concrete act of existing [for Māori] which is fragmentary, paradoxical and incomplete.”²⁷ This is an immanent metaphysics that indigenous scholar, Vine Deloria, describes as a “first set of principles we must possess in order to make sense of the world in which we live.”²⁸

Interestingly, in discussing whakapapa, Mika often enfolds Western theory that – counter to dominant Western philosophies – explicitly addresses non-instrumentalist thinking and presents immanent analyses in which concepts, things, animals, forces exist collectively and in relation to each other: As already suggested, the philosophy of Heidegger and writings of Novalis are in particular focus here. With respect to Māori engagement in ontology, Mika notes that while the verb “to be” is not present in Māori languages, there is a problematising conception of “Being” and, therefore, ontology as such, in the sense, for example, that Heidegger simultaneously writes and crosses out Being *and* attributes primary importance to the activity of being-with as relation to others: “Being as primordial activity is not solely manifested linguistically but more importantly is focused on the disclosure of things in the world ... Being is as obvious to one in ... ‘comporting oneself towards entities as entities’ as when one uses the verb ‘to be’”²⁹ Whakapapa, as primordial activity of being-with, establishes an ontological

25 See Mason Durie, *Whaiora: Māori Health Development*, (New York: Oxford University Press, 1994); Māori Marsden, *The Woven Universe*, ed. C. Royal. (Auckland: Mauriora-Ki-Te-Ao/Living Unive, 2003), Te Ahukaramū Charles Royo, *Mātauranga Māori: An Introduction*, (Auckland: MKTA, 2009).

26 Mika, *Reclaiming Mystery*, 14.

27 Māori Marsden, “God, Man and Universe: A Māori View,” in *Te Ao Hurihuri: The World Moves On: Aspects of Māoritanga*, ed. M. King. (Auckland: Longman Paul, 1985) 163. Cited in Mika, *Reclaiming Mystery*, 14.

28 Vine Deloria Jr, *Power and Place: Indian Education in America* (Golden, CO: Fulcrum Resources, 2001) 4. Cited in Mika, “The Coexistence of Self and Thing Through Ira,” *Journal of Aesthetics and Phenomenology* 2 (1, 2015): 93.

29 Mika, *Reclaiming Mystery*, 37-38. Mika cites Heidegger, *Being and Time*, trans. J. Macquarrie and E. Robinson. (London: Blackwell, 1967) 23.

orientation where, critically, things in the world are understood to be ultimately interconnected.³⁰ Whakapapa comes to register as fundamental ontology (papa) for being-as-radical interrelation.

The term whakapapa is always already performative and in process, given its prefix 'whaka', often translated as 'becoming' or to do or make, to tend in the direction of, or cause something to come into being.³¹ Papa is earth, terrain, surface, field, flat platform, layer and, as Mika notes, orients to Papatūānuku (Earth Mother) as primordial being. Mika suggests that, in relation to each other, the constituent parts of the word – whaka and papa – offer a sense in which we "become ('whaka') earth ('papa')."³² Whakapapa is becoming-earth, it is a layering and orientation towards a ground that is immanent: "The earth is inescapable. A term denoting noun and verb at once, whakapapa reveals that all finite things in the world might move forward into new terrains but always within the world's primordial influence."³³ What is defining here, as Mika understands it, is the extent to which this is an ontology of relationality: "One becomes (whaka) by being predisposed towards the world ... what is paramount here is the nature of the self as an entity among others, not as a transcendent, autonomous entity."³⁴

Non-linear Time

A concept of ontological momentum or temporal flux is inherent within the whaka of whakapapa and more broadly within related concepts of mauri and korekore.³⁵ Mika refers to the etymology of the term, describing how "whaka" as transitional 'becoming' continually undermines the solid foundation that is papa.³⁶ Things are in movement as a continuous flow between objects: "a thing in the world is always in a state of flux, even though it appears to be constant."³⁷ Thinking (whakaaro) itself is part of this immanent becoming:

30 Mika, "The Enowning of Thought and Whakapapa: Heidegger's Fourfold, *Review of Contemporary Philosophy* 13 (2014): 48-60, 49.

31 See <http://maoridictionary.co.nz/word/9340>

32 Mika, "The Enowning of Thought and Whakapapa," 53.

33 Mika, "The Enowning of Thought and Whakapapa," 50.

34 Mika, "The Enowning of Thought and Whakapapa," 56.

35 Mika, "The Enowning of Thought and Whakapapa," 57.

36 Mika, "The Enowning of Thought and Whakapapa," 56.

37 Mika, *Reclaiming Mystery*, 133.

The sense of becoming that is inherent to the prefix “whaka” in whakaaro is of utmost importance here because it places the self at the mercy of the greater interrelationship of things in the world ... Listening to the sense of whakapapa, we can consider “papa” as an overall process of thinking that includes not just earth but other entities, such as sky, divinities, and mortality.”³⁸

Whakapapa is then material and conceptual, and experiential: it is an “unspoken movement that involves the active participation of Being, nature (finite objects in the world) and ira. All things are involved in an ongoing evolution of change and fluidity.”³⁹ Whakapapa is recognised as an inherently ontological unfolding, that “process of arrangement that Being undertakes.”⁴⁰

The time of this becoming world is non-linear: “Things in the world, such as trees, rocks, whenua and so on, rise up to engage in a horizon of time that is non-linear, and carry with them the current and past. The mauri or those objects forms complex relationships with ira in all settings – rural, urban, traditional or postcolonial ...”⁴¹ In discussing the fluid or discontinuous nature of time, Mika references Māori manifesting of ancestors within the lives of current generations.⁴² The becoming-earth of whakapapa asserts life as an iterating life-horizon immanent to this living-world. Vitality, whakapapa, as a processing of life’s becoming, establishes this life, my life now, as an impossibly deep temporality, my life’s vitality extending to the very first coalescing of the conditions for life-as-Earth. As disjunctive durational force that extends from the deep past and projects a trajectory into the future, whakapapa amplifies a notion of selfhood from that of ego-individual to existence

38 Mika, “The Enowning of Thought and Whakapapa,” 55.

39 Mika, *Reclaiming Mystery*, 285.

40 Mika, *Reclaiming Mystery*, 288.

41 Mika, *Reclaiming Mystery*, 280-281.

42 See Leonie Pihama, “Tihei Mauri Ora: Honouring Our Voices. Mana Wahine as a Kaupapa Theoretical Framework,” (Unpublished PhD, The University of Auckland, 2001); Tony O’Connor, “New Zealand’s Biculturalism and the Development of Publicly Funded Rongoa Services,” *Sites: A Journal of Social Anthropology* 4 (1, 2007) <https://sites.otago.ac.nz/Sites/article/view/28> Accessed 23 May 2018; L. Whitt et al, “Belonging to Land: Indigenous Knowledge Systems and the Natural World,” *Oklahoma City University Law Review* 26 (2001): 701-743.

as such, a being-with as unbroken divaricating web of generation, human and non-human. Life is revealed as primordial affirmation of being-with, being-as-becoming iterative.

2. VERTIGINOUS TIME

Circadian Geo-Biological Time

How do I move between whakapapa as acknowledging life-interconnections *and* contemporary Western sciences of life? As discussed in the introduction to this chapter, such an exchange between Indigenous-Māori approaches and contemporary Western science – and, equally, contemporary design thinking – recognizes moments of metaphysical colonization and further recognizes the need to go deep into Western epistemological framework to disclose their ontological suppositions. It is at this level that we can critique and reshape those Western frameworks for knowing, destabilising accustomed knowledge boundaries. This con- (or sub-) version attempts to find productive spaces of cultural difference. And so, I ask what might be the conditions at the originary pole of life's line? What might we stand to gain, in terms of a *geo(bio)ontology* for the Anthropocene, in exploring the origins of our matter, in the matter of this planetary body?

There have been over a trillion dawns and dusks since life began some 3.8 billion years ago. During that time the earth's daily rotation has slowed to a shade less than 24 hours—or 23 hours 56 minutes and 4 seconds to be precise. This predictable daily solar cycle results in regular and profound changes in environmental light, temperature, and food availability as day follows night. Almost all life on earth, including humans, employs an internal biological timer to anticipate these daily changes. The possession of some form of clock permits organisms to optimize physiology and behaviour in advance of the varied demands of the day/night cycle. Organisms effectively 'know' the time of day. Such internally generated daily rhythms are called 'circadian rhythms' from the Latin *circa* (about) and *dies* (day).⁴³

43 Russell Foster and Leon Kreitzman, *Circadian Rhythms: A Very Short Introduction*, (Oxford: Oxford University Press, 2017)
2: <http://www.veryshortintroductions.com/view/10.1093/ac-trade/9780198717683.001.0001/ac-trade-9780198717683-chapter-1>

Circa and *dies* indicate the periodicity of Earth's axial rotation that creates a day/night cycling of around 24 hours. Cellular life, *eukaryotic* organisms (cells with nucleus and membrane-encapsulated organelles) and some *prokaryotes* (unicellular organisms without nucleus), have circadian timing responses that structure geospherical rotation and solar time as an attuning and coordinating force for life-processes. Circadian rhythms are inherent to life-on-earth and biological circadian 'clocks' are understood to have co-evolved some three-to-four billion years ago alongside geological processes, particularly in response to daily light/dark cycles. Circadian rhythms drive the timing of life-processes in organisms in diverse ways, mediating every key aspect of behaviour, physiology and internal metabolic or biochemical activities.⁴⁴ Even most ancient organisms, such as *prokaryote cyanobacteria* (understood to have existed – as *stromatolites* – for at least 3 billion years)⁴⁵ have circadian clocks and a wide variety of species share the same biochemical oscillator mechanisms by which periodicity is indexed.⁴⁶ As Russell G. Foster and Leon Kreitzman note, there is a "consensus that the internal clock has been of vital importance in the evolutionary history of living things."⁴⁷

Geological cycling via axial rotation and a consequent solar cycle establishes a geotemporality that is deeply enmeshed with life-processes. As Paranjpe and Sharma emphasise, geo-temporal circadian rhythms coordinate the behaviour of a wide range of organisms: "... such as bacteria, fungi, fish, amphibians, reptiles, insects, mammals including humans as well as plants."⁴⁸ They attune their biological rhythms to regular environmental oscillations. Circadian clocks can entune exactly with their geo-spatial locale through a process of entrainment as they register geotemporal cues in environment, with light being a key cue. Geologically-attuned organisms are able to anticipate solar cycling as they sense-respond to geophysical time. Such awareness confers a real advantage and responsiveness to environment. Foster and Kreitzman describe the example of fish living in coral reefs: "It takes about 20-30 minutes for the eyes of fish living among coral reefs to switch vision

44 Foster and Kreitzman, *Circadian Rhythms*, 2.

45 Foster and Kreitzman, *Circadian Rhythms*, 2.

46 Carl Johnson, "Circadian Clocks and Cell Division," *Cell Cycle* 9 (19, 2010): 3864.

47 Foster and Kreitzman, *Circadian Rhythms*, 123.

48 Dhanashree A. Paranjpe and Vijay Kumar Sharma, "Evolution of Temporal Order in Living Organisms," *Journal of Circadian Rhythms* 3 (7, 2005): <http://www.jcircadianrhythms.com/content/3/1/7>

from the night to daytime state. A fish whose eyes are prepared in advance for the coming dawn can exploit the new environment immediately."⁴⁹

Organisms living in constant rather than cycling environments, such as in caves or deep oceans retain circadian clocks and photo-entrainment capacities. Cave-dwelling fish and millipedes, for example, continue to operate and entrain or attune to light/dark cycles.⁵⁰ This suggests that there is an adaptive advantage to circadian rhythms that is more than a relational enmeshing with a cycling environment. V. K. Sharma suggests that this geo-synchronised rhythm enables a concerted coordination of multiple internal metabolic processes.⁵¹ *Eukaryotes* (such as us) have circadian rhythmic expression of around ten to twenty percent of their genes while *prokaryotes* (without cellular nuclei) such as the cyanobacteria can have a much greater number of circadian synchronised genes. One study suggested that all genes were subject to circadian control.⁵² All *eukaryote* cells appear to be rhythmic, a process which seems to be driven by a biochemical oscillation or feedback loops. John O'Neill and Akhilesh Reddy have shown that human red blood cells, which lack a nucleus, operate in response to circadian cycling and can continue to do so in a constant lab environment.⁵³

The circadian system is enmeshed with cell-division cycles as a quality of biological life that is found from three billion year-old cyanobacteria, to microbial eukaryotes, to us.⁵⁴ As circadian rhythms are central to a wide range of biological life, so are they key to the sustaining of life's vitality in diverse ways. In mammals, a primary molecular 'clock' in the brain is activated by environmental cues, in turn activating

49 Foster and Kreitzman, *Circadian Rhythms*, 2.

50 Paranjpe and Sharma, "Evolution of Temporal Order in Living Organisms."

51 Vijay Kumar Sharma, "Adaptive Significance of Circadian Clocks." *Chronobiology International* 20 (6, 2003): 901-919; Vijay Sharma and Amitabh Joshi: "Clocks, Genes and Evolution: The Evolution of Circadian Organization," in Vindo Kumar, ed. *Biological Rhythms*, (New Delhi: Narosa Publishing & Berlin: Springer-Verlag, 2002) 5-23.

52 Foster and Kreitzman, *Circadian Rhythms*.

53 John S. O'Neill and Akhilesh B. Reddy, "Circadian Clocks in Human Red Blood Cells," *Nature* 469 (7331, 2011): 498-503.

54 Johnson, "Circadian Clocks and Cell Division," 6-14.

subordinate molecular timers in the body.⁵⁵ This molecular clockwork occurs through the rhythmic processing of circadian genes: "Multiple interlocked autoregulatory feedback loops result in a robust circadian variation in the expression and activity of ... [a transcription factor protein] over a 24 hour period, providing a driving force for circadian oscillation of the molecular clockwork."⁵⁶ These geologically-phased bio-chemical timers, activated by the interplay of earthly rotation and solar radiance, coordinate a range of bodily function with roles in the regulation of the autonomic nervous system, neuroendocrine system and in "cell proliferation, metabolism, senescence and DNA damage response."⁵⁷ Contemporary disruptions in circadian rhythm, such as those experienced by frequent long-haul flyers or shift workers and enabled by artificial lighting and long-distance flights, disrupt bodily connection to place at a cellular and molecular level: "Constant back-and-forth phase-shifts of environmental light cues resulting from rotating work schedules or chronic jet-lag, disrupt endogenous circadian homeostasis by uncoupling the central and peripheral clock coordination."⁵⁸ The loss of circadian homeostasis, common in modern societies, increases susceptibility to cancer in all critical organ systems and is linked with poor response to cancer therapies. Human cancer tissue itself displays impairments in the functioning of geologically-phased circadian genes.⁵⁹ Circadian oscillations need to be considered in relation to the timing of medications or surgeries. Studies in chronotherapy for cancer, where drug delivery is timed to phase with the patient's endogenous circadian rhythm, show significant benefits.⁶⁰ As an ancient geo-biological attunement system, solar-linked circadian rhythms enact a daily reiterating becoming-earth (whakapapa) in biological bodies.

55 Loning Fu and Nicole M. Kettner, "The Circadian Clock in Cancer Development and Therapy," *Progress in Molecular Biology and Translational Science* 119 (2013): 221-282. <https://www.ncbi.nlm.nih.gov/pubmed/23899600>

56 Fu and Kettner, "The Circadian Clock in Cancer Development and Therapy," 221.

57 Fu and Kettner, "The Circadian Clock in Cancer Development and Therapy," 221.

58 Fu and Kettner, "The Circadian Clock in Cancer Development and Therapy," 222.

59 Fu and Kettner, "The Circadian Clock in Cancer Development and Therapy," 222.

60 Fu and Kettner, "The Circadian Clock in Cancer Development and Therapy," 222.

Carbon Life

The precursors of our microbial ancestors are thought to have been self-assembled short-chains of RNA or DNA – ribonucleic acid or deoxyribonucleic acid. As basic units of hereditary information, genes are small sections of DNA. RNA is a delivery and processing agent that enables replicating and metabolic activity. These carbon-based nucleic acids code or enact cellular life's unfolding processes. The term 'nucleic' derives from the cellular nucleus, that site of DNA in more complex cells.⁶¹ Until recently, the specific mechanism for that ancient pivot from matter to the encoded matter of cellular life has been unclear. A recent study describes a potential process by which matter self-organises into those nucleic acids of life-chains from which carbon-based life is formed.⁶² Self-assembly into protobiotic material occurs under particular conditions that enable an "autocatalytic cycle favouring the growth of DNA chains, up to biologically relevant lengths."⁶³ Such self-assembly suggests a path for "an elementary form of pre-biological evolution."⁶⁴ These first nucleic assemblages are originary conditions for carbon-based life, commonly named *biotic*, from the Greek *bios* for finite or individual life. Microbes, such as bacteria or fungi, plants and animals, including humans, share, it is thought, a last universal common ancestor or LUCA.⁶⁵ This ancestor, while ancient, may be understood to be essentially 'modern' in that it would likely resemble any simple single-celled microbe.⁶⁶

All nucleic life, then, has a common ancestor, a common language in the form

61 Ralph Dahm, "Discovering DNA: Friedrich Miescher and the Early Years of Nucleic Acid Research," *Human Genetics* 122 (6, 2008): 565-581.

62 Fraccia et al, "Abiotic Ligation of DNA Oligomers Templated by their Liquid Crystal Ordering," *Nature Communications* 6 (6424, 2015): 14.

63 Fraccia et al, "Abiotic Ligation," 1.

64 Fraccia et al, "Abiotic Ligation," 14.

65 Christian de Duve, *Singularities: Landmarks on the Pathways of Life* (Cambridge: Cambridge University Press, 2005) 6, 161.

66 De Duve, *Singularities*, 6. See for the notion of LUCA as a collection of cells, rather than entity or thing, a "process characteristic of a particular evolutionary stage": Carl Woese, "The Universal Ancestor," *Proceedings of the National Academy of Sciences of the United States of America*, 95, (12, 1998): 6854-6859.

of DNA with its production function via RNA, and the same basic structures and processes in the form of cells and metabolisms. This life utilizes the same basic building blocks, based on carbon "... consisting mainly of sugars, amino acids, fatty acids, and nitrogenous bases. ... What largely differentiates organisms chemically is the manner in which these building blocks join into larger assemblages."⁶⁷ All life is formed from one or more cells, a volume encapsulated by a carbon-based bimolecular membrane layer that is, again, consistent across all nucleic life. This carbon-based life has its own metabolism. The multiple chemical reactions that occur in the cells of nucleic life are enabled and, indeed, can only occur through enzymatic catalysis. These enzymes are mostly proteins, amino-acid chains, probably originally "invented" through RNA self-assembly processes.⁶⁸ Carbon-based life also shares a common energy 'currency' in the form of adenosine triphosphate (ATP).⁶⁹

So how do these carbon lifelines extend from deep-time origin as self-activated assemblages, into the *now*, as living? What is this performative life-language? What is its agency for life? DNA is an information archive and replicator-agent formed of two inter-stranded helixes of paired chemical bases. These cellular agents, within each individual, across species and vast chasms of time, engage in a perpetual process of replication, transcription, and differentiation: "You are the product of billions of years of evolution, the accumulation of trillions of gene-copying errors. That's what led single cells to evolve into jellyfish, ferns, warthogs and humans."⁷⁰ In us, the human gamete cells, the embryonic or germ stem, are the unbroken line connecting back through deep time, to the first life-spark.

Other Life

While viruses have generally been understood to not be 'alive' in the sense that Western science's metaphysical ground defines 'life', new findings are changing that view.⁷¹ Lacking their own cellular membranes and metabolic processes, viruses operate within a host cell. While they do reproduce – a 'condition' for biologic 'life'

67 De Duve, *Singularities*, 6.

68 De Duve, *Singularities*, 16.

69 De Duve, *Singularities*, 25.

70 Sean O'Neill, "You Are a Mutant," *New Scientist* 232 (3103, December 2016): 29.

71 Arshan Nasir and Gustavo Caetano-Anolles, "A Phylogenomic Data-Driven Exploration of Viral Origins and Evolution," *Science Advances* 1 (8, 2015): 18.

– viruses were considered to lack the translation or replication assemblages – the making of proteins from messenger RNA – for this process, again relying on host cells for their DNA/RNA genetic replicators. The discovery of *mimiviruses*, viruses with large gene archives that have translation/replication capability in the form of genes for proteins, shifts the biologic ‘life’ status of viruses.⁷² Further recent study speculates that viruses, prior to their current evolution, were cells once and are therefore part of the whakapapa, the tree, of nucleic life.⁷³ The study suggests that ancient cells, the ancestors of viruses, were part of the LUCA, the last universal common ancestor living around 2.45 billion years ago.⁷⁴ In the context of a ‘geos-bios’ schema, viruses provide a limit-case for differentiating organic and inorganic matter. Having once been considered inanimate, this status is now in question. They may ‘fit’ criteria for biological life and, in the context of whakapapa and mauri, are live. They provide also a limit-case for critiques of ethical precepts of life-wellbeing, in respect to questions of wellbeing for whom, and from whose perspective. Wellbeing-as-connection is collective relationality, is vertiginous time, and qualitative intensity as locale. This disclosure does not disregard particular pathologies – the viral, hunting sharks, the disease-vector mosquito – as if we are re-casting a ‘garden of Eden’ from the vantage of a being in the image of the ‘Almighty’. Indeed, ethics can no longer be human-centric, or for that matter centric at all for any particular entity. Wellbeing is the life-field, mauri-ora, and life-continuity-as-whakapapa.

3. EC-STATIC LIFE

Collective Life

Our DNA/RNA inscribes our whakapapa as performative agent of our relationality to the world. Our temporalizing lifeline begins with transition from matter into self-assembling nucleic matter and continues, ‘collecting’ difference, retaining ancient nucleic presence with each new iteration of nucleic-life: “We have known for a decade that people of non-African descent inherit between 2 and 4 per cent

72 David R. Wessner, “Discovery of the Giant Mimivirus,” *Nature Education* 3 (9, 2010): 61.

73 Nasir and Caetano-Anolles, “A Phylogenomic Data-Driven Exploration.”

74 Nasir and Caetano-Anolles, “A Phylogenomic Data-Driven Exploration.”

of their DNA from Neanderthals. And we now know that DNA from several other extinct human species is also still in circulation, on every continent including Africa.⁷⁵ Not only do we carry DNA from other humanoids, we also 'carry' not only the language of DNA but also particular sections of genetic code with other nucleic life forms. You are many. Your body is a chimera, formed of your unique cells but also likely hosting cells from the bodies of others: "Before you were born, your mother's cells crossed the placenta into your bloodstream. Decades later, some of these migrants are still there in your blood, heart, skin and other tissues. This 'micro-chimeric' exchange was mutual: If you are a mother, your children may still be inside you in the form of their embryonic stem cells."⁷⁶ This trans-substantiation of bodies extends further. Your mother may have cells from her mother which may also have crossed into your body while in utero. Further, any siblings who preceded you may also have left their cellular trace in your mother's body and then also have become part of you.

Concepts of absolute individualism are challenged by the knowledge that we are hosts to many, carriers of cellular encodings of the deepest antiquity and from our most recent familial bodies. Researchers suggest that this maternal micro-chimeric cellular exchange may be advantageous: "Foetal cells may help to repair a mother's damaged heart tissue and lower her risk of cancer. Other research shows that mothers can end up with their child's DNA in their brains, something that may even be linked to a reduced risk of the mother developing Alzheimer's."⁷⁷ Lee Nelson notes that micro-chimerism perturbs our understanding of ourselves, suggesting self-as-ecosystem rather than self as singular: "We are made up of a patchwork of humans."⁷⁸ Self-hood comes to be known as a spatially extensive condition. We are distributed, a central assemblage with other orbiting bodies, resident in our mother, grandmother, younger siblings and children. Self-hood is here a field condition, not a singularity. All cellular life, all that is alive now, is linked, as each new cell can only come into being from another live cell. In this sense, we are all one cellular organism that extends as a spatio-temporal field across the geo-sphere and through geo-biological time.

75 O'Neill, "You Are a Mutant," 29-30.

76 O'Neill, "You Are a Mutant," 30.

77 O'Neill, "You Are a Mutant," 30.

78 Lee Nelson, cited in Andy Ridgway, "The Others Inside You," *New Scientist* (3055, January 2016): 28.

End of Lifelines

The journal *Human Reproduction Update* recently published a meta-review of fertility studies generated between 1973 and 2011.⁷⁹ These 185 studies, reviewing data associated with nearly 43,000 men, reveal a startling temporal trend. The fertility health statistics for 'Western' men from North America, Europe, Australia, and New Zealand show a very precipitous drop in the capacity to generate life. Male fertility in this group has declined by more than half over the last 40 years, and the decline trajectory shows no evidence of levelling off. No significant declinations were observed in studies from South America, Asia and Africa. As the study's authors note, public health implications of this trend are highly significant: Recent research shows that "poor sperm count is associated with overall morbidity and mortality."⁸⁰ Declining male fertility factors may be understood as a red flag or 'canary in the coal mine' for Western male health more broadly, and across a life span, *in utero* to adult.

So why might the 'architects' of the Anthropocene, those cultures and geo-regions that have most profited from this new epoch, be experiencing such a radical depletion of their own life-reserve as fertility? The study outlines a range of potential environmental determinants "including endocrine disrupting chemicals," along with pesticides, heat and lifestyle factors, including diet, stress, smoking and BMI.⁸¹ In terms of span-of-life, reductions in sperm count can be enacted in-utero, or in adult life. The lifetime of the foetus is a particularly critical moment in a lifespan, a time when developing reproductive structures can be reprogrammed.⁸² The authors of a study on environmental pollution markers note the importance of time, how low-dose exposures to the wide range of endocrine disruptors within the Anthropocenic environment can have a cumulative effect over a lifespan.⁸³

79 Hagai Levine et al, "Temporal Trends in Sperm Count: A Systematic Review and Meta-Regression Analysis," *Human Reproduction Update* 23 (6, 2017): 646-659.

80 Levine et al, "Temporal Trends in Sperm Count," 659.

81 Levine et al, "Temporal Trends in Sperm Count," 646.

82 Loa Nordkap et al, "Regional Differences and Temporal Trends in Male Reproductive Health Disorders: Semen Quality May be a Sensitive Marker of Environmental Exposures," *Molecular and Cellular Endocrinology* 355 (2, 2012): 221-230.

83 Nordkap *et al.*, "Regional Differences and Temporal Trends."

Perhaps ironically, as enumerator of life-agency, sperm counts offer a most critical register of the diversely life-limiting nature of the Anthropocene.

With whakapapa, I am able to explore movement from mineral life to nucleic life – a flourishing from that originary moment of planetary matter's 'maternal' self-assembly, a 'sparking' of geo-biological life and with that a radical diversifying away from the last common ancestor towards protists, starfish, mammoths, ferns, mushrooms, whales, tuatara, snow leopards, golden frogs, kereru, sand flies. We humans are part of this life field. We, too, whakapapa with primordial geo-matter, as being-with. In our individual bodies, we exist as hosts-of-bodies, as our immediate whanaunga (family) via our distributed micro-chimeric cells. Further, through the eco-systemic interactions of human and microbiome, we are revealed as an assemblage, a supra-organism that is both teina, relatively 'new' in our humanness, but also ancestrally ancient, through our microbiotic self. Thus, living in the Anthropocene is revealed to be a condition of deepest time – some 3.5 to 4 billion years – and of spatial extension, distributed across multiple bodies, within which are multitudes. Whakapapa, as relationality to the living world, is an ontologic for being-with. Life is not singular, not a disconnected condition in time. It is not discontinuous. Rather life is revealed as a line both temporally extensive and radically pluralistic, a temporalised continuing of geo-biological life's first spark unextinguished in a relay through whakapapa layers of generations. The Anthropocene's forced extinctions extinguish geo-biological agency extant for some 4 billion years.

LIFE FIELD

INTRODUCTION

Though the initial discussion in this chapter has a focus on temporality, and this second discussion focuses on 'field', I want to engage a way of thinking these together, precisely by addressing just how one says 'time' in Te Reo Māori. Or, rather, the almost endless manner whereby that language has the propensity to encounter the temporalizing of temporality as field-event. If you go online to the Māori Dictionary site – and I suggest you do just that – you will see the *first* entry for time is derived entirely from the English: tāima, which especially refers to

clock time.⁸⁴ This is more than just the importation of a 'convenient' colonial word, coinciding with 'convenient' colonial technologies of chronological measurement. There follows, after this initial entry, several hundred entries, more than I care to count, of entirely separate words and phrases, expressing the temporalizing of temporality though according to singular and circumstantial locales and events: ka haere te wā, (ā), ka ... (as time went on, passed, indicating something happened); inamata (ancient, traditional time, but also immediately; rerenga (time of running, withdrawal; but also voyage or journey; also flowing; and distant relative); nōnawhea (when?); āmuri (time to come, future); inahea (when? What time?) And so it goes, for several hundred, in fact, many hundreds of quite different words and phrases expressive qualitative differences – qualitative intensities or nuances – within a field of living and motile actions. Here there is no one, unifying concept for time as a sequence of now moments. That was introduced with colonisations, and along with it was the most powerful colonising metaphysics of all: that of time. In what follows, when discussing 'field', we need to understand life-field as essentially expressive of temporality temporalizing: That field's being-becoming is *time*.

We earlier discussed the radical immanence of Deleuze's Spinozian thinking. How does this relate to time? We suggested, for example, there is a 'vertiginous' time of an infinity of immanence that Deleuze calls 'life'. But, is time, then, for Deleuze, infinite or finite? Would finitude be thought from out of infinity or would the infinite, the non-finite, only be thinkable at all from out of the finitude of life? How does Deleuze think time and therefore the notion of or moment of force contained in any understanding of 'cause' and that which it brings about, 'effect'? How is cause and effect a force-field related to or subtended by time? We turn to Deleuze's *Logic of Sense*.⁸⁵ It is complicated, though opens to what we have just suggested concerning a decolonising metaphysics of Māori temporalizing. Deleuze inherits his thinking here from the Stoics. Or that is what he suggests. Though we also see more than a bit of Spinoza and Bergson thrown in for good measure. Deleuze elucidates three kinds of discussions from Stoic thinking. The first concerns the kinds of entities that are – what exists – and there are two kinds: bodies with their actions and passions (capacities to affect and be affected) and 'states of affairs' with

84 See <https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=Time>

85 Gilles Deleuze, *The Logic of Sense*, trans. M. Lister with C. Stivale. (New York, NY: Columbia University Press, 1990).

their actions and passions. States of affair arise from the mixtures of bodies.⁸⁶ The second discussion, deriving from the first, differentiates causes and effects. If there are bodies and states of affairs, then bodies are causes: "All bodies are causes in relation to each other, and causes for each other – but causes of what? They are causes of things of an entirely different nature."⁸⁷

Effects are thus not bodies but rather 'incorporeal entities'. They are not physical qualities but "logical attributes."⁸⁸ They are events (states of affairs). Deleuze suggests that we cannot say they exist but that they "inhere." They are verbs! But as verbs they are infinities, unlimited. This is where Deleuze moves to his third Stoic notion, that of the differentiation of Aion and Chronos as two expressions of time. These subsisting events are a "becoming which divides itself infinitely in past and future and always eludes the present."⁸⁹ Time needs to be "grasped" in a double movement, first as a living present. A present can only be bodies acting and reacting – Chronos. Yet, there is a second mutually exclusive time of an entity infinitely divisible into past and future and thus into the incorporeal effects of bodies as causes – Aion. In this sense, causes all exist solely in an indivisible present. Effects solely exist in an infinitely divisible past and future: "There are two simultaneous readings of time."⁹⁰ Hence there are two planes of existing, that of bodies-causes-a cosmic present, the unity of which Deleuze suggests is Destiny.⁹¹ There is a second plane, states-of-affair-effects-an infinite divisibility of the finitude of a destinal unity as past and future. Causes refer only to causes and effects only to effects.⁹² I would want to read the strange disjuncture of whaka and Papa as resonating with this peculiar binary coming from Deleuze. I am not suggesting that we better read Māori metaphysics via Deleuze's Stoics but rather recognise how whaka – becoming – as infinitising of pasts and futures encounters Papa as destinal and unitary presencing of causes. We resume discussion of the Anthropocene, keeping in mind a newly invoked complexity in questions of causality and temporality.

86 Deleuze, *The Logic of Sense*, 4.

87 Deleuze, *The Logic of Sense*, 4.

88 Deleuze, *The Logic of Sense*, 5.

89 Deleuze, *The Logic of Sense*, 5.

90 Deleuze, *The Logic of Sense*, 5.

91 Deleuze, *The Logic of Sense*, 4.

92 Deleuze, *The Logic of Sense*, 6.

Does the geosphere have mineral *life*? Is an ocean alive? These are the kinds of questions that arise through deconstruction of metaphysical grounds for enquiry, in the face of an eco-ontological turn in various fields of scholarship that recognise an epochal shift to the Anthropocene. Indigenous-Māori thinking holds these questions as inherent, immanent understanding – explored here relationally via *mauri* and *mauri-ora* – of the ways life pervades.⁹³ Spatiality, as *extensity* of life, happens with Indigenous-Māori ‘thinking’ as design practice through frameworks such as *whakaahua* – becoming forming (trans-forming), previously mentioned.⁹⁴ The question of life, as my research focus – what is ‘alive’, what is ‘animate’ – is leverage or agency through which to analyse Anthropocenic ‘thanato-cultural’

93 Grouping the ‘indigenous’ can totalize and obviate difference, yet there are also clear alignments between many indigenous groupings, for example in respect to multi-species genealogies that proffer an immanent ontology. For a discussion of the construction of a globalized indigeneity, see Paul Moon, “The Impression of Hybridised Indigeneity: A History of the United Nations’ Permanent Forum on Indigenous Issues and the Emergence of a Globalised Construction of Indigeneity,” *International Journal of Critical Indigenous Studies* 8 (1, 2015). I recognise the value and difficulty of the term ‘Indigenous’ by denoting specific ‘Indigenous’ cultures, i.e., Indigenous-Māori. Equally, Indigenous-Māori knowledge is not unitary, but rather constituted differentially across many different Iwi or kinship groups. The concepts of *mauri*, *mauri-ora* and *whakapapa*, for example, have origins prior to Māori settlement of Aotearoa, with registers in the Pacific. For further reading on the relationship between Māori and Pacific cosmogonies, see Mere Roberts et al, “Whakapapa as a Maori Mental Construct,” *Contemporary Pacific* 16 (1, Spring 2004): 1-28; Geoff Park, *Theatre Country: Essays on Landscape and Whenua*, (Wellington: Victoria University Press, 2007).

94 Thinking-as-practice extends the concept of ‘design’ to an expanded condition, attenuating conditions of non-hierarchical performance of all life across non-human and human species. Design becomes an ethical condition as it *builds us anew*—immanence is a condition of becoming anew underpinning a non-mastery where eco-philosophical-grounding does not strive for fixity of life, but rather privileges the dynamisms of life flows. This enables a reimagining of *design* as a philosophical-thinking-practice *already* inherent in Māori *whakaaro*.

legacies in-order-to event (or advent) an eco-ethics.⁹⁵ This necessitates subverting the propositional form of questioning as such, questioning's approach to its object of enquiry, an unknown, by a subject-enquirer, an inquisitive one, an inquisitor in a theatre of inquisition. So, the question "What is alive?" is abandoned for process thinking, for processual attention to the simple entanglement of enquirer and enquired, for how all 'things' live relationally. This entanglement, this refusing of the subject of inquisition, is an essential 'ground' for ethics. And this 'call' to an ethical impulse reimagines time-space-existence as immanent indwelling prior to human subjectivation, to subject-as-grounding substance, where all life events (itself) through non-hierarchical assemblages. The Anthropocene, that geo-historical epoch that signals humanity's global impact, presents a singular failure, disclosed metaphysically as and in failure to recognise our existence as immanent finite world-assemblage, where unmeasured excess of radioactivity, air-borne carbon, dioxin, and other toxins or pollutants are inscribed on the lithosphere, or impact on the biosphere, hydrosphere or atmosphere. As these pollutants become measurable and measured, we become increasingly aware of the radical life-agency of the material-elemental world.⁹⁶

Life Field begins with an exploration of mauri, as a condition of life force or life- vitality that has a particular relationship to the thinking of *life-as-field* within Indigenous understandings of relationality or connection. A second part addresses *life-as-assemblage* through two scales, that of global life and that of the human-self. Threat to life-assemblage of the planet is evidenced in the catastrophic global biodiversity losses concurrent with the Anthropocene. A final section, *Anthropos-Assemblage*, explores self-hood-as-human, recognising how life-assemblage is revealed.

95 There is a multitude of recent publications on the Anthropocene. See, for example, Christophe Bonneuil & Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History and Us*, trans. D. Fernbach. (London: Verso, 2016); McKenzie Wark, *Molecular Red: Theory for the Anthropocene*, (London & New York: Verso, 2015).

96 This increasing awareness can be gauged variously, in shifting design practices and systems (Living Building Challenge and Declare for example, discussed later in the thesis), in discourses around ecological ethical practices, in intergenerational attitudes shifting across many fields of human life practices, but also foregrounded in the increasingly extreme registrations of climate change (evidenced in global air and sea averaged temperatures, polar ice melt, annual and monthly temperature records).

1. MAURI

The concept of mauri gives us a radical temporal and spatial reimagining of *life*, refusing distinction between animate and inanimate, or the living and not-living. Life, in this way of thinking, is an intensive relational 'atmosphere' manifesting in all things. Ethnographer, Elsdon Best, describes mauri as the "active-life principle ... the activity which moves within us. ... It is a vital principle ... everything possesses a mauri ... the sky, sun, moon, stars, seasons, wind, rain, mist, ... trees, stones, animals, and all other things."⁹⁷ Best describes how mauri has cognates across the Pacific: "the *mauli* (life, soul) of Wallis Island, the *mauri* (to live) of Efate, and *mauri* (Soul, mind) of the Paumotu Group. The *moui* (life) of Niue is connected with this *mouri* or *mauri*.⁹⁸ Mauri is expressive of or coterminous with vitality, with wellness and balance. Mauri exists within an intricate assemblage of related and supporting notions such that its existence is "co-dependent with a number of other principles."⁹⁹ Related concepts are those of mana (status, spiritual power), tapu (sacred, prohibited), hau (breath of life), wairua (spirituality), kaitiakitanga (care). As a life or health force, mauri is referenced as a component of a contemporary framework named Mana Kaitiakitanga: Māori principle of wellbeing, which addresses wairua (spirituality), hau-ora (breath of life) and mauri as nested concepts of wellbeing.

Mauri, as Huhana Smith describes, is the "ultimate vitality of ecosystems and resources" within holistic conditions of whanaungatanga or familial connection to a multi-entity world.¹⁰⁰ Māori environmental scientist, Garth Harmsworth, notes:

97 Elsdon Best, *Spiritual and Mental Concepts of the Maori Being Illustrations of Animism and Animatism*, (Wellington: Dominion Museum Monograph No.2, 1954), 17-18: <https://www.knowledge-basket.co.nz/kete/taonga/contents/taonga/text/dm/dm2.html>

98 Best, *Spiritual and Mental Concepts*, 20.

99 Mera Penchira, Linda Tuhivai Smith, Alison Green, and Clive Aspin, "Mouri Matters: Contextualizing Mouri in Maori health discourse," *AlterNative: An International Journal of Indigenous Peoples* 7 (2, 2011): 183.

100 Hardy, J Derrylea, Murray G Patterson, Huhana Smith, Aroha Spinks, "Assessing the Holistic Health of Coastal Environments: Research Design and Findings from Cross-Cultural Research, Manaaki Taha Moana Phase 1," in *Manaaki Taha Moana: Enhancing Coastal Ecosystems for Iwi Report No. 6* (Palmerston North, NZ: Manaaki Taha Moana Research Team, Massey University, 2011) 10.

"Traditionally Māori realised that shifts in mauri (life force, life spirit) of any part of the environment, for example through use, would cause shifts in the mauri of immediately related components. As a result, the whole system is eventually affected. All activities and relationships were bound up and governed by mythology, tapu, and an elaborate system of ritenga or rules."¹⁰¹ In addressing mauri in this work, ongoing and careful attention is paid to maintaining relationality through consideration of whakapapa, as emphasised in Mera Penehira et al's "Mouri Matters."¹⁰²

Connecting relational life-force

Marsden describes how mauri, as bonding-force, sits with three other interrelated concepts of mauri-ora (life-force), hau-ora (breath of life) and hihiri (energy). Hihiri is life-energy that manifests from matter.¹⁰³ Hihiri is also the 'energy' of thought, dynamic and eruptive. But how do hau-ora and mauri differ as nuanced understandings of life? In "Tears of Rangī," Anne Salmond addresses hau ora as a concept with particular agency for change-making.¹⁰⁴ Salmond's paper presents an exemplar for recognising metaphysically different understandings of life within contemporary cultural practice of Aotearoa New Zealand. She discusses hau ora within a broader context of Māori and Western convergences and conflicts, fresh-water access and the legal right of a river as personage.

Hau ora notably disrupts biologically-derived frameworks for thinking life. Salmond references Eduardo Viveiros de Castro's 2007 paper discussing Indigenous ontology, in which he notes that differing ontological horizons constitute not differing 'worldviews' so much as incommensurable accounts of world-reality,

101 Gareth Harmsworth and Shaun Awatere, "Indigenous Maori Knowledge and Perspectives of Ecosystems," in *Ecosystem Services in New Zealand – Conditions and Trends*, ed. J.R. Dymond. (Lincoln: Manaaki Whenua Press, 2013) 276.

102 Mera Penehira et al, "Mouri Matters," 183.

103 Māori Marsden and T.A. Henare, *Kaitiakitanga: A definitive introduction to the holistic world view of the Māori*, (Wellington: Ministry for the Environment, 1992) 7.

104 Anne Salmond, "Tears of Rangī: Water, Power and People in New Zealand," *HAU: Journal of Ethnographic Theory* 4 (3, 2014): 285-309.

expressed “objectively from inside it.”¹⁰⁵ Hau-ora (literally ‘wind of life’), is one of the forces that first stirs in te Kore, that space-time described by ethnologist Edward Tregear as both void and potentiality.¹⁰⁶ Accounting for hau, Salmond describes the process of whakapapa as cosmogonical sequencing, where diverse entities (winds, sea, plants, animals, birds, people) are *produced* from primordial ‘parenting’, Papatūānuku (earth) and Ranginui (sky). This relational schema – whakapapa of becoming-earth – is structured by exchanges, positive or negative:

[...] relations between the ancestors who emerged from Rangī and Papa alternate between gift giving and union, and quarelling and exclusion. In the same way, their descendants care for or attack the *hau* (the “breath of life” or energy) of other life forms, including land and water bodies. [...] *Hau*, the wind of life, thus emerges at the very beginning of the cosmos, animating exchanges of all kinds in the whakapapa networks.¹⁰⁷

As a particular life-force or energy, hau is concerned with translation, exchange, transferral and an active kinetic balancing. Salmond describes how for French sociologist, Marcel Mauss, the exchange of hau inaugurates transformation, creating linkages and inter-connections. As a greeting in which breath is ritualistically exchanged, the hongi exemplifies this connecting reciprocal transfer. Kin groups share ancestral hau and whakapapa chants reiterate the various sharings and linkages that form a relational cosmos. Salmond makes reference to the sharing of hau as exchange-engagement between the people of Whanganui and Te Awa Tupua, the ancestral Whanganui river: “It is this sense of sharing hau that leads Whanganui people to say, “Ko au te awa, ko te awa ko au” – “I am the river, and the river is me.”¹⁰⁸ Hau, exchange *is* mauri of life.

105 Viveiros de Castro, Eduardo. 2007. “The crystal forest: Notes on the ontology of Amazonian spirits.” *Inner Asia* 9 (2, 2007): 153–72. Cited in Salmond, “Tears of Rangī,” 291.

106 Edward Tregear, *The Maori-Polynesian Comparative Dictionary*, (Wellington: Lyon and Blair: 1891), 168. https://books.google.co.nz/books?redir_esc=y&id=wvIIAAAAMAAJ&q=te+kore#v=snip-pet&q=te%20kore&f=false

107 Salmond, “Tears of Rangī,” 292.

108 Salmond, “Tears of Rangī,” 293.

Connectivity is fundamental to an understanding of mauri's *particularity* as life-force: Tai Tokerau elder and Anglican minister, Māori Marsden, describes mauri as that interpenetrating force which is "immanent in all things, knitting and bonding them together."¹⁰⁹ Mau is to take up or to hold.¹¹⁰ Life is all – immanent univocity – mountain, stone, river, trees, people, ants, and architecture as immanent assemblage. Mauri addresses the geologic, biologic, hydro and atmospheric, as connected horizon of life. Life is intrinsically continuum, rhizomic network, pervasive animating and coalescing force, mauri. Conditions for life occur through this numinous, multi-scaled, vertiginous connectivity. *Conjunction* is the vital structure of life: each *thing* is relational rather than substantial. Relationality constitutes a situational evental and reciprocal encounter of primordial forces. Mika explores this notion of a *thing* in relation to the thinking of Heidegger on the 'fourfold'.¹¹¹ This is late Heideggerian thinking that dwells on an ontological disclosure of thingness as radical exchange, hau, gifting or 'mirroring' of earth, sky, divinities and mortals as a four-fold infolding to a one-fold.¹¹² That movement from four-folding to one-folding is radically immanent. Earth, sky, divinities and mortals are not transcendent substances, but rather disclosive unfoldings of Being. Being is that one-fold intersecting of the fourfold. Mika finds uncanny resonance within Māori cosmology for disclosing more deeply this Heideggerian thinking. Papa and Rangi (earth and sky), atua (divinities) and whakapapa-whakaaro (thinking lifeline of mortals) uncannily resonate with this thinking emerging from German phenomenology and this life force connects (mauri) all things into relation.¹¹³

109 Māori Marsden, *The Woven Universe: Selected Writings of Rev. Maori Marsden*, ed. C. Royal. (Otaki: Estate of Rev. Maori Marsden, 2003) 47.

110 See Māori Online Dictionary entry:
<https://maoridictionary.co.nz/search?idiom=&phrase=&proverb=&loan=&histLoanWords=&keywords=mau>

111 Mika, "The Enowning of Thought and Whakapapa," 48-60.

112 On Heidegger's "Fourfold" see Andrew Mitchell, *The Fourfold: Reading the Late Heidegger*, (Evanston, Ill: Northwestern University Press, 2015). Heidegger introduces the notion of the Fourfold in his 1949 Bremen Cycle of Lectures. See Heidegger, *The Bremen and Freiburg Lectures: Insight Into that which Is and Basic Principles of Thinking*, trans. A. Mitchell. (Bloomington and Indianapolis: University of Indiana Press, 2012).

113 Mika, "The Enowning of Thought and Whakapapa."

Indigenous-Māori practices reveal life-mesh as immanent, while mauri-ora is becoming-care for mauri. This 'revealing' happens through performative and situated recitations such as whakapapa's expressed cosmogonic iterations. As previously discussed, whakapapa is a multi-species genealogy of the living world and macro-account of interrelations that imbricate multiple entities (biotic, abiotic, material, immaterial, celestial, spiritual) within branching lines of familial relationality. Life is multiple and permeant field-condition, that suffuses through all in non-hierarchical correlations that include biotic and abiotic existence. The precept of whakapapa, as performative and multi-entity, establishes being-of-world that is perpetual becoming-of-world, iterations of life, repeating refrains.

2. LIFE-AS-ASSEMBLAGE

Current research into the life-capacity of the globe reveals the extent to which life can only be immanent assemblage and the life-assemblage of the planet is *diminishing* rapidly, as attested to by a recent study describing biological annihilation. Gerardo Ceballos, Paul Erlich and Rodolfo Dirzo provide an account of what they define as the sixth great mass extinction event, now underway with precipitate waves of population decline and extinction.¹¹⁴ This global extinction pattern bears witness to an end to "billions of populations."¹¹⁵ It also points to an existential threat to humankind, progenitor of the extinction crisis. Extinctions are an ongoing condition within the life-assemblage of the planet: Over the last two million years the background extinction rate has been such that it would take 10,000 years for two hundred vertebrate species to become no longer extant. In the Anthropocene's biological extinction crisis, that loss has occurred in the last century.¹¹⁶ The agency or impact of the Anthropocene can be measured in the massive number of ancient lifelines that are being severed: "As much as 50% of the number of animal individuals that once shared Earth with us are already gone, as are billions of populations."¹¹⁷ Some forty-one per cent of known amphibian

114 Gerardo Ceballos, Paul R. Ehrlich and Rodolfo Dirzo, "Biological Annihilation via the Ongoing Sixth Mass Extinction Signalled by Vertebrate Population Losses and Declines," *Proceedings of the National Academy of Sciences of the United States of America* 114 (30, 2017).

115 Ceballos et al, "Biological Annihilation," 7.

116 Ceballos et al, "Biological Annihilation," 1.

117 Ceballos et al, "Biological Annihilation," 7.

species and forty-two per cent of terrestrial invertebrate species are categorised as under threat of extinction according to the International Union for Conservation of Nature (IUCN Red List).¹¹⁸ While the scale of loss is vast and registers at a geological timescale, it has a less powerful register within the distraction and disconnection of the Anthropocenic 'everyday'. Only localised populations may know of the loss of the Hawaiian crow, the Thick-Billed Ground-Dove, the Saint Lucia Skink, the New Zealand Quail, the New Zealand Grayling fish, New Zealand Bush Wren, the South Island Piopio (IUCN Red List).¹¹⁹ In order to conceptualise and visualise the complexity of biodiversity loss, conservation scientists have proposed a 'Barometer of Life', which presents information on a subset of 160,000 species, roughly representative of biodiversity.¹²⁰ What is particularly arresting in the study is the degree of loss of populations for species that were once considered 'safe'. Thus, the Cheetah population is now only some 7000 individuals, while African lion populations have dropped forty-three per cent since 1993.¹²¹ As the World Wildlife Foundation's Living Planet Report 2014 notes: "In less than two human generations, population sizes of vertebrate species have dropped by half."¹²²

What causes this precipitate life-loss? Contraction of loss of geographic range through habitat encroachments of urbanisation and other human-oriented land-uses have badly affected some large mammals. The large mammals of South and South-East Asia have lost up to eighty per cent of their range. The lion once ranged across Africa, Southern Europe, and the Middle East, down to India. Now almost all of the lion populations are no more.¹²³ Introduction of invasive or predator species have decimated indigenous populations. Climate disruption and globalising pollution with toxins further destabilise and diminish life-capacity. All of these stresses occur within an Anthropocenic climate of unconsidered consumption and an urbanising of the globe. Commentators on the current biological annihilation

118 Jean Vie, Craig Hilton-Taylor and Simon N. Stuart, *Wildlife in a Changing World: An Analysis of the 2008 IUCN Red List*, (Gland: IUCN, 2009).

119 See <http://www.iucnredlist.org/search>

120 Simon N. Stuart, E.O. Wilson, J. A. McNeely, R.A. Mittermeier, and J.P. Rodriguez, "The Barometer of Life," *Science* 328 (2010).

121 Ceballos et al, "Biological Annihilation," 2.

122 Richard McLellan (ed.), *Living Planet Report 2014: Species and Spaces, People and Places* (Gland: WWF, 2014).

123 Ceballos et al, "Biological Annihilation," 6.

note that while this radical depletion of life is caused by humans, it also destabilizes the foundations of human civilization: "All signs point to ever more powerful assaults on bio-diversity in the next two decades, painting a dismal picture of the future of life, including human life."¹²⁴ Bio-diversity, as a term, corresponds with life-as-assemblage. Individual life, even at species-level, cannot exist without the many other exchange-entities – biotic and other – that collectively create the life-field of the living-world. If the Barometer of Life reduces greatly, with numbers falling to catastrophic levels, then life's capacity to live is crisis-driven. Life assemblage is formed of plant-animal-microbial life *and* geological-hydrological-atmospheric life. Biological annihilation destabilises established relationships between nucleic and geo/hydro/atmospheric life entities, affecting ecosystem functions and 'services'. Animal population loss leads to plant community changes or losses and adjustments in microbial populations. For example, some plants can only be pollinated by a few types of birds, and when these are lost, so too are the plants as, for example, with the Hawaiian wren. With planet-wide de-faunation now in progress, multiple ecological networks and ecosystem services are failing. This is life-assemblage attenuating. A well-described phenomenon is the die-off of bees that provide crop pollination 'services' crucial to maintenance of the food systems that humans and multiple other entities rely on.

The loss of wetlands, with their water-purifying qualities, also reduces the life-vitality, the mauri, of a place. The "Hei Whenua Ora ki Te Hākari/Te Hākari Dune Wetland Restoration Project" offers an example of an ecological restoration project that aimed, as described by Huhana Smith, to "restore the mauri of degraded local ecosystems and the catchment landscapes that support them."¹²⁵ The site of restoration is within the rohe (region) of Ngāti Raukawa ki te Tonga, in the Horowhenua area on the southern West coast of New Zealand's North Island. Importantly, in relation to whakapapa, where humans are part of a relational living-world, the research sought to achieve "ecological and cultural restoration goals in a whole-of-person, whole-of-system context."¹²⁶ Smith emphasises the extent to which an intervention to improve the wellbeing of the environment is always already a socio-cultural relational activity:

124 Ceballos et al, "Biological Annihilation."

125 Smith, "Hei Whenua ora ki te hākari," 16.

126 Smith, "Hei Whenua ora ki te hākari," v.

Disciplinary orientation on species and community/ecosystem restoration will ultimately founder if it fails to acknowledge human relationships with the natural and cultural landscape, with place, and with the sacred realm. [...] Māori culture has survived by being intimately coupled in a co-evolutionary sense with the wellbeing and survival of natural ecosystems [...] from a Māori worldview, ecological restoration efforts involve human intervention in a highly complex socio-cultural-ecological system.¹²⁷

The Te Hākari project encompasses a complex terrain of rivers, wetlands and coast. Local hapū who have guardianship of the area include Ngāti Te Rangitāwhia, Te Mateawa, Ngāti Manu, and Ngāti Kapumanawawhiti ki Kuku.¹²⁸ The area afforded a rich range of resources for the hapū who established there. With an intensification of farming in the area, has come a depletion and destabilisation of socio-cultural-ecological relationships. Research sought to address this through a multi-modal engagement with environmental and socio-cultural conditions. A concept of 'life' here included those vital resource-zones considered to be particularly life sustaining along with the living entities being sustained. Thus a "swamp or coastal foreshore ecosystem that possessed such qualities, or a river ecosystem, or a forest, could be considered, with the people it sustained, to be a living being and be termed a taonga."¹²⁹ This customary understanding of life is maintained, with Smith noting that for local hapū "belonging, or tūrangawaewae, continues to emphasise ancestral connections and intergenerational responsibilities for lands, rivers, streams, wetlands, healing springs, and fresh water springs within Kuku."¹³⁰ One of the things revealed in this study is an approach to thinking and activating extant connections within a socio-cultural-ecological system to enable mauri, the vitality, of that life-assemblage.

127 Smith, "Hei Whenua ora ki te hākari," 1-2.

128 Smith, "Hei Whenua ora ki te hākari," 2.

129 Geoff Park, "Effective Exclusion? An exploratory overview of Crown actions and Māori responses concerning the indigenous flora and fauna, 1912-1983," *Waitangi Tribunal Report*, (Wellington, 2002): 8. Cited in Smith, "Hei Whenua ora ki te hākari," 5.

130 Smith, "Hei Whenua ora ki te hākari," 5.

3. ANTHROPOS-ASSEMBLAGE

For social animals like us, our connectivity to others is fundamental to our capacity to live. This is evidenced powerfully at the beginning and end stages of life. Premature babies (human and other mammals) who are not touched have greatly reduced growth rates and increased mortality rates. It seems that touch is a powerful *signal* that manifests growth hormones and other factors.¹³¹ When touch is absent, a baby's body adjusts, slowing down metabolism to aid survival until touch's return. Touch – physical connection – provides impetus for life's extension. Social connection is vital also in maturation and, indeed, appears to be *the* determining factor for longevity, above life-enhancing gestures or factors, such as smoking cessation or exercise. 'Blue Zone' sites, those with significant elderly populations, include Central-Eastern Sardinia, North-Western Costa Rica, and the Greek islands of Ikaria. These Blue Zones share an emphasis on intensive social interaction, which tends to be enhanced by inherent *design* factors, such as dense and walkable cities or neighbourhoods. The island of Sardinia has unusually high numbers of male as well as female centenarians.

Wellbeing, as measured in life expectancy, seems to be strongly linked to social connection, which is enabled through situations that facilitate social exchange and cohesion. Between birth and old age, loneliness correlates strongly with poor health and high mortality, while strong social bonds correlate with wellbeing. These are *predictive* indicators, as people who were 'happiest' at mid-life, with strong social bonds, were more likely to be alive, and living well, in later life. Isolation, loneliness, and social disconnection are a public health issue and may be recognised and addressed in terms of a *design* crisis in the Anthropocene. As a further index to connectivity, bio-philía researchers have been able to document how our health or recovery from illness is enhanced when we are exposed to 'natural' environment. Proposed by foremost evolutionary biologist, E.O. Wilson, *biophilía* as a concept emphasises our *innate* attention to life and life-like processes. Wilson defines the concept as an "urge to affiliate with other forms of life."¹³² In extending the filiations so emphasised by Wilson with respect to life-as-biotic, my research emphasises an 'expanded field' of the biophilic to encompass vital belonging

131 Lynn Barnett, "Keep in Touch: The Importance of Touch in Infant Development," *Infant Observation: International Journal of Infant Observation and Its Applications* 8 (2, 2005): 115-123.

132 Stephen R. Kellert and Edward O. Wilson, eds. *The Biophilía Hypothesis*, (Washington: Island Press, 1995) 416.

as *geophilic*. With geophilia, wellness comes from existence, primordially as being-with a living-earth – Papatūānuku – a wherein of belonging-seascapes, cloudscapes, landscapes and biotic entities. Community and biodiversity are central to life-assemblage of the planet, and also to our lives as 'humans'. We each offer richly diversified habitats for a range of microscopic organisms. We are host to parasites, mites, fungi and viruses, but bacteria dominate the microorganism life-types that colonise us. Demodex mites, close relatives of ticks and spiders, are permanent and mostly harmless residents of the human face:

'Every person we've looked at, we've found evidence of face mites', says Megan Thoemmes at North Carolina State University in Raleigh. 'You can have thousands living on you and never even know they're there.' ... you host astonishing biodiversity ..., and without it you wouldn't be who you are.¹³³

Given the extent to which we host a diverse range of life, Cossings proposes that we can be best understood as "really a complex consortium of different organisms, one of which is human."¹³⁴ This microbiotic community is at least as numerous as our own cells and may outnumber 'ours' by a factor of ten. We may be more microbe than human.¹³⁵ The largest microbial community by far resides in the gut. Emerging research shows intriguing links between obesity, diabetes, anxiety, depression and the types of intestinal microbiotic communities we host. There seems potential to remediate such illnesses via manipulations of the microbiota.¹³⁶ What Western metaphysics understand to be most human—some version of *cogito ergo sum* as capacity to think and feel—is overdetermined by

133 Daniel Cossings, "You Are a Menagerie," *New Scientist*, (December, 2016): 31.

134 Cossings, "You Are a Menagerie," 31.

135 Sender et al, "Are We Really Vastly Outnumbered? 337-340.;" Sender et al, "Revised Estimates for the Number of Human and Bacterial Cells in the Body", 337-340.

136 Musso et al, "Interactions Between Gut Microbiota and Host Metabolism Predisposing to Obesity and Diabetes," *Annual Review of Medicine* 62 (2011): 361-380; Foster et al, "Gut-Brain Axis: How the Microbiome Influences Anxiety and Depression," *Science Direct* 36 (5, 2013): 305-312.

our microbiotic community.¹³⁷ Our genetic landscape is a combination of human and microbe; our metabolism is enabled by microbial agency. Each one of us is a “human supraorganism,” a diversified life-assemblage.¹³⁸

Temporal phasings of geo-biological life

Over the 3.8 billions years of biological life, how many forms have generated and regenerated, formed out of and returned to the geosphere? Biological assemblages are in continual flux as entities, both in terms of ephemeral life-spans and in terms of their own internal coherency, as cells break down and are replaced: The one-day Mayfly has a life span of 24 hours; fruit flies live for around 40-50 days; mice live for around a year; the longest verified human life was 122 years; tortoises can live for 200 years or more; individual trees can live for up to 5000 years, while there are clonal trees 80,000 years old. Still, in the context of geological time – that context within which the Anthropocene resides – even a 5000 year old tree or 10,000 year old glass-sponge is but a fleeting assemblage of geological matter become biological.¹³⁹ Whakapapa’s performative iterating, its inherent collapsing and opening of time, is manifested in each iteration of biological life-forming which re-forms, drawing molecules from earth and sky, hydrosphere, the solar energy or plants and animals. When the agency of biological life ends, *bios* returns, renders into geologic matter of the geosphere. Biological life is an awhiling of particular life-assemblages that ‘quickly’, as geo-duration, awhile as geology, hydrology, meteorology.

Within the lifetime of particular iterations, what we might want to call a ‘stabilising’ of the ‘biological’ remains in continual de-stabilising oscillations with the geo-hydro-meteorological: Lungs fill themselves with oxygen – which then enters red blood cells – or exhale carbon dioxide back into the atmosphere; water is swallowed

137 Foster et al, “Gut-Brain Axis,” 305-312; Y.E. Borre, et al, “The Impact of Microbiota on Brain and Behavior: Mechanisms & Therapeutic Potential,” in *Microbial Endocrinology: The Microbiota-Gut-Brain Axis in Health and Disease. Advances in Experimental Medicine and Biology, Vol 817*, ed. M. Lyte and J. Cryan. (New York: Springer, 2014).

138 Turnbaugh et al, “The Human Microbiome Project: Exploring the Microbial Part of Ourselves in a Changing World,” *Nature* 449 (2007): 804.

139 Ronald S. Petralia, Mark P. Mattson and Pamela J. Yao, “Aging and Longevity in the Simplest Animals and the Quest for Immortality,” *Ageing Research Review* (July, 2014): 66-82.

and as it enters tissues acts as a solvent for biochemical reactions and an inter-cellular biochemical transporter; skin absorbs endocrine-disrupting pollutants from the sea. My body sheds, weeps, excretes, its cells iterating, becoming-earth (whakapapa) within differing temporalities. Skin cells replace themselves each month, red blood cells have a inter-phased life-time of around four months.¹⁴⁰ Each minute of my breathing life, some 100 million new red blood cells generate. Fat cells reform every eight years, as do a percentage of heart cells, the rate dependent on sex and age.¹⁴¹ There are, it seems, only a few parts of the body that are 'constant' over what we understand to be our 'lifetime', for example two are the central nervous system¹⁴² and the lens of my eye.¹⁴³ Anthropocenic crisis points to the sheer illusion of thinking separation between the biological and the geological. Biological life is a temporal phasing of geological life. The biological comes into being, becomes, through and as the geospherical and continues to become bio-geological in the differing temporalities of eating, drinking, breathing, touching, and in the differing movements of cellular metabolisms and cell replacements.

Bio-geological life is life-field as earth's release *and* welcome of bio-assemblages, to be reformed again from geo-biological matter – Papatūānuku – in eternal differentiations of the whakapapa of life: As part of a frog; molecules within a river, evaporating up into the atmosphere, falling as rain or snow as part of a hydrological cycle; as molecules within a microbe within a human being; or as part of a concrete form or the timber element within a building. In the temporality of the everyday we become atmospheric with each breath we take; we become hydrological with each immersion in the ocean or each swallow of water; we become geological as we sink our fingers into the earth, pulling carrots or digging in compost. As our bodies shed skin cells, excrete wastes, or exhale, we *are* the iterations of becoming-earth, becoming bio-geological. Mauri *is* this imbricated interweaving that is life. Whakapapa is life becoming earth (whaka papa) and world is living-world movement, process as spatial and temporal field. Thinking life-as-field in the Anthropocene requires us to think self as worlding becoming-earth rather than as an ego-identity whose ground as subject-substance finds itself

140 Ron Milo, and Rob Phillips, *Cell Biology by The Numbers* (New York: Garland Science, 2016) 279. See: <http://book.bionumbers.org/how-quickly-do-different-cells-in-the-body-replace-themselves/>

141 Milo and Phillips, *Cell Biology by The Numbers*, 279.

142 Milo and Phillips, *Cell Biology by The Numbers*, 279.

143 Milo and Phillips, *Cell Biology by The Numbers*, 279.

in a transcendent relation to extensity, or object-world as that to be surveyed and known, as that which yields its self for human-centered production. That world equally is illusion, if not sheer madness.

What we call 'form', whether we valorise it as stability of ground, Platonic *eidos*, Kant's time and space as *a prioris* of intuition, or as in-formation, objective distilling of a world ready to give itself up, can only be a fleeting striation or stratafication, arising from a living-world and returning to it endlessly. Particularly, it offers a means of attuning to a counter-practicing of Anthropos, from *Anthropos Ascendens*, to *Anthropos-as-Assemblage*. How then might a framing of life-as-field activate an agency for life-wellbeing in the Anthropocene? If life is understood as biotic, encoded as nucleic life, but also as geologic-hydrologic-atmospheric, how might our practices shift? If we comprehend that the human, too, is already multitudinous as microbe-human supra-organism, how radically might that shift us from human exceptionalism? If we know that life can *only* be lived, can only be sustained as network or field condition, what 'call' does this place on our thinking, systems, products, our dwelling in this world, our thinking of this world as design?

W H A N A U N G A
T Ū Ā P A P A

Visualisations Installations
and Assemblages

Amanda Yates
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W H A N A U N G A
T Ū Ā P A P A

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Chapter 4

Design Ethics for the Anthropocene

INTRODUCTION

Groundwork of a Decolonised Metaphysics of Design

With the previous chapters, I have discussed ora-life, where life is relational wellbeing, where life-wellbeing is connectivity (mauri), and where there is no transcendent *outside* (Death, Nonlife) from whakapapa as becoming-earth, from geo-biological temporalizing. Perhaps we need to think of these initial chapters as being a slow, processual ground-working of a consideration for what the very notion of design could be in respect to this decolonised ontology of living-in-relation, in the 'time' of Anthropocenic crisis, 'time' as critical danger. This introductory title is a paraphrase-borrowing of the famous early formulation by Kant of his *Critique of Practical Reason*, his *Groundwork of a Metaphysics of Morals*.¹ By 'groundwork', Kant did not mean he was presenting already devised foundations or grounding principles. The *work* he wrote was 'spade' work, thinking through and developing the ground-planning, *grund-riss*, geo-logics perhaps.² I do not think discussion through the last three chapters easily opens to design

1 Immanuel Kant, *Groundwork of a Metaphysics of Morals*, trans. H. J. Paton. (New York: Harper Torchbook, 1964).

2 Kant wrote his *Groundwork* in 1785 after completing the first edition his *Critique of Pure Reason* in 1781, with the second edition appearing in 1787. Kant contemplated writing a *Critique of Practical Reason* though needed to do some pre-requisite thinking on the moral law, its empirical and *apriori* natures. Hence, the development of his ground-workings. See *Groundwork*, 59-60 for an outline of the aims of the project.

thinking and practice as it is currently understood and practiced every day and all around us. Anthropocenic crisis *is* design-crisis understood doubly, as crisis of that by which design is fundamentally known, and understood as crisis in how we can come to think design transformatively, come to think the design *of* design. I hang onto a notion of 'metaphysics' from our earlier discussions, as we need to have ontological disclosure of the groundwork of design and not simply descriptively-critical exemplars of design products and design practices, as useful as these are. This research is focused on design thinking, whakaaro, but thinking as hand-work, as doing, as Mika (and Heidegger) might emphasise. This chapter develops this notion directly. The following chapter takes the question of design and design ethics to the crisis locale of the urban. The chapter following that discusses a range of design practices and design ethics encounters that I have worked through during my PhD candidature. But can we say the previous three chapters were essentially concerned with design? This question will be my initial point of departure.

We are heading for extinction. That is the 'message' from the previous two chapters where extinction is exacerbated, rather than staved off, precisely by the complex web of interconnections of the geologic and the biologic. We cannot single out species to save, especially that savage species, *Homo Sapiens*. We, which means molecules of carbon and argon as much as the trees outside my window and my two cats lying beside me as I write, are on the path to extinction. (Well, carbon and argon will, perhaps, remain though no longer by those names, no longer as locales in the Periodic Table, no longer as meaning something in human thinking as 'building-blocks' of life. Is 'extinction', then, nothing more than the loss of meaning inasmuch as thinking and being will no longer belong together in the Same, to paraphrase Heidegger's Parmenides?³) Is extinction anthropocentrism *in extremis* – contra to nonlife? Anthropocentric design got us here. Can anthropocentric design get us somewhere else? Those last two chapters asked the 'Who?' of Anthropos and distinguished between legacies of Western metaphysics in crisis and a colonised Indigenous-Māori metaphysics recognising metaphysical colonisations and thereby resisting them. That resistance to metaphysics in the name of Māori metaphysics is more than taking back one's identity and territory. In fact, it is precisely *not* that, inasmuch as identity and territory are the hallmarks of

3 Heidegger's sustained discussion on thinking and being is found in his relatively short though important essay, "The Principle of Identity," in *Identity and Difference*, trans. Joan Stamburgh. (Chicago and London: The University of Chicago Press, 1969). See especially 27ff for discussion on Parmenides and the belonging together of being and thinking.

Western metaphysical appropriation of the earth. What Carl Mika emphasises as a resistive Māori metaphysics is a way of radically interrogating Anthropos such that the scenario of extinction and design-for-extinction can be rethought. The name I gave to this re-thinking is Anthropos-assemblage. We need to remember that discussion in Chapter One on just what assemblage is, a notion taken from Deleuze and adjudicated on by Buchanan. What is especially crucial in this bringing together of Anthropos and assemblage is that both notions are now radically immanent *to one another*. There is not Anthropos who *then* assembles what is objectively present. *Assembly* is not a technique or method instrumentalised by Anthropos. I dream that these are that vertiginous and radical Spinoza, *that* immanence of immanence that is, for Deleuze, life itself. Can we think design here and design ethics, as that infinity?

This chapter develops in three broad discussions. Initially I aim to frame Western understandings of design, understandings generally conceived of in terms of an anthropocentric worldview, and the human as subject-substance defining and projecting its world as *machination*, as will-to-production. Following this is a discussion of design ethics that aims to be at odds with productionist metaphysics, resonating with an Indigenous understanding of ethics as life force for wellbeing. In a third section engaging mauri-ora directly, I aim to show that which defines or grounds an understanding of design ethics that undercuts and transforms our Western understandings of design. A series of design 'case studies' are discussed. These comprise designed interventions by Māori that include broad approaches to thinking 'design' as environmental intervention, guided by the 'precepts' of whakapapa and mauri-ora. In what immediately follows, I offer an ontological disclosure of the grounds of Western design thinking through three frames, those of Heidegger, Michel Foucault, and Deleuze and Guattari. Heidegger and Foucault alert us to the immediate and present danger; Deleuze and Guattari offer a 'decolonising' thinking of design as a 'new earth'.

1. WILL-TO-PRODUCTION

To begin to characterise Western understandings of design is daunting. To attempt to fully characterise such understandings of design is totalising and impossible. But I need to begin. Coming from the discipline of architecture, my gloss on design will lean to environmental design, and coming at design from the crisis of the Anthropocene, my epochal beginnings will characterise design

thinking that coincides with what Heidegger calls *picturing* the world.⁴ Following aspects of Mika's resonant discussion concerning Heideggerian thinking, I want to commence with aspects of Heidegger's understanding of technological modernity as incipient for approaching what could be termed basic concepts of design. In this I find complete resonance with Mika's discussion of *raupapa* as a particular ordering or 'enframing' that I want to consider as disclosive of what is essential in design thinking for the Anthropocene.⁵ With this notion of *raupapa*, I want to comment on limited aspects of Michel Foucault's thinking that are entirely germane to a fundamental questioning of design. To what extent can we consider what Foucault names 'apparatuses of security' as fundamental ordering of what is, as expressive of what Mika suggests as *raupapa*'s leaning to 'enframing'?⁶ Thirdly, I want to say something, leading from both of these discussions, on a theme we find repeated across the collaborative writings of Deleuze and Guattari, the notion of a "new earth." It appears in *Anti-Oedipus*, is more fully discussed in *A Thousand Plateaus* and, in *What is Philosophy?*, it is aligned with a "people to come."⁷ This thinking of a "new earth" relates in numerous, though perhaps indirect, ways to both Heidegger and Foucault. It seems, though, to relate closely to Māori decolonising metaphysics, to ways in which we can think *papa* in notions such as *whakapapa* and *kaupapa*. But, you might say, none of these are designers or design theorists. Would it not be better to begin with a critical history of design in (say) modernity, discussing key designers and key theoretical frameworks? Well, I will not be altogether ignoring the works of designers or design theorists, though

4 Heidegger, "Age of the World Picture," in *The Question Concerning Technology and Other Essays*, trans. W. Lovitt. (New York: Harper Torchbook, 1977) 115-154.

5 See Mika, "The Ontological and Active Possibilities of Papatūānuku: To Nurture or Enframe," *Knowledge Cultures* 4 (3, 2016): 58-71.

6 See Foucault's discussion on 'apparatuses of security' in *Security, Territory, Population: Lectures at the Collège de France 1977-1978*, trans. G. Burchell. (New York: Palgrave Macmillan, 2007). See especially 46-49 for a summary.

7 See Gilles Deleuze and Félix Guattari, *Anti-Oedipus: Capitalism and Schizophrenia Vol. 1*, trans. R. Hurley, M. Seem & H.R. Lane (New York & London: Penguin, 2009) 320-322; Gilles Deleuze and Félix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia Vol II*, trans. B. Massumi (Minneapolis: University of Minnesota Press, 1987) 338-342, 508-510; Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. G. Burchell and H. Tomlinson (London & New York: Verso, 1994) especially "Geophilosophy," 85-113.

I want to position them, their histories, in relation to an ontological disclosure of the manner by which the beings that are so recognised as 'designed' come to appearance within particular disclosive horizons of Being (Heidegger) or power (Foucault) or becoming (Deleuze), or Papatūānuku (Mika).

The sendings of Being

When we think of Aristotle doing philosophy, we think for the most part of a human being (no doubt a smart one) thinking about the world around him. We say that Aristotelian philosophy is 'realist' in a comparison with (say) Kantianism, which we say is 'idealist'. Aristotle was a realist and Kant an idealist. We also think of Kant as a human subject thinking about the world around him, as some objects of experience. In doing this, we in fact do something a little similar to what Mika terms 'colonising metaphysics'. Aristotle is not a realist in the sense that Kant is an idealist. For Aristotle, there was no subject for whom the world was disclosable as something experienced. To think that was simply not possible. Yet, that 'world' of Aristotle is for the most part closed off to us. Just as that 'world' of Kantian transcendental idealism is closed off. A project Heidegger set himself was the retrieval of the question of Being precisely in the destruction of ontology, of a Western history of the successive ways in which Being has been disclosed. For Aristotle, this was *energia*, actuality though thought essentially in the *kinesis* or movement from *potentia*, potentiality. We level off Aristotelian actuality as 'realism' when in fact it has little to do with a 'modern' understanding of reality. For Kant, Being is essentially disclosed as will, within a transcendental understanding of *Anthropos* that was entirely new to the horizon of thought.⁸ That too is now levelled off as idealism in an epoch for whom the question of Being is otherwise disclosed. Heidegger spent considerable energy in thinking a series of successive disclosures of the meaning of Being within modernity. The disclosive horizon of the meaning of Being holds sway over how we conscious and self-conscious beings come to understand the multiplicity of beings that are. The difficulty is this. Being is not a positivity in the world. It is not a being. Being essentially withdraws as what is essential in the coming to disclosive appearance of beings, extant things in the world. Yet, Being is epochal. It is the essential understanding of history and of temporalizing. Only because Being is historical does there exist history in the

8 Heidegger presents discussions of the being of beings for Aristotle and Kant in many of his lecture courses. For a summary on the epochal nature of being, see "Seminar at Le Thor, 1969: September 2-11," in *Four Seminars*, trans. A. Mitchell. (Bloomington and Indianapolis: Indiana University Press, 2003) 35-63.

sense in which we say things are historical or 'in time'.⁹ You see why Mika so thinks Heidegger's Being along with Papatūānuku.

In order to discuss design in the Anthropocene, we need to have a sense of the epochal unfoldings of the meaning of Being during modernity, coincident with the crisis of Anthropos. Heidegger marks three epochal shifts from the seventeenth century to the twentieth century that successively deepen the crisis of existence as such, precisely as the rise of Science to the pinnacle of 'first philosophy'.¹⁰ The initial one is inaugurated with the Cartesian *cogito*, for which the thinking subject-substance is the meaning of Being.¹¹ The second is inaugurated with Nietzsche's overturning of Platonism in his understanding of Kantian will as will-to-power in all things, confrontation with nihilism precisely in its joyous affirmation.¹² The trajectory leads to what we have already introduced from Mika as the notion of enframing (*gestell*), or what is currently translated as *positioning*, such that all beings are in positioning movements as standing reserve for production, a productionist metaphysics that Heidegger named 'machination' in writings from the 1930s.¹³ A third epochal moment is disclosed to Heidegger from out of the devastation of the second world war, which affected him deeply. This third moment is marked by the essential disclosure of all things as *already consumed* even prior

9 For an excellent discussion on Heidegger's understanding of the epochal history of being, see Derrida, *Heidegger: The Question of Being and History*, trans. G. Bennington. (Chicago: University of Chicago Press, 2016).

10 For a detailed discussion on Heidegger's epochal shifts in modernity, see Andrew Mitchell, *The Fourfold: Reading the Late Heidegger*, (Evanston, Ill.: Northwestern University Press, 2015). See especially "§3: The Standing Reserve and the End of the Object," 36-49.

11 See Heidegger, "Age of the World Picture," 126-130.

12 Between 1936 and 1941 Heidegger undertook a four-year lecture course on Nietzsche. The course was not completed, being interrupted by the war effort. The first two series were "Will to Power as Art," and "The Eternal Return of the Same." Then followed "Will to Power as Knowledge and as Metaphysics," and "Nihilism." The four volumes are published as Heidegger, *Nietzsche Volumes One and Two* and *Nietzsche Volumes Three and Four*, trans. D. F. Krell and others. (San Francisco: Harper Collins, 1979, 1982, 1984, 1987).

13 See Heidegger, *Contribution to Philosophy (From Enowning)*, trans. P. Emad and K. Maly. (Bloomington and Indianapolis: Indiana University Press, 1999) 75-114; and Mitchell's discussion in *The Fourfold*.

to production, that production is the demand of consumption.¹⁴ Consumption is the total annihilation of beings for the sake of a productive apparatus.

For Heidegger, the Cartesian *cogito* establishes the human as that being for whom all beings that are become subjected, as object. This in fact somewhat reverses precisely how Scholasticism saw things, whereby the human was object and a world of things, subjects. Anthropocentrism is inaugurated with Cartesianism, along with what Heidegger calls a 'world picturing' which means the inaugurating of 'representation' as that knowing of things such that the subject-who-knows is *in the picture*, is inclusive as knowing-thing of a thing known.¹⁵ Kant modifies Descartes's 'I think' to the "I will" of reason. World becomes instrumental means for human ends. Science becomes the project of world-understanding as that for human ends. There is a telos, a finality to thinking, to experiencing, to producing, which is essentially anthropology, the logos or logic of *Anthropos*. Inaugurated with Cartesian thinking is design not only for but exclusively as the Anthropocene-to-come, a geological epochal *crowning* of the human as planetary being.¹⁶ Heidegger's "Age of the World Picture" was written during the mid-1930s, at a time when he embarked on a series of difficult and privative writings, commencing with *Contribution to Philosophy (From Enowning)*, and also commencing with a four-year lecture course on Nietzsche which focuses especially on thinking Nietzsche's understanding of 'will-to-power' as the 'eternal return of the same'. Heidegger's formative and key thinking on technology derives from this period. This culminates after the war in his major essay in 1955, "The Question Concerning Technology," which essentially re-thinks the notion of machination he developed in *Contribution*, a thinking that throws together two similar though etymologically unrelated terms, *Machen* (to make) and *Macht* (power), as productionist metaphysics.¹⁷

14 See Heidegger, *Four Seminars*, 61-63.

15 Heidegger, "Age of the World Picture," 128-130: "'Picture' here does not mean some imitation, but rather what sounds forth in the colloquial expression, 'We get the picture' [literally, we are in the picture] concerning something." 129.

16 In this sense, the 'discovery' or naming of the Anthropocene, as geo-epochal, is the culminating of Cartesian rationalism rather than a breaking from it.

17 In fact, Heidegger delivered a prior lecture in 1950, "Positionality," (*Ge-stell*) which formed the basis for his 1955 version. See "Positionality," *Bremen and Freiburg Lectures*, trans. A. Mitchell. (Bloomington and Indianapolis: Indiana University Press, 2012) 23-43.

The terms developed in the later essay, especially *gestell*, positioning, present a more devastating account of the being of mortals in relation to the oblivion of disclosing the meaning of Being as self-withdrawing preserving and securing of what is. During the 1960s, in a series of seminars presented in France, Heidegger addressed directly the writing of Marx on capitalism and on economic production.¹⁸ It is here he draws the most-dire understanding of the meaning of Being as the annihilating-consuming of what is as *prefiguring* or anticipation of production. The produced is the already-consumed. It is not difficult to recognise Anthropocenic crisis in this prognosis. Nor is it difficult to see design as that which has moved during the twentieth century from that essentially concerned with producing as 'world-picturing' for human being to concern with consumption, with design-as-consuming-annihilating as precursor to production as such. Where Mika aims at introducing a fundamental disclosure of raupapa as enframing-positioning, we would extend this notion, in the current epoch of consumption, as the ordering-positioning of what is, revealed as already-consumed.

Normalising extinction

In his 1978-79 lecture course at the *Collège de France, Security, Territory, Population (STP)*, Foucault who is without a doubt informed by Heideggerian phenomenology, offers a somewhat parallel and corroborating 'story' on Anthropo-Ascendency, though his inflection is to that moment when liberalism emerges in European thinking, ushering in fundamentally new modes of the exercise of power coincident with the invention of political economy and the governmental

18 See Heidegger, *Four Seminars*. Indeed, the translator, Andrew Mitchell, at one point suggests that Heidegger 'sounds' more like the French cultural thinker, Jean Baudrillard, than he does like Marx (or even the Heidegger with whom we are more familiar). Hence, Heidegger's emphasis on consumption and replicability and replacement resonates with the Baudrillard of *The Mirror of Production* written at about the same time in fact.

structures of the modern state.¹⁹ What fundamentally constitutes design, for whom it can be for, and by what means it can be achieved all have their grounding reasons in these new modes of the exercise of power. This includes something as basic as who could call themselves a designer; what procedures would they need to follow; what prescribed training would they require in order to practice? How would designs be recorded and attributed? Who constitute the beneficiaries of design? If the Anthropocene is essential danger, is essentially crisis and this danger and this crisis are designed, what defines the *governmentality* of design through these two-to-three hundred years such that design has come to this? This would be Foucault's question, linked as it is, though indirectly, to the disclosure of epochal shifts in the revealing of the meaning of Being.

To briefly summarise the great detail provided by Foucault in *STP*, we are quite familiar with Foucault's notion of disciplinary mechanisms, developed extensively in his popular 1970s book, *Discipline and Punish*. In fact, for the most part Foucault's notion of power was understood from this published writing, along with a series of papers and interviews from a similar period. While we understood power to be productive and not coercive, we also understood it to be essentially disciplinary and confining. His lectures at the *Collège de France* were slow in coming out as publications, and even slower in translating. From *STP*, appearing in French and

19 See in *Security, Territory, Population: Lectures at the Collège de France 1977-1978*. It is in these lectures that Foucault introduces the notion of 'governmentality' that displaces the judicial government of a state from its hitherto centrality in political analyses. Government then becomes one of a panoply of considerations in determining governmentality, or the 'conduct of conduct.' It must be remembered that Foucault, supposedly on his deathbed, gave recognition to the centrality of Heidegger for his ontologies of power, knowledge and self. It should also be remembered that Foucault almost exclusively placed focus on transformations during the second half of the eighteenth century in his studies of the clinic, the prison, the emergence of political economy and liberalism. With sexuality and a 'hermeneutics of the self', his concerns were more so with Greek and Roman *askesis* and law. An exception is his discussion of the emergence of Ordo-liberalism (1930s-1950s) in Germany and Neo-liberalism in the United States in the 1970s. These are discussed in *The Birth of Biopolitics: Lectures at the Collège de France 1978-1979*, trans. G. Burchell. (New York: Palgrave Macmillan, 2008) 185-266. Ironically, Foucault does not at all address, or even really mention bio-politics directly during the entire lecture course.

English only in the first decade of the twenty-first century, we find something quite startling: that we have overestimated the extent to which disciplinary mechanisms define the exercise of power in modernity. In fact, what marks the threshold of modernity for Foucault, during the latter half of the eighteenth century, is the eclipsing *but not disappearance* of discipline and confinement as a state's defining exercise of power. The very notion of a state, its essential governmentality, is defined by the emergence of liberalism, by what Foucault termed *apparatuses of security*. What are these and do they relate to design? Disciplinary mechanisms, working by territorial segmentation and ordering, though working directly on individuated bodies, were the essential mechanisms for a monarch to know what was to be ruled. Foucault's focus is on seventeenth century Mercantilism and what he termed, *Raison d'État*. During the seventeenth and into the eighteenth centuries, that state was surveyed and measured, producing statistics as the limit or extent of a monarch's jurisdiction, or juridical, legal reach. With the increasing development of mercantile capitalism, two new phenomena emerged. One concerned the extent to which a good economy was understood to be one whose flows were unimpeded. Too much governance was harmful to profitability, to essential economic laws that are not the laws of monarchs. The mercantile state of disciplinary mechanisms needed to give way.

The second was the extension of the use of statistics with the invention of probability at the end of the eighteenth century. What gets invented is the notion of *population* as an entity in itself which needs to be governed, though its essential being could not fall under the eye of a monarch, as population was precisely that which was in constant change, to be defined by statistical probability and variance. Hence the 'birth' of what Foucault terms 'biopower'. Epidemics were better understood in this fashion than they were by disciplinary mechanisms of confinement. Population had an order, a life, an understanding not reducible to a simple aggregation of individual orders, lives or understandings. The object of government became population, as an abstract though existing limit to a state's prosperity. If population had its own laws discernible in statistical inference, then the juridical structures of a state needed to be relaxed in order to enable those 'invisible' and entirely 'natural' laws of population to work unimpeded. This gives rise to liberalism, for which the questions of norm, normativity and normalisation take populations from out of the *juridical* apparatus of a state, understood essentially as discipline, and place them into apparatuses of security: Essentially securing freedom for the 'natural' inclinations of the regulatory forces

of 'nature' to ensure the maximising of happiness.²⁰ Design becomes an essential and teleological mechanism by which the individuated freedom enshrined in liberalism is supposedly transferred to all. For example, Rousseau's contractualism becomes the model whereby natural right is transferred to a state's legislative code. We then see through the nineteenth and twentieth centuries the constant shifts in asking if a state is too little governed or overly governed, whether a state should directly intervene in the welfare of its population, in versions of socialism, or should remain as independent as possible from welfare measures. Welfare, in liberal doctrine, upsets the natural laws of population, bringing, in the long term, a greater disharmony.

Anthropogenic crisis as design intervention cannot be separated from this account of the development of the modern state, in the rise of liberalism at the end of the eighteenth century and the exporting of liberalism in colonial expansion and exploitation. The emergence of neo-liberalism in the aftermath of the second world war, coincident with Heidegger's damning account of the essence of technology and oblivion of Being, serves only to expedite the crises in governmentality of the state, now to be thought in fact as planetary governmentality.²¹ Significantly, for Heidegger, it is no longer anthropocentric inasmuch as Anthropos is eclipsed and to be thought solely as raw material, as already annihilated-consumption in a

20 With *STP*, Foucault compares the emergence of the late eighteenth century governmentality of the *économistes* with *Raison d'État*, emphasizing that the *raison*, the reason of the State was not eclipsed but transformed: "Economic reason does not replace *Raison d'État*, but it gives it a new content and so gives new forms to state rationality;" 348. Those new forms will be an economic science understood as a natural science, or a science of the nature of things that fundamentally implicate the human, in particular, population and the market.

21 It is indeed ironic that at the very moment when Heidegger accepts the Rectorship at Freiburg University in 1933, elsewhere at Freiburg University a group of economists were developing the 'blueprint' for Ordo-liberalism, an economic system totally opposing any form of welfare economics, including national socialism. Their aim is to have this implemented when Germany is defeated. Some of the key intellectuals associated with the development of Ordo-liberalism end up at the University of Chicago after the war, establishing the Chicago School of Economics. As mentioned above, Foucault provides a detailed documenting of this in *The Birth of Biopolitics*.

consuming-producing without a 'subject'.²² One may instructively read Foucault's coincident 1970s post-human account of the radical neo-liberal theorist, Gary Becker.²³ Design is, in Foucault's terms, a technique or technology of normalisation, that which sets about, as a corrective apparatus, to affect the abnormal. Danger is, then, all pervasive and immediate, when normalisation requires a corrective apparatus as species extinction, where the abnormal is species survival.

An earth-to-come

The third engagement with design thinking for the Anthropocene comes from the writings of Deleuze and Guattari:

We do not lack communication. On the contrary, we have too much of it. We lack creation. *We lack resistance to the present.* The creation of concepts in itself calls for a future form, for a new earth and people that do not yet exist. Europeanisation does not constitute a becoming but merely the history of capitalism, which prevents the becoming of subjected peoples. Art and philosophy converge at this point: the constitution of an earth and a people that are lacking as the correlate of creation.²⁴

Deleuze and Guattari, across three of their collaborative writings repeat a single refrain, that of a new earth. From *Anti-Oedipus* to *What is Philosophy?* their emphases are a little different, though something important is understood by this notion of *earth*. If above we have outlined prognoses of crisis in considering some of the basic concepts of Anthropocenic design in Heidegger and Foucault, with Deleuze and Guattari we are interested in a disclosive thinking, a complex and radically immanent thinking of a *turn*, a decisive turn in the whakaaro of

22 This is how we understand the ontology of Anthropos-assemblage.

23 Gary Becker was a Professor of Economics at the University of Chicago in the 1970s, and wrote a seminal work on human resources. Foucault provides some detailed discussion on Becker's understanding of the human as an economic assemblage of income flows and productive capacities. See *The Birth of Biopolitics*, 223-233.

24 Deleuze and Guattari, *What is Philosophy?* 108. See also discussion by James Phillips on Heidegger's understanding of a people-to-come and a 'new earth' in relation to the discussion by Deleuze and Guattari: Phillips, *Heidegger's Volk: Between National Socialism and Poetry*, (Stanford, CA: Stanford University Press, 2005) 46-50.

whakapapa, in the thinking of becoming-Being that Deleuze and Guattari name a new earth. What is this 'turn'? In the introduction to this thesis, in Chapter One's engaged discussion of *New Earth Politics: Essays from the Anthropocene*, would we say that Nicholson and Jinnah are discussing the same or a similar entity to Deleuze and Guattari, with this notion of 'new earth'? Or would Deleuze and Guattari be characterised within that book as exemplar of "academic writing" that is "full of jargon, with vague ideas and awkward sentences, developing 'theory' about nothing while the planet burns"?²⁵ These 'new earths' do not coincide at all. Yet I do not think they are in fact incompatible, though their political agencies take us to differing problem fields and approaches. Nicholson and Jinnah's 'new earth' as I discussed in Chapter One, asks for recognition that there is a radically new and irreversible condition, that of the Anthropocene – earth in crisis – that we must learn to work with in radically new ways. For Deleuze and Guattari, what they outline as the radicality of new modes of conceiving and creating concepts, as programme for a coming action and agency, for a coming people, is the 'new earth'. Let's dig a little deeper into their *geophilosophy*.

To do so, and in order to keep in view our understanding of the Anthropocene as design crisis, I want to return briefly to the discussion from Chapter Three on Aion and Chronos in Deleuze's Stoic thinking. As we may remember, Deleuze maintains a curious doubling of bodies-causes-the present and events-effects-infinity of pasts and futures. Though causes are immanent to their effects, bodies are actual and effects are logical attributes of a completely different nature. We see in this differentiation what Deleuze will come to understand as actuality and virtuality, or a logic of sensation and a logic of sense. Bodies are actual sensations as immanent causes to an infinity of effects as sense, virtualities. How are they related? In his book on Leibniz and the fold, Deleuze draws a little Baroque house, with an upstairs and a downstairs and suggests that virtualities and actualities, bodies as immanent material causes of their understandings, encounter one another in folds, in folding and re-folding²⁶. It is not as if actuality is real and virtuality imaginary. Both are real though distinguishable in terms of intensities of attributes

25 Peter Dauvergne, "The Sustainability Story: Exposing Truths, Half-Truths and Illusions," in *New Earth Politics: Essays from the Anthropocene*, ed. S. Nicholson and S. Jinnah. (Cambridge, MA: The M.I.T. Press, 2016) 387-404, 398.

26 See Deleuze, *The Fold: Leibniz and the Baroque*, trans. T. Conley. (Minneapolis: University of Minnesota Press, 1993). 'The Baroque House (an allegory)' appears on page 5.

and extensity of modes. We now return to a question of geophilosophy and the earth. Deleuze and Guattari discuss this within *A Thousand Plateaus* in relation to the notion of territory, of de-territorialisation and re-territorialisation.²⁷ Is territory a small patch of earth? How do we conceive of these two notions? Of course, it is complicated. What most concerns Deleuze and Guattari is how we might continually escape from the empire of signs that close us down as creators, that fix us in the multiple rigidities of social structures. They especially single out family (Oedipus) and work (Capital). Hence their radical engagements with Freud and Marx. Anthropocenic design is such fixities between the poles of Oedipal-desire (familiarisation) and Capital-desire (production-consumption). A key notion, then, is deterritorialisation (D): "D is the movement by which 'one' leaves the territory. It is the operation of the line of flight."²⁸

Territory, then, marks or is the name given to stratification, rigidity of segmentations. They emphasise that, for the most part D becomes overlaid with "compensatory" re-territorialisations, "obstructing the line of flight."²⁹ They ask if there is an "absolute D," one that would not be recouped by compensatory territorial stratifications. It is here they introduce the notion of earth in relation to territory. Firstly, *territory* is *not* a kind of stability or permanent ground thwarting movements or lines of flight. Territory is itself motile becoming, as de-territorialisation is vector-immanent to territory. They say territory is "itinerant."³⁰ But at the same time, de-territorialisation is inseparable from re-territorialisation: "D is never simple, but always multiple and composite."³¹ D is composed of active and passive elements. Hence, re-territorialisation is not a return to a 'stable' territory at all but rather an immanent inflecting of the active and passive elements of D itself. Crucially, concerning the earth they say: "Finally, the earth is not at all the opposite of D: This can already be seen in the mystery of the 'natal', in which the earth as ardent, eccentric, or intense focal point is outside the territory and exists only in the movement of D."³² Earth

27 The terms, 'territorialisation' and 'deterritorialisation' are initially introduced in Deleuze and Guattari's *Anti-Oedipus*, though are significantly extended in *A Thousand Plateaus* when discussing nomadism and the notion of a new earth.

28 Deleuze & Guattari, *A Thousand Plateaus*, 508.

29 Deleuze & Guattari, *A Thousand Plateaus*, 508.

30 Deleuze & Guattari, *A Thousand Plateaus*, 509.

31 Deleuze & Guattari, *A Thousand Plateaus*, 509.

32 Deleuze & Guattari, *A Thousand Plateaus*, 509.

is absolute D: "It presents itself as the material through which human beings tap cosmic forces ... D can be called creator of the earth – of a new earth, a universe, not just a reterritorialization."³³ Our task for the coming future is to recognise the Anthropocene's re-territorialising as design's crisis, in order to think the earth (Papatūānuku) as vertiginous, absolute and infinitising life. Design then becomes *ethos* – an active principle of existence, though 'principle' without territory, an active and absolute D, what I call a minimal ethics.

2. MINIMAL ETHICS

Approaching the thinking of design through ethics positions design practice otherwise, asserting an always-already need to consider the other within the act of design. This approach marks a field of real difference and significance within this research. There is little written on design ethics considered in the terms I have mentioned above – design as natal earth. I move now between philosophy, philosophy of technology and ethics of design and technology. Writing in an issue on design and ethics for the journal, *Design Philosophy Papers*, Tony Fry notes that currently the "cultures of design lack the conceptual tools to think ethics – design philosophy has yet to even arrive at its infancy – which is why ethics ever remains a stranded debate and almost totally without the transformative agency it needs to have if design is to ethically progress."³⁴ Fry makes an impassioned call for design ethics as *futuring*, as a mode of designing that enables, rather than forecloses on, a future and as integral to design practice. Such design ethics would, he suggests, exceed the horizon of the metaphysical, becoming the "animatory matter of worlds that carries our being into the being of futures."³⁵ That animating matter emphasised by Fry coincides with Deleuze and Guattari's 'new earth' as absolute movement of deterritorialisation. Frameworks for ethical life or practice have ancient roots in diverse human cultures and often reveal key characteristics of the cosmo-ontological structures to which they relate. While much Western philosophy on morals attends to relationships between people and their being-in-common, contemporary ethics has begun to extend that frame of relations from

33 Deleuze & Guattari, *A Thousand Plateaus*, 509.

34 Tony Fry, "The Voice of Sustainment: Design Ethics as Futuring," *Design Philosophy Papers* 2 (2, 2004): 150.

35 Fry, "The Voice of Sustainment: Design Ethics as Futuring," 156.

the human to the non-human. This moves towards other traditions that embrace a wider relationality such as that held within the concept of mauri-ora.

Joanna Zylinska, in *Minimal Ethics for the Anthropocene*, analyses what she terms the “planetary emergency” coincident with the Anthropocene.³⁶ The *minimal*, alluded to in the book’s title, is enjoined here *not* in respect to scale – let’s do as little as possible – but as attunement to relational being. This minimal ethics is not a call to do almost nothing, to avoid impacting as much as possible. Rather, the minimal has radical temporal and spatial consequences for how *non-mastery* operates in our thinking and how this hinges to design thinking as such. Zylinska’s minimal ethics is informed by Theodor W. Adorno’s *Minima Moralia* which, in turn, responds in its title, at least, to Aristotle’s *Magna Moralia*. *Minima Moralia* was written in a time of catastrophe, during the Holocaust, and addresses a critical ethical proposition around ‘the good life’ in *extremis*, “when life does not live.”³⁷ Zylinska’s positioning of ethics as a “‘better’ mode of philosophizing, one that precedes ontology and that makes a demand on being”³⁸ comes from the philosophy of Emmanuel Levinas. For Levinas, ethics precedes being because of the paramourcy of encounters with the ‘Other’.³⁹ The ‘Other’ is not a being always already known or knowable, but rather that which is infinitely strange and unknown or unknowable, encounterable as that which opens this existent to question (its) existence. That act of encountering-opening is primordial ethics that opens being, that is, thus, prior to being. Its temporality is radical diachrony, infinitely past and futural. One thinks here of Deleuze’s Aion. Being’s temporalizing is synchronic presencing. One thinks of Chronos. For Levinas, diachrony is a perpetuating interrupting of synchrony, opening an existent to ethics’ temporalizing as the strangeness of existence’s encountering. Such encounters are not necessarily violent. Indeed, Levinas speaks to the concept of gentleness as an “intentional structure” by which the Other “precisely reveals himself in his alterity.”⁴⁰ Levinas addresses the relationship between ethics and politics and the entangling and inexorable nature of ethical

36 Joanna Zylinska, *Minimal Ethics for the Anthropocene* (Ann Arbor: Open Humanities Press, 2014).

37 Theodor Adorno, *Minima Moralia: Reflections on a Damaged Life*, trans. E.F.N. Jephcott (London and New York: Verso, 2005).

38 Joanna Zylinska, *Minimal Ethics for the Anthropocene*, 93

39 Emmanuel Levinas, *Totality and Infinity: An Essay on Exteriority*, trans. A. Lingis. (Pittsburg, PA: Duquesne University Press, 1969) 43.

40 Levinas, *Totality and Infinity* 150.

imperative and responsibility. Emphasis is on the extent to which ethical concerns inevitably play upon the human, and demand a response. His minimal ethics is fundamentally concerned with the singular, with an ethical obligation (infinitely non-reciprocal) that only ever applies to a totalizing-self, and where selfhood is constructed as infinite responsibility such that responsibility is the determinative structure for subjectivity:

The non-indifference to the other as other and as neighbor in which I exist is something beyond any commitment in the voluntary sense of the term, for it extends into my very bearing as an entity, to the point of substitution. It is at the same time prior to commitments, for it disengages in this extreme passivity an undecidable and unique subject. Responsibility, the signification which is non-indifference, goes one way, from me to the other. In the saying of responsibility, which is an exposure to an obligation for which no one could replace me, I am unique. Peace with the other is the first of all my business. The non-indifference, the saying, the responsibility, the approach, is the disengaging of the unique one responsible, me. The way I appear is a summons. I am put in the passivity of an undecidable assignation, in the accusative, a self. Not as a particular case of the universal, an ego belonging to the concept of ego, but as I, said in the first person – I, unique in my genus... In the absolute assignation of the subject the Infinite is enigmatically heard: before and beyond.⁴¹

This ethics as primacy, involving a first duty to the Other, is invested with a transcendent Infinity wherein the Other and responsive subject, stand in also for the Infinite. Transcendence at the heart of radical immanence.

Zylinska's minimal ethic finds its greatest inspiration from Levinas's ethics *before being* (i.e., prior to ontology), before knowing. Levinas gives the name to this before, "*Metaphysics*."⁴² And as such this ethical frame may be understood as operating

41 Levinas, *Otherwise Than Being Or Beyond Essence*, trans. A. Lingis. (Pittsburg, PA: Duquesne University Press, 1998) 138-139.

42 See Levinas, *Totality and Infinity*, 43: "Metaphysics, transcendence, the welcoming of the other by the same, of the Other by me, is concretely produced as the calling into question of the same by the other, that is, as the ethics that accomplishes the critical essence of knowledge. And as critique precedes dogmatism, metaphysics precedes ontology."

prior to anthropocentric thought. *Ethics-as-asymmetry* within this research—mauri-ora—is life-field *prior* to human-centeredness. This priority of a pre-ontological arrival is a *before* mastery or colonisation with respect to whakaaro, to thinking. Thinking what? – Differences across plateaus of thought (Māori, Western, Chinese) gathering a fundamental attunement as *ethics before the being of the human (ontology)*. This *a priori ethics* is radically immanence/transcendence (vertiginous time) that dislocates human-centeredness and *gives a returning toward* life-field immanence as genuine gift (*es gibt*: it gives) for design thinking. Where Levinas's ethics constitutes transcendent–infiniting–Otherness that itself constitutes an anthropo-theology, Zylinska aims, in *Minimal Ethics for the Anthropocene*, to 'suspend' mastery of the human (whether subjective or objective genitive) via a critical positioning. For Zylinska humans are "... [a] complex and dynamic network of relations in which "we humans" are produced as humans and in which we remain entangled with nonhuman entities and processes."⁴³ As Zylinska suggests, Anthropocenic "ethics could be described as a practice of not only becoming in and with the world but also of working out possibilities for what we will decide, through deliberation, policy work and conflict resolution, to be ways of *becoming better* in the world."⁴⁴

Minimal Ethics for the Anthropocene addresses the 'scalar derangement' attendant to many discussions of climate change – eco-enthusiasts exhorting planet-saving short showers, or humanities scholars focusing their writings on the "planet" – as it speaks to a universal scale that "circumscribes how relations, entities and phenomena appear to us"⁴⁵ while also confirming "*our* specific locatedness in space and time [and] the partiality of a story we can tell, or of an intervention we can make."⁴⁶ As a feminist – or post-masculinist – strategy, the text acknowledges a multi-scalar universe while refusing an aggregated or singular reading such that minimal ethics is "inevitably a form of pragmatics. It involves recognizing, as well as undertaking, pragmatic temporary stabilizations of time and matter."⁴⁷ Zylinska writes also of the way that contemporary emphases on process philosophy can be read as an "attempt to overcome the inherent bias of Western metaphysics, which has shaped many static concepts and assumptions that underpin our language and

43 Zylinska, *Minimal Ethics for the Anthropocene*, 13.

44 Zylinska, *Minimal Ethics for the Anthropocene*, 93.

45 Zylinska, *Minimal Ethics for the Anthropocene*, 28.

46 Zylinska, *Minimal Ethics for the Anthropocene*, 28.

47 Zylinska, *Minimal Ethics for the Anthropocene*, 31.

worldview."⁴⁸ She insightfully draws out a balancing of or temporal disruptions to such process-oriented thought with object-oriented thinking, particularly in order to outline how short-term stabilisations to flows of life can enable thinking process-entity dualism.⁴⁹ Minimal ethics resonates with a design thinking of mauri-ora as it aims at disruptive vitality.

Povinelli, discussed especially in Chapter Two, offers the following when discussing ethics:

[Ethics is a] practice of effort oriented to the formation of new existents and new planes of existence. This ethics does not have an external – transcendent/transcendental point of view to/about any given plane of existence. It cannot, given that an immanent ontology does not allow for adjudication external to the plane of existence. How and why, therefore the ethical subject puts effort here or there, on this or that, now or then, must be understood outside the comfort of normal adjudication.⁵⁰

Ontology's power she argues:

... [is in] its ability to transform a regional plane of existence – loosely speaking, Western understandings of those entities that have these capacities – into a global arrangement. Ethics is the practice of effort that opens the conditions and cares for the entities that are this division's otherwise.⁵¹

We sense strong resonance between Povinelli's defining of ethics and our discussion above on Deleuze and Guattari's 'new earth', where earth exists only in the movement of deterritorialisation. It is, perhaps, easier to move, within the unfolding of our discussion, from Deleuze and Guattari's geo-philosophy, to Povinelli's geontology, and then to Zylinska's minimal ethics for the Anthropocene. We would need to have a long discussion on Deleuze and Levinas to work through this further. For now, from Zylinska's opening to questions of agency and action, as

48 Zylinska, *Minimal Ethics for the Anthropocene*, 38.

49 Zylinska, *Minimal Ethics for the Anthropocene*, 39.

50 Elizabeth Povinelli, "Geontologies of the Otherwise." *Cultural Anthropology*. <https://culanth.org/fieldsights/465-geontologies-of-the-otherwise> Accessed January 2014.

51 Povinelli, "Geontologies of the Otherwise."

ethical practices, we move to discussion of exemplar practices in design ethics that question an ethos of things.

Design, Technology and Ethics

In "Design Ethics or the Ethos of Things," Cameron Tonkinwise discusses ethics in contexts of design and sustainability.⁵² He refers to Francisco Varela's *Ethical Know-how*, which locates the ethical as "dispositional and enactive."⁵³ Tonkinwise develops a relationship between ethics as moral injunction and *ethos* as appeal or operation of ethics, as 'lived' enacted culture-as-practice. With respect to ethics, culture and design as agents of ethical acculturation, he asks: "Irrespective of what coherent ethical system is elaborated, how can it possibly come into being? A lack of ethics *qua* ethos is essentially a lack of ways of integrating what is known into what is done."⁵⁴ At issue here is the ability to activate ethics as designing-living. In this sense of a 'designing-living', Bruno Latour has developed an understanding of ethics that implicates human and nonhuman *actors*, wherein nonhuman 'things' have ethico-moral effects. Agencies of designed things are central to Latour's thinking. For example, everyday urban encounters, such as the ubiquitous speed bump or 'sleeping policeman', are important considerations.⁵⁵ The speed bump introduces an actantial shift: It is an actant capable of slowing cars. It is a commingling of matter – gravel, concrete, paint, earth, iron – and prescriptive institutional actants as an interactive 'moral' technology. As Latour suggests: "... engineers and chancellors and lawmakers ... where society and matter exchange properties."⁵⁶

52 Cameron Tonkinwise, "Ethics by Design, or the Ethos of Things," *Design Philosophy Papers* 2 (2, 2004).

53 See Francisco Varela, *Ethical Know-how: Action, Wisdom, and Cognition*, (Stanford, CA: Stanford University Press, 1999). The book comprises three lectures: "Know-How and Know-What," "On Ethical Expertise," and "The Embodiment of Emptiness." Varela's description of this book resonates closely with my own approaches: "I draw, on the one hand, from scientific work as a necessary reference point for philosophical reflection; on the other, I extend the philosophical horizon to include non-Western traditions." ix.

54 Tonkinwise, "Ethics by Design, or the Ethos of Things," 131.

55 Bruno Latour, "On Technical Mediation – Philosophy, Sociology, Genealogy," *Common Knowledge* 3 (2, Fall, 1994): 38.

56 Latour, "On Technical Mediation – Philosophy, Sociology, Genealogy," 41.

Tonkinwise engages design strategies developed by Jaap Jelsma, ones that reference Latour's understanding of the ethical agency of things.⁵⁷ These strategies follow the 'script' method developed by Latour and Akrich.⁵⁸ A 'scripting' method, for example, is a toilet that offers various water conserving functions via different flush-functionalities. Jelsma notes that scripting of behaviours may have unintended effects, akin to Latour's "trespassing dog" (discussed below), and thus his design process aims to consider and respond to multiple-user scenarios and, critically, to retain the capacities of users to tactical counter-practices. For Tonkinwise, Jelsma's approach to designing behaviours is neither deterministic nor directive but, rather, operates as a responsive "ecologism", a situated enabling that Tonkinwise understands from the work of Gregory Bateson.⁵⁹ Tonkinwise presents, perhaps, design's radical potential to enact the ethical:

Being embedded in material culture, in the only ever semi-conscious everyday rituals of making use of designed products, environments and communications, ethics by/in design is the only sustainable form of ethics, the only form of ethics that can sustain itself. If we are dependent upon what we design to live, and what we have designed is ethical, that is, designs ethical ways of being, then we are consequently ethical in how we live....⁶⁰

While Tonkinwise focuses his discussion on materialised ethics embodied within designed things, he concludes by acknowledging the difficulties inherent in

57 See, for example, Jaap Jelsma and Marjolijn Knot, "Designing Environmentally Efficient Services: A 'Script' Approach," *The Journal of Sustainable Produce Design* 2 (3-4, September, 2000): 119-130; Jaap Jelsma, "Innovating for Sustainability: Involving Users, Politics and Technology," *Innovation: The European Journal of Social Science Research* 16 (2, 2003): 103-116.

58 Madeleine Akrich and Bruno Latour, "A Summary of a Convenient Vocabulary for the Semiotics of Human and Nonhuman Assemblies," in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, ed. W. E. Bijke and J. Law. (Cambridge, MA and London, UK: MIT Press, 1992) 259-264.

59 Tonkinwise, "Ethics by Design, or the Ethos of Things," 138. See Gregory Bateson, *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*, (Northdale, NJ: Jason Aronson, 1972).

60 Tonkinwise, "Ethics by Design, or the Ethos of Things," 138-139.

designing ethics as embodied artefact or delegated morality: "While aiming at a dispositional ethics, open yet embedded, a certain instrumentalism risks returning the result to moral conventionalism."⁶¹ In a footnote, Tonkinwise references François Jullien's *The Propensity of Things: Towards a History of Efficacy in China*, a book we discussed in Chapter Two in the context of shuttling between China and the West. He asks whether, following Jullien's translation of the Confucian notion of *shi* as "propensity," a designed ethos is indeed best interpreted as the "propensity of things" to act in certain ways.⁶² Jullien's subtle thinking around propensities suggests these as inclinations or potentials that are radically contextual, informed and inclined by the specificities of relationships between various heterogeneous conditions. These propensities are not end-means oriented. They are not overtly directive and as such are not immediately instrumental. Yet they can materialise events, actions, and relations powerfully if supporting conditions are manifest. Indeed, at the opening to Chapter Three we have already said as much, in beginning to think relationality between *shi* as animating force and *mauri* as life force.

As exemplar of resistant, emergent or 'unprogrammed' agency of things, it is useful to reference Latour's earlier mentioned "trespassing dog" and the "Berliner key."⁶³ The not-uncommon failure to lock one's front door within the milieu of city housing (for example within the city of Berlin) may lead to a surreal instrumentalism. The "Berliner key" is designed as a device that both prescribes an *unlocking*, but then a subsequent re-securing – without that further turn, the key cannot be removed. Describing the inherent difficulty of this kind of prescriptive programming, Latour notes that an anti-programming is inherent within the design: "A really bad guy may relock the door without closing it! In that case the worst possible antiprogram is in place because the lock stops the door from closing."⁶⁴ This scenario demonstrates a radical failing of the design as it *extends* the propensity, the *shi*, for

61 Tonkinwise, "Ethics by Design, or the Ethos of Things," 139.

62 Tonkinwise, "Ethics by Design, or the Ethos of Things," 144.
François Jullien, *The Propensity of Things: Towards a History of Efficacy in China*, trans. J. Lloyd. (New York: Zone Books, 1995).

63 Bruno Latour, "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts," in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, ed. W. E. Bijker and John Law (Cambridge, Mass.: MIT Press, 1992) 225-258.

64 Latour, "Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts," 174.

unapproved entry from humans to nonhuman denizens of a city: “A dog knowing nothing about keys, locks, and blacksmiths is now allowed to enter! No artifact is idiot-proof because any artifact is only a portion of a program of action and of the fight necessary to win against many antiprograms.”⁶⁵ This reciprocity between social role and technology, the active mediating as translation/transformation that occurs between human and nonhuman – what Latour calls “technical mediation” – is complex.⁶⁶ Here lies one of the difficulties in manifesting directed design ethics or, following Tonkinwise, a design *ethos*, of things: The process is non-linear with a complex reciprocity and porosity of programming that can lead to tangential end uses. The limitations of means-ends instrumentality of design is revealed. Indeed, Edward Tenner refers to the “revenge effects of technologies” wherein design intent is radically subverted under usage in unintended and complex ways: Antibiotic resistant bacteria, for example, or system-crashing false alarm calls from automatic security systems.⁶⁷

Emphasis on the particular agencies of things underpins Peter-Paul Verbeek’s critique of Jelsma’s ‘inscription’ approach.⁶⁸ Verbeek suggests that the scripting process fails to engage with how designed things – technologies – always-already shape actions. In *Moralizing Technology: Understanding and Designing the Morality of Things*, Verbeek suggests that technology has an already moral dimension, evident in how it affects our lives for better or worse. This passive agency is complemented by an active agency in terms of the ways things may ‘shape’ our actions, thus “participating in our ways of doing ethics.”⁶⁹ To explain this, Verbeek refers to Latour’s example of speed-bumps located close to schools, and Latour’s affirmation of nonhuman entities as ethical agents. As Verbeek notes, ethics thinking has to date largely understood ethics as the preserve of humans. Current thinking on technology and ethics addresses the ethics of *things*. Verbeek

65 Latour, “Where Are the Missing Masses? The Sociology of a Few Mundane Artifacts,” 174.

66 Bruno Latour, “On Technical Mediation—Philosophy, Sociology, Genealogy,” *Common Knowledge* 3 (2, Fall 1994): 29-64.

67 Edward Tenner, *Why Things Bite Back: Technology and the Revenge of Unintended Consequences*, (New York: Vintage Books, 1997).

68 Peter-Paul Verbeek, *Moralizing Technology: Understanding and Designing the Morality of Things*, (Chicago and London: The University of Chicago Press, 2011) 114.

69 Verbeek, *Moralizing Technology*, 1.

comments on Latour's reference to the Dutch village of Makkinga, with its street design strategy that requires (or asks) those using streets to take responsibility as they engage with the milieu in their various ways. In contrast, Verbeek suggests that there is hybridity here: "Moral action is a *practice* in which humans and non-humans are integrally connected, generate moral questions, and help to answer them."⁷⁰ But what does this ethics of things encompass? What are its limits?

Verbeek proposes a return to that question of how a 'good life' can be lived, but with an extra cast of moral agents, in the form of the multi-various technologies with which that life is now lived: "The way in which we live is not only determined by moral decision-making but also by the manifold practices which connect us to the material world in which we live. This makes ethics not a matter of isolated subjects, but rather of connections between humans and the world in which they live."⁷¹ Verbeek suggests that an approach he terms "moral mediation" can amplify the effectivity of existing methods of design ethics. Technology is understood as active moral agent that mediates human agency. Design of technology processes that attend to *mediation* are reflexive, wherein design acts are implicated as agency-mediators, and contextual interactions of human beings and things must be considered. Processes of technology design are a moral manifesting that attends to the moral charge of the thing designed. Verbeek calls these processes "... a form of materializing morality."⁷²

Other Animal Ethics

Our challenge from the beginning has been to re-think *Anthropos*, to re-think this 'animal' with reason, with ratio, and with language. Decolonising metaphysics and Indigenous-Māori whakaaro are our approaches. And so, I turn to 'other animal' ethics and to Indigenous-Māori mauri-ora, an ethics of wellbeing for life. Witi Ihimaera's celebrated novel *The Whaler Rider* is, perhaps, a moment enacting this turn.⁷³ This story brings to relation an ancient whale, a tipuna, an ancestor, and a whale-rider, Paikea. Then there are Paikea's spears that transform, whakaahua, becoming other, including a young girl with whakapapa to Paikea. As Graham Harvey writes, in *The Handbook of Contemporary Animism*, both animal and artefact relational agencies are inherent within the story. The narrative

70 Verbeek, *Moralizing Technology*, 38.

71 Verbeek, *Moralizing Technology*, 31.

72 Verbeek, *Moralizing Technology*, 128.

73 Witi Ihimaera, *The Whale Rider*, (Auckland, NZ: Penguin, 1987).

works "... on the assumption that whales make choices and live relationally."⁷⁴ Paikea, in carved form, remains an active figure addressed directly and venerated as a relational constituent of a cosmic-social complex.⁷⁵ In what follows I aim to imbricate Western science and Indigenous understandings of life ethics, mauri-ora, much in the way I earlier suggested as resonant with that approach taken by Francisco Varela. When viewed from the stable grounds of Western Substance-philosophy, the following science may read as 'weak' anthropomorphising, long critiqued in Indigenous thinking. Yet this contemporary 'earth' science resonates strongly with the becoming-(un)grounds of whakapapa, as genealogical lineage but, more profoundly, as radical relationality and oscillating temporality inherent in becoming-earth.

As many technology ethicists note, ethics is thought as human agency, though ethical agency of humans now extends to domains of animal and vegetal life, along with the preserve of the inorganic. This research suggests that, despite evidence of an ethical agency of the human for a broad eco-ontological living field, maintaining an ontology of the ethical as human agency limits the very surviving of the living. Certainly, within the Anthropocene, there is urgency to exceed a humanism or humanitarianism of thinking as such and of life-thinking and of living well. I earlier mentioned research concerning the LUCA, the last known common ancestor of all biologic/nucleic/DNA-based life. We share DNA as a coding with all nucleus-based life. Animal intelligence science is continually generating new research, which implicates a wide range of nonhuman entities as cognitively complex. In a 2013 *Live Science* opinion editorial, Marc Bekoff claimed: "After 2,500 Studies, It's Time to Declare Animal Sentience Proven."⁷⁶ In *Animal Wise: The Thoughts and Emotions of Our Fellow Creatures*, Virginia Morell reviews a range of current studies exploring animal sociality.⁷⁷ Morell suggests that, given that we "now know we live in a world of sentient beings, not one of stimulus-

74 Graham Harvey, "Animist Realism in Indigenous Novels and other Literature," *The Handbook of Contemporary Animism*, ed. G. Harvey (London and New York: Routledge, 2014) 464.

75 Harvey, "Animist Realism in Indigenous Novels and other Literature," 465.

76 Marc Bekoff, "After 2,500 Studies, It's Time to Declare Animal Sentience Proven," *Live Science*, (2013): <https://www.livescience.com/39481-time-to-declare-animal-sentience.html>

77 Virginia Morell, *Animal Wise: The Thoughts and Emotions of Our Fellow Creatures*, (New York: Crown Publishing, 2013).

response machines, we need to ask, how should we treat these other emotional, thinking creatures?"⁷⁸ In *Rattling the Cage*, Steven Wise makes the case for some 'cognitively advanced' animals to be granted legal rights based on robust evidence that they possess a theory of mind and are therefore self-aware.⁷⁹

Aiming to add fuel to debates around the presence of 'cultural processes' in nonhuman animals, Luke Rendell and Hal Whitehead research what they term 'cetacean culture', which is to say, cultures of whales, to continue our opening on animal ethics and whale ridings.⁸⁰ They work with a definition of 'culture' based on the research of anthropologist, Robert Boyd, and environmental scientist, Peter Richerson: "Culture is information or behaviour acquired from conspecifics through some form of social learning."⁸¹ In response to an article claiming a sharp discontinuity between human and nonhuman cognition, Louis Herman, Robert Uyeyama and Adam Pack review a range of studies that show a capacity for higher-order reasoning within the terrestrial-divergent brain architecture of dolphins.⁸² Hermann suggests that this reasoning capacity may come into being through successive sensorimotor experiences, as lived, encultured experience. Building the cultural processes argument, Orcas have been observed performing teaching-like behaviours with juvenile individuals 'learning' to hunt prey.⁸³ Frans de Waal notes that in field studies, ethologists have long established that chimpanzees exhibit complex or culturally transmitted behaviours, including deception and teaching-like behaviours.⁸⁴

78 Morell, *Animal Wise*, 261.

79 Steven Wise, *Rattling the Cage: Towards Legal Rights for Animals*, (Cambridge, MA: Perseus Books, 2000).

80 Luke Rendell and Hal Whitehead, "Culture in Whales and Dolphins," *Behavioural Brain Sciences* 24 (2001).

81 Rendell and Whitehead, citing Boyd and Richerson, "Culture in Whales and Dolphins," 310.

82 Louis M. Herman, Robert K. Uyeyama and Adam A. Pack, "Bottlenose Dolphins Understand Relationships Between Concepts," *Behavioural and Brain Sciences* 31 (2, April 2008): 139.

83 Rendell and Whitehead, "Culture in Whales and Dolphins," 317.

84 Frans De Waal, *The Ape and the Sushi Master: Cultural Reflections by a Primatologist*, (New York: Basic Books, 2001).

As the director of Harvard University's Moral Psychology Research Lab, Fiery Cushman notes behavioural research is beginning to show that animals share with humans "not only common ancestors, but a common suite of behaviours and mental experiences."⁸⁵ This includes, potentially, what is often thought most human – moral capacity. While there is a robust debate as to the degree of cognition and the relationship between higher cognition and morality, Cushman suggests that it is very likely that moral behaviour has an adaptive inception and this adaptive impulse is evident in the pro-social behaviours seen in collective species other than our own, including in our primate cousins. In *The Bonobo and the Atheist*, de Waal argues that moral behaviour predates human religious thought and co-evolved in the brain biology of humans and nonhuman primates alike.⁸⁶ De Waal focuses on altruistic and benevolent behaviours as evidence of animal morality, and refers to increasing evidence that many animal brains, including ours, are "hardwired for social connection."⁸⁷ Social connection requires an advanced form of self-awareness that enables so-called empathetic perspectives, where an individual is able to "move beyond being sensitive to others toward an explicit other-orientation."⁸⁸ De Waal notes that it is likely that there is an ontogenetic co-emergence of self-recognition (assessed through a mirror test in which individuals recognise a self) with an empathetic awareness of other – *the sense of self*

85 Fiery Cushman, "Aping Ethics: Behavioural Homologies and Nonhuman Rights," in *People Property or Pets*, ed. M. D. Hauser, F. Cushman, M. Kamen (West Lafayette, Ill: Purdue University Press, 2006) 105.

86 Frans de Waal, *The Bonobo and the Atheist: In Search of Humanism Among the Primates* (New York and London: W.W. Norton & Company, 2008).

87 Frans de Waal, "Putting the Altruism Back into Altruism: The Evolution of Empathy," *Annual Review of Psychology* 59 (2008): 292.

88 De Waal, "Putting the Altruism Back into Altruism," 285.

*here occurs in relation-to-others.*⁸⁹ For de Waal, the combination of empathetic perspective-taking abilities and an empathic motivation mechanism enables "intentionally altruistic altruism in a few large-brained species."⁹⁰

Empathy

For de Waal, evidence suggests that empathy is likely a phylogenetically ancient proficiency, "probably as old as mammals and birds."⁹¹ He argues:

The selection pressure to evolve rapid emotional connectedness likely started in the context of parental care long before our species evolved (Eibl-Eibesfeldt 1974 [1971], MacLean 1985) ... Avian or mammalian parents alert to and affected by their offspring's needs likely out-reproduced those who remained indifferent. Once the empathic capacity existed, it could be applied outside the rearing context and play a role in the wider network of social relationships.⁹²

As an example, de Waal refers to an experiment where a rat is offered a choice between gaining access to food (chocolate) and releasing a suffering and trapped

89 This is a difficult, complex and highly nuanced 'point', when considering Levinasian ethics and these life sciences positions. Levinasian ethics is peculiarly anthropocentric, and Levinas has been 'accused' of ignoring animal ethics entirely. Though we do not read him so harshly and recognise in the radical strangeness and unknowability of the other that there is nothing to discount exists other than human. Though the problem to identify also goes in the other direction. We can potentially critique a range of inferences from these science studies that may simply be moving animal-being into the problem field of humanism's ego-moral being, rather than dismantling humanism's ego-centrism and morality. As an example, when in 1903 Thomas Edison wanted to demonstrate the usefulness of electricity as a 'humanitarian' means of capital punishment, his opportunity came when a trained circus elephant, Topsy, turned on her trainer and killed him after repeated cruel provocations. The elephant was 'sentenced' to death and electrocuted. The killing was filmed and can be viewed at: <https://www.youtube.com/watch?v=NoKi4coyFw0>

90 De Waal, "Putting the Altruism Back into Altruism," 292.

91 De Waal, "Putting the Altruism Back into Altruism," 279.

92 De Waal, "Putting the Altruism Back into Altruism," 282.

rat.⁹³ The rat acts altruistically, releasing the other animal before acting in its own self-interest. It may be that if the basic building blocks of cognition are evident across a range of species then our human social structures may be on a continuum with those of other collective-culture entities, such as the great apes, dolphins, and elephants. Further, these shared social practices may include that of *ethics* based on an inherent awareness of the other anterior to self-awareness as process. Exploring the ethics of animals, other than ourselves, reveals a potential pro-social *relational* substrate – an ethics – within many forms of life. It seems that, as Indigenous ontologies already register, relational ethics may be a biologically ancient condition, a connective becoming coevolving with and as life itself.

Thinking Design

Within this research it is important that the term 'ethics' finds its *appropriate* voice developing Māori and eco-relational thinking. Mauri-ora is a step towards finding a practice and strategy for this ethics *before* human being, as radical immanence. *With whakapapa, mauri is primordial, before the being of the world. In animal ethics, mauri is awareness before being a self.* Mauri is life-field *before* us, cosmic-natality, a new earth of whakapapa as a multi-entity becoming within which the human is teina, junior relative, offspring. We come from, live amongst and, with an ethos of care, may maintain mauri *if* we attend to the vitality of ora, in mauri-ora, life-field. Thinking mauri, life-force, as field situation and as correlative condition, questions how we take action in a living-world. This implicates acts of designing, given the degree to which human-designed artefacts and habitats have now formed and reformed the geosphere.

The movement from mauri to mauri-ora reveals immanent ethics in practice. Mauri-ora suggests a pathway for how ecological thinking and ecological design can together become as thinking-practice, as design-ethics within Aotearoa New Zealand. There are many different approaches to immanence-ecology as being-with. In the following, this chapter aims at articulating the being-with of Indigenous-Māori and Western ecological design, whether that design is object-like or normative-prescriptive or juridical-legislative. Colonising and decolonising metaphysics are always the risk here, as much of my earlier discussion has emphasised. This risk, for Deleuze and Guattari, would be the propensity for deterritorialising to be ensnared in reterritorializing moments, internal to the elements of deterritorialising itself. Thus, in what follows, and as design

93 De Waal, *Are We Smart Enough To Know How Smart Animals Are?* (New York, and London: W. W. Norton & Company, 2016) 211.

'case studies', I explore how ethos, thought and practice attend to how ancient cosmo-ontological concepts – such as whakapapa and mauri – may fold with contemporary Anthropocenic conditions in order to design a thinking capable of exceeding Anthropos as transcendent isolate. The projects discussed here present situated design ethics as mauri-ora.

3. MAURI-ORA

Mauri is that binding force that establishes life as connection. As discussed in Chapter Three, hau ora (wind of life) is a life force characterised by exchange, which in turn builds relational connection. Ora is life, aliveness, health, energy, wellness. Mauri-ora, then, is life, wellbeing that comes from connection, from the binding together of life-fields. This definition of life is concerned not with a distinction between life, death and nonlife but with diverse wellbeing through relationality. Ethical care – mauri-ora – for maintaining the mauri of the living-world is and was practiced within Indigenous-Māori cultures, in a socio-cultural-ecological nexus wherein iwi and hapū (extended family groups) identify powerfully with their regional domains. Performative recitations of belonging – whakapapa – identify predominant cultural-landscape elements, such as awa (rivers) or maunga (mountains) as ancestral linkages to place. Rahui, bans on harvesting, enable a re-balancing to occur if yields decline. Karakia – ritual chants – uttered prior to crafting or harvesting, ask permission from atua (deities) within the living-world, and focus attention on the mauri or life of the harvest or materials to be crafted. Karakia are a primary method of performatively reinstating fundamental notions. Michael Shirres emphasises:

Like other Māori recited chants, [they] are partly composed of conventional formulae. They differ in their musical style, a very rapid monotone chant, and in their almost exclusive use of conventional language, symbols and structures. They thus 'speak the words of the ancestors' and are the work of a people, rather than an individual. The chants of Māori ritual, often invoke the atua and are a means of participation, of becoming one with the ancestors and events of the past in the 'eternal present' of ritual.⁹⁴

94 Michael P. W. Shirres, "An Introduction to Karakia", PhD dissertation (University of Auckland, 1986).

Shirres further notes: “[There are karakia for] the major rituals, that is, for the child, the canoe, the kumara, the war-party and for death. There are also karakia for minor rituals and for more individual needs – for the weather, for sickness, for daily work and daily living.”⁹⁵ Mauri-ora exists here as embodied ethics which pervades major communal events and minor everyday happenings, activating an indwelling at all scales of Indigenous-Māori life.

Whakapapa, as embedded relational framework or structuring, determines understandings of material entities and expands concepts of family beyond human-centeredness. For example, Joan Metge suggests that Māori consider harakeke (flax plant) as whanau (part of one’s family) and identify the rito (flax ‘frond’) in each fan as tamaiti (child), emerging from and protected by its matua (parents) on either side. This acknowledges that two whakapapa or genealogical lines of descent arise from the two parents.⁹⁶ Weavers acknowledge harakeke prior to harvesting it. Hirini Mead notes, concerning working materials: “[Weavers] are subject to similar rules that all other artists using natural materials have to observe. Thus for weavers there are special rules for the care of harakeke, for cutting harakeke, preparing the strips needed for some baskets and mats, and for clearing the green material away from a leaf in order to reveal the white fibres needed.”⁹⁷ Through these practices of care (as mauri-ora), acknowledgement of the central premise of mauri, and interconnections of whakapapa, are reiterated and performed as karakia – invocation – and within ritualised acts of harvest and careful crafting to maintain the mauri of things made.

CASE STUDIES

Briefly, I want to discuss five recent Māori design ‘interventions’, each of which has its moments of decolonising metaphysics of the Anthropocene. By ‘design’ these five short studies point to quite different understandings within a broad milieu of making. The M.V. Rena is indicative of how a disaster situation is recognised, comes to appearance (ira) or is held, nurtured or enframed (raupapa). The very understanding of the situatedness of things is a design-horizonal thinking (whakaaro). Te Uru Taumatua is an architectural project, collaboration between

95 Shirres, “An Introduction to Karakia.”

96 Joan Metge, *New Growth from Old: The Whanau in the Modern World*, (Wellington, NZ: Victoria University Press, 1995), 15.

97 Hirini Moko Mead, *Tikanga Maori: Living by Maori Values* (Wellington: Huia, 2003) 258.

Māori and a leading New Zealand architectural design firm, Jasmx. The Wai 262 Claim takes a question of design to the locale of the governmentality of the environment. This instantiates the extent to which legislation as design determines how we are able to recognise extant entities. Te Awa Tupuna takes us again to juridical structures that are able to determine the constitution of living entities. In this we recognise the extent to which a Māori decolonising metaphysics runs headlong into colonising law, along with presumptions on entities coincident with the grounds of Western legal frameworks. Te Urewere is our last moment, and comprises yet another confrontation of colonial and decolonising forces, this time in defining or designing what constitutes wilderness, a national park whose conserving 'good' is the dispossession of Indigenous caregivers to the land.

1. M.V. RENA

Kepa Morgan describes mauri as the measure of sustainability, the "life supporting capacity of an ecosystem inclusive of people who are an inseparable part of it."⁹⁸ He activates the concept of mauri as centrepiece of a holistic sustainability assessment 'tool' he designated as the 'Mauri Model Decision Making Framework'. Morgan describes this model as sitting at the "fertile interface of our collective knowledge systems," a calculative apparatus that aims to engage sustainability assessment, acknowledging Indigenous and scientific cultures.⁹⁹ Morgan employed the 'Framework' in a study that addressed the impact of the grounding of the M.V. Rena, a container ship that ran aground on Astrolabe reef near Tauranga, on the east coast of New Zealand's North Island, on the fifth of October 2011. In January 2012, the ship broke apart releasing contaminants, including oil, onto the coastal environment. The oil spill was devastating to the region, with widespread effects on wild-life and environment. Importantly, for this research, consultation during the attempted remediation process led local iwi, Te Arawa, to request that the primary goal of the restoration be to *restore the mauri* of the area. In confirming a goal of restoring the mauri of the area, the New Zealand government acknowledged and validated the concept of mauri within an environmental restoration process.

98 Kepa Morgan, "How Can Matauranga Maori Contribute to the Rena Disaster Response?" in *Final Report, Nga Pae O Te Maramatanga Research Contract 12RF0* (Auckland: The University of Auckland, 2014) 4.

99 Morgan, "How Can Matauranga Maori Contribute to the Rena Disaster Response?" 4.

In his study exploring whether matauranga Māori, calculated by the Mauri Model Framework, can contribute to environmental restoration, Morgan developed a range of methods to gather qualitative and quantitative data. Multiple hui (meetings) were held with coastline hapū, within a participatory action research framework, as a means of assessing the diverse effects of the ongoing pollution event. This research sought to measure the mauri of the region prior to the disaster, to establish a benchmark for wellbeing.¹⁰⁰ Four key modalities or categories of mauri were defined that regionalise *and* localise mauri and hence determine the sense of place for ethical caring, for mauri-ora. The broadest is that relating to environmental wellbeing (taiao mauri). This encompasses though is dependent on cultural wellbeing (hapū mauri), which, in turn, grows or weakens with social wellbeing (community mauri). Then there is economic wellbeing (whanau mauri), from out of which mauri springs as whanau (family) though is entirely and mutually dependent on the social, cultural and environmental. The Mauri Model has been digitised and disseminated as a website, to enable communities to analyse their

100 Morgan, “How Can Matauranga Maori Contribute to the Rena Disaster Response?” 4.

own local conditions (www.mauri-o-meter). The waters of the area were rich in sea-life, with an unusual combination of tropical and pelagic fish. The mauri of the ecosystem was assessed to have been strong.

Between 360 and 1700 tonnes of heavy fuel oil was spilled during the grounding with wide-ranging impact, affecting marine and avian life as well as water quality, sea-beds and foreshores.¹⁰¹ Further pollutants in the cargo included plastic beads and potentially hazardous chemicals.¹⁰² The mauri of hapū and communities were also negatively affected as wāhi tapu (sacred sites) were coated in oil, thickened with dead sea-life and birdlife. Destruction of the mauri within the sea and coastal regions carries with it a sense of hurt and loss for the mana of the place, for local sites or fields acknowledged as taonga (treasures) and or tūpuna. As ongoing consequences, the volume of pollutants continuing to move through the area has thrown the safety of local kai-moana (food from the sea) into question with a consequent effect on the mauri or sustainability of the local economy as some people, particularly local residents, were forced to move from subsistence harvesting life-styles to a reliance on commercially produced foods. Kepa notes

101 Tumanako Ngawhika Fa’au and Te Kipa Kepa Brian Morgan, “Restoring the Mauri to the Pre-MV Rena State,” *MAI Journal* 3 (1, 2014): 10.

102 Fa’au and Morgan, “Restoring the Mauri to the Pre-MV Rena State,” 10.

that orthodox assessment reporting of environmental events such as this lack a capability for measuring ecologically integrated categories, and especially direct measures that aim to holistically demonstrate the interdependence between family structures, social structures, cultural structures and environmental structures. In this case, it meant failing to recognise the economic hardship of local Māori who depended for sustenance on culturally integrated environmental mauri. Here we see Māori practicing mauri-ora as immanent ethics. This ethics situates ongoing care for the well-being of its living-world in its multi-entity, bio-geo-hydro-atmospheric complexity. How, then, might this immanent ethics as mauri-ora be thought within the complexity of architectural practices imbricating different philosophical purviews on life?

2. TE URU TAUMATUA

Te Uru Taumatua is the meeting place and governance centre for the Tuhoe iwi (Māori kinship/place-based group). Situated at Tāneatua, on the North Island of New Zealand, and adjacent to Te Urewera National Park that Tuhoe oversee in a co-governance model with the New Zealand Government (Te Urewera being our fifth case study), the project aims to recover the mauri of a place that has suffered

grievously under colonial land seizures and cultural restrictions.¹⁰³ Seeking financial redress, the iwi successfully conducted a multi-generational claim process through the Treaty of Waitangi Tribunal that acknowledged Crown/Government failures to abide by the tenets of the Waitangi Treaty.¹⁰⁴ Te Uru Taumatua was funded by the interest accrued from this settlement and enables Tuhoe to reinstate their iwi ethos of connection to the living-world. The complex contains administrative and community-oriented programmes, including an archive, iwi chamber, café, and amphitheatre for large iwi celebrations and events. Tuhoe Chief Treaty Negotiator, Tamati Kruger, commented in 2015: “Te Uru Taumatua stands as a statement about our commitment ki a Papatūānuku [towards Mother Earth], ki a Ranginui [towards Father Sky] ki te putaiao [to the environment/environmental sciences].”¹⁰⁵ Consistent with Tuhoe ethical principles, the Centre “brings to life the idea that we must restore the spaces that we live in.”¹⁰⁶

As a ‘Living Building’ located within Tuhoe ancestral lands, Te Uru Taumatua aligns concerns for the regeneration and wellness of place, integral to tangata whenua (people of the land), and Māori identity. When Māori introduce themselves in semi-formal situations they often utter an injunction to celebrate wellness or life (Tihei Mauri-ora) and reference, initially, their ancestral maunga (mountain), awa (river) or moana (sea), iwi and marae, before introducing themselves. This framing of identity is an abbreviated manifestation of the cosmogonic-genealogical

103 See Judith Binney *Encircled Lands: Te Urewera, 1820-1921*, (Wellington, Bridget Williams, 2009). This is a forensically detailed account of a militarised and legislative colonisation process that systematically dispossessed Tuhoe of resources – land and people – imperilling their very survival.

104 The treaty between numerous iwi (kinship groups) and the British Crown was signed in 1840 and resulted in the declaration of British sovereignty over Aotearoa/New Zealand. The two versions of the Treaty – Māori and English – have significant differences, further complicating the relations established by the document. The Government has now settled multiple claims against it for land appropriations or other damage and the claims process continues.

105 *Ever the Land: A People. A Place. Their Building* (Trailer), <http://evertheland.com/> Accessed May 23, 2016.

106 “Te Kura Whare,” <http://www.ngaituhoe.iwi.nz/te-kura-whare>. Accessed December 19, 2015); <http://www.ngaituhoe.iwi.nz/sustainability-and-the-living-building-challenge> Accessed December 19, 2015.

framework of whakapapa, which describes the “origin of the universe and the primal parents, then continuing to trace the descent of living and nonliving, material and immaterial phenomena, including humans.”¹⁰⁷ Cleve Barlow defines whakapapa as the “genealogy of all living things.”¹⁰⁸ Huhana Smith writes of whakapapa in a customary context as “the essential expression of whanaungatanga between a wider cosmology, people, environmental properties, and lands so all entities are interrelated and interdependent.”¹⁰⁹ Smith defines whanaungatanga as those co-mutual bonds formed within an intricate socio-cultural-ecological system.

Following a mandated year-long assessment, Te Uru Taumatua (Te Kura Whare) achieved the Living Building Challenge certification, one of the first in New Zealand

107 See Mere Roberts, Brad Haami, Richard Benton, Terre Satterfield, Melissa L Finucane, Mark Henare, and Manuka Henare, “Whakapapa as a Māori Mental Construct: Some Implications for the Debate over Genetic Modification of Organisms,” *The Contemporary Pacific* 16 (1, Spring 2004): 1-28, 1.

108 Cleve Barlow, *Tikanga Whakaaro: Key concepts in Maori culture*, (Auckland: Oxford University Press, 1991) 173.

109 Huhana Smith, “Hei Whenua Ora ki Te Hākari: Reinstating the Mauri of Valued Ecosystems: History, Lessons and Experiences from the Hei Whenua Ora ki Te Hākari/Te Hākari Dune Wetland Restoration Project,” in *Ngā Māramatanga-ā-Papa (Iwi Ecosystem Services) Research Monograph Series No. 9*, Palmerston North, NZ: Iwi Ecosystem Services Research Team, Massey University and Landcare Research/ Manaaki Whenua 2012, 16.

to do so. The Living Building Challenge is a rigorous holistic international building performance and certification programme of the Living Future Institute, a non-profit entity organised around issues of social and environmental justice achieved through transformation of the built environment. Tuhoe and the New Zealand architecture firm, Jasmax, collaborated to design a building capable of meeting the Challenge.¹¹⁰ The Challenge assesses buildings in relation to conditions of place, water, energy, health and happiness, materials, equity and beauty.¹¹¹ These performance categories and criteria mandate zero waste and toxicity, net-zero energy and water usage, as well as regeneration of local environments in order to actively maintain and enhance the life-capacity of a site. Kruger emphasised that the Challenge aligns with Iwi “values of independence, sustainability, love and respect for the land.”¹¹²

110 Jasmax is a New Zealand architecture, interior and landscape architecture firm with offices in Auckland, Tauranga, Wellington and Christchurch. Jasmax understood the privilege bestowed in working across a design problem that folds Indigenous-Māori tangata whenua belonging with Euro-American ecological design challenges. As a firm from Aotearoa New Zealand, Jasmax has recourse to a whakapapa progressing a design-ethics that relates globalised architectural eco-design know-how with the lived reality of Indigenous-Māori worlding.

111 “Living Building Challenge”, <http://living-future.org/lbc/about> Accessed December 19, 2015.

112 “Twelve Questions: Tamati Kruger”, http://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=11481547 Accessed December 1, 2015.

Te Uru Taumatua, considered from the viewpoint of design ethics, arrives *before* any question of architectural planning as design collaboration begins, before a design programme takes shape. What has been described above activates tangata whenua principles as fundamental ethos – mauri-ora – attending *toward* other beings' capacities as life force. Tuhoe aim to regenerate, recover, redress and restore recitation or re-instantiation of their connectivity to this living-world. The notion of 're' as agency of *anterior* spatio-temporalising provides a path for thinking ethos as immanence. *Before* us is *with(in)* us. This crucial temporalising of a before becomes the seismic (un)grounding of geontology – geo-onto-politics of life – of deep time that is equally a now-time of recognition of a concatenation of beings defining life living. In this sense, the 're' as 'sendings' of these terms of re-storing (and re-storying, re-counting and historicising – re-petitioning) is not that of a simple 'return' and 'reunion' to a fixed or even knowable past, but rather *always* coming into presence as recounting-reciting-reiterating. The *present* can only be repetition of a future-past, ec-statically temporal, spatially disseminating.

In order to discuss mauri-ora as ethics, time and relational '(dis)order' are immanent attributes. In Indigenous-Māori contexts, whakapapa is immanent genealogy where *gene* and *geos* are in common (ira, the Look! of coming to appearance). Human mastery is submerged, con-sequent to primordial earth and sky, wind, cloud, sea, tree. 'After' these come the human, teina (youth) in this immanent ordering (raupapa). Mauri exists as anterior life-force-field, though 'time' cannot here be thought as a sequential series of 'now' moments, a perpetual presenting of a presence, but ec-statically, encountering of futuring-repetitions. Mauri comes before, as it is always-already before humans, in front of them as that which opens life living as future and life's pastness in gene-geo-genealogy (geotics). Whakapapa, in this sense, is essentially futural *re-petitioning* of Mauri's coming before. This time-space modality of anteriority – how we necessarily need to temporalise what I mean by 'design', conjures up a vast and complex assemblage of life, so deferring human life to non-hierarchical recalibration within its ethical relations. This resonates with the sublimity of eco-ontological turning that I discuss later. Yet the profound difference is with respect to *anterior time-space* as an immanent lived way, where practice-is-thinking-is-design without separation, *always presencing* though never present as such.¹¹³ Mauri-ora is finite *and* originary, and resides in the *before* 'us' manifesting in rituals and ceremonial

113 Again, I am thinking of a Levinasian ethics before being and the temporalizing of 'interruption' that opens diachrony within synchrony. See Levinas, "The Infinity of Time," in *Totality and Infinity*, 281-285.

acts that become its trace. With Te Uru Taumata, mauri-ora regenerates the mauri of the land and its people.

Te Uru Taumatua, as design collaboration between Tuhoe and Jasmx, offers potentials for deeper interrelations and interconnections of mauri-ora. The project asks us to consider how an ethos of care determines design thinking. What might it mean to design with attention to the mauri of a place via deep-time cosmo-ontologically mediated connectivity? Equally, the Living Building Challenge asks: How does one design for zero toxicity? Would it be understood via ecological science that defines toxicity quantitatively within a calculative thinking? Would it be driven by what I call *geontology* of practical immanence attendant to Indigenous-Māori thinking? This exemplar appears to run a course between these 'poles' in a collaboration that invokes Western design precepts and Indigenous-Māori design thinking. If inter-relationships and connectivity are foregrounded, then design strategies must attend to manifold levels. On the one hand, there are the details: How a joint will connect, what material will be used, what 'aesthetics' sought. On the other hand, there are wider geospatial conditions at micro and macro-scales. Connectivity requirements presented opportunities to reconsider design practice. For example, there arose the need for design workshops that brought together Jasmx and Tuhoe. But there were also collective production processes, such as the local fabrication of five thousand earth-bricks by Tuhoe.¹¹⁴

114 Sam Judd, "Tuhoe Rising," *Green Ideas* (June-July, 2014): 31.

There was also ongoing 'process design' vigilance, reminder of the extent to which things – tree roots, ground water, water or air-borne toxins, asphalt roads, microbes, cars, pāpapa (beetles), buildings – coexist within the materiality and immateriality of a geospatial locale, within a matrix of earth or water or air.

When an ethics of wellness prevails, design questions become focused, framed by an attention to health, but also become more extensive as fields of concern expand environmentally. What is a material or component composed of and what is its potential, or capacity or agency? If a standard arsenic-infused timber foundation is deployed, what effect does this have on local soil microbial communities?¹¹⁵ How far may these toxins leach as ground waters seep? Are they mobile, becoming feedstock for locally grown vegetation? May they leach into locally grown bodies, for example, huruwhenua (ferns), tuatara (lizards), tui (birds), potatoes, tomatoes, and humans? Red-List (toxic) chemicals, considered the most potent and dangerous, were eliminated as potential building materials, responding to requirements and criteria of the Living Building Challenge concerning toxicity. This expanded scope of concern to life's vitality renovates design thinking. As mauri-ora design thinking, this renovating is to *immanence as anterior practice*. Energy and nutrient flows, integral to the mauri of life-fields, also become design considerations. Quantifying climate-changing energy, that is expended in materials manufacture and transport, becomes a design component. The project drew on local Forest Stewardship certified timber. Does the intervention account for its own energy metabolism? The complex has, to date, New Zealand's largest solar array at 390 photovoltaic panels.¹¹⁶ How are other building resource flows managed? The structure's rain and storm-water systems connect to a botanical wastewater system. The building is on extensive grounds that contain these dispersal fields, as well as vegetable gardens.¹¹⁷

Tuhoe and the Living Future Institute each have their genealogies for how immanence construes design thinking. Tuhoe genealogy emerges from a cosmogony model of whakapapa of a living-world. The Living Future Institute addresses Western ecological design precepts. Yet, both aim toward regeneration,

115 Te Uru Taumatua utilises salt-treated timber piles. See Bill McKay, "Te Uru Taumata, Te Wharehou o Tuhoe," *Architecture NZ* 4 (2014): 48.

116 "Te Uru Taumatua," <http://www.jasmax.com/work/te-uru-taumatua/>. Accessed December 19, 2015.

117 Bill McKay, "Te Uru Taumata, Te Wharehou o Tuhoe," 47.

or bringing to wellness, of local ecologies, resource streams, and communities, allowing a mutually productive exploration toward the making of life-sustaining architecture. The systemic approach of the Living Building Challenge, with its closed-loop emphases and multi-entity address to the health of resource flows, local fauna and flora, and associated programmes, such as 'Declare',¹¹⁸ enables systems change as non-toxic materials are developed, classified and substituted for more common materials with greater toxic levels.¹¹⁹ A Tuhoë ethos of care creates the primordial un-grounding 'grounds'– geontology – for Te Uru Taumatua, where iwi connection to place is reinstated through the fabric of building: Local timber and whenua-earth.

This combination of a two-fold ethics of Indigenous-Tuhoë and Western eco-design, and a systems-changing event in the Living Building Challenge, manifests the potentials for addressing that crisis in design ethics discussed earlier with respect to Tony Fry's notion of design futures, in terms of Indigenous frameworks that in a real sense encounter the human as an existence not reducible to or essentialised as humanism. In this collaboration, architectural design becomes far more than a site for human dwelling that combines two different cultural-epistemological approaches. Collaboration performs design-thinking-as-practice in its necessity for breaking from dominant Western paradigms. Mauri-ora, as ethical care, refuses centeredness as such, human or non-human. Centeredness and its defining circularity or annularity of returns is the mark of a transcendental signified as ground, principle, or transcendent origin. Perhaps there is no more substantive transcendental signified than the letter inscribed in Western law. And law becomes a significant agent in the governmentality of design. We now look at a case of this.

3. WAI 262 CLAIM

Treaty of Waitangi, the Waitangi Tribunal and Waitangi Claims

This discussion centres on a treaty document, or documents, signed by the British Crown as colonising power and a grouping of Indigenous peoples inhabiting

118 'Declare' is an ingredients-labeling system for building products that aims to enable choice towards non-toxic building materials. See <https://living-future.org/declare>.

119 Clare Chapman, "Navigating the Green Labyrinth," *Progressive Building 108* (2014).

Aotearoa New Zealand. The Crown and Māori had radically different languages, disclosive of differing ontologies or ways of being-in-the-world. The treaty focuses a multi-generational journey of blatant reversals, failures, misreadings and, more recently, agreements and transformations in the recognition of different ontological suppositions. New Zealand's Treaty of Waitangi, signed in 1840, is a highly significant political governance document covering the British Crown (or its agent in the form of the New Zealand government) and particular Māori iwi. The Treaty exists in two forms, in an English language version in which Māori agree to cede sovereignty to the Crown; and a Māori language version, in which Māori agreed to a gift exchange – in the spirit of hau-ora, the wellbeing of life created through exchange – where the Crown received kawanatanga (governance, that is the status of a Governor) while Māori were granted tino rangatiratanga (sovereign self-governance commensurate with their worlding and the status of Kings and Chiefs) in respect to their people, lands, dwellings and taonga (valuable items).¹²⁰

Dissonance around tino rangatiratanga is central to my ongoing focus on the manifestation and governance of difference, and to the vicissitudes and understanding of the temporality or 'time' of the Treaty itself – conflicts with

120 See Anne Salmond, "Brief of Evidence of Distinguished Professor Anne Salmond," *Waitangi Tribunal Northland District Inquiry (Wai-1040)*, (Document A22, 2010) 19-22.

Western 'clock-time' and Māori whakapapa, with its temporalizing of a 'before' to come as pastness. How is the Treaty a 'design' document for a 'peoples' in common, a 'commonwealth' when those peoples do not exist temporally as the 'same'? How does 'time' enter design? This discussion poses such a question, at the level of what it means to 'design' a nation. While there is agreement that different terms were used within English and Māori versions of the Treaty, there is disagreement over the meaning of these differences and how they relate to foreign concepts of ownership and hegemonic state powers that open to questions of ontology, how the being of entities that are come to disclosure. The Waitangi Tribunal's first report into Northland Treaty Claims found that the Māori signatories to the Treaty did not cede sovereign authority for their people and the lands they occupied.¹²¹ Established as part of the Treaty of Waitangi Act in 1975, the Waitangi Tribunal is an ongoing commission of inquiry that provides expert direction on legal claims presented by Māori in respect to instances in which Crown actions breach the Treaty agreement. The Ministry of Justice's Office of Treaty Settlements is responsible for negotiating and settling claims that come through the Tribunal process.

The legal scholar, Claudia Orange, notes that the British Crown made many treaties with Indigenous peoples. Most of these are no longer extant, having been forgotten or displaced as governance agents. In stark contrast, New Zealand's Treaty of Waitangi remains central to the constitutional frameworks of governance in New Zealand.¹²² Orange suggests that ongoing Māori protest and resistance kept the Treaty document alive during the latter nineteenth century as the new colonial society was establishing itself. Shortly after the signing of the Treaty, colonial politicians dismissed its validity as a basis for claim to New Zealand, with William Fox suggesting that the Crown's claim to sovereignty over New Zealand actually rested on "the grounds of Cook's discovery just as surely as did British claims in Australia."¹²³ Yet for Māori, the contract represented a covenant and affirmation of iwi rights to tino rangatiratanga. As Orange notes, through the Treaty diverse iwi came together as a Māori political block seeking a governance partnership in the face of myriad New Zealand government actions in breach of the Treaty. One can

121 See "Report on Stage 1 of the Te Paparahi o Te Raki Inquiry: Signatories Dis Not Cede Sovereignty in February 1840–Tribunal.": <https://www.waitangitribunal.govt.nz/news/report-on-stage-1-of-the-te-paparahi-o-te-raki-inquiry-released-2/> Accessed 28 May 2018.

122 Claudia Orange, *The Treaty of Waitangi* (Wellington: Bridget Williams E-books, 2015), vii.

123 Orange, *The Treaty of Waitangi*, ix.

argue that it is really only in this century – almost 200 years after signing, after nearly 200 years of protest, appeal, and resistance by Māori – that recognition of Indigenous sovereignty has moved closer to legislative framing. The Waitangi Tribunal has been a central mediator of this change process.

WAI 262

The Waitangi Tribunal 'Intellectual Property and Flora and Fauna' Wai 262 claim, brought by six iwi spanning from the top to the bottom of the country, sought recognition of rights to customary Māori knowledge systems and their governance.¹²⁴ The claim is hugely extensive in its span addressing intellectual rights, language, arts, biological diversity, genetics, and conservation approaches. The 2011 Waitangi Tribunal report, *Ko Aotearoa Tēnei*, on the WAI 262 claim is the first Tribunal report that looks beyond historical grievances and instead

124 The six iwi were: Ngāti Kuri, Ngāti Wai, Ngāti Porou, Ngāti Kahungunu, Ngāti Koata and Te Rarawa.

addresses a “future focused” relationship between Māori and the Crown.¹²⁵ The report describes a partnership in the spirit of the Māori language version of the Treaty with its emphasis on *kawanatanga* (governance) and *tino rangatiratanga* (authority), where the Crown governs while Māori retain their authority to live in a manner commensurate with their *tikanga*. As critical analysis, the report highlights those current governance structures that impede Treaty principles and suggests a trajectory towards a partnership model that enables recognition of fundamental differences, not simply in cultures and customs, but in the disclosive potentials for different ontologies, different ways whereby entities that are manifest as disclosable:

[...] we recommend a suite of legislative, structural, and policy reforms, designed to bring about responsible power-sharing. We think that our recommended changes should result in a new approach to conservation management, incorporating *mātauranga Māori* into decision making and reconciling any differences between *kaitiakitanga* and the Western preservationist approach. Conservation outcomes will be enhanced while protecting and supporting *mātauranga Māori*. This would be a win-win-win result for the Crown, *iwi*, and the environment.¹²⁶

The Tribunal's report asserts the significant benefits for Crown and Māori inherent in enabling Indigenous ways of being within a modern framework. In a published response to the Wai 262 Tribunal Report, the conservation group, Forest and Bird, affirms the advantage of co-governance models that recognise Māori approaches along with Western frames, and supports the approach of the claim and report:

125 “Ko Aotearoa Tenei: A Report into Claims Concerning New Zealand Law and Policy Affecting Maori Culture and Identity,” *Te Taumata Tuarua*, 2, *Waitangi Tribunal Report* (2011): https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68356606/KoAotearoaTeneiTT2Vol2W.pdf

126 “Ko Aotearoa Tenei,” 706-7.

The report is strongly proactive, indeed focuses on the past only to explicate a future – it is a document rooted in problem-solving. . . . What such a report asks of all of us is responsive consideration rather than defensive reflexivity.¹²⁷

4. TE AWATUPUNA

Following the longest-lasting litigation in New Zealand's legal history, some 140 years of petitioning by Whanganui iwi for their ancestral river, in 2017 Te Awa Tupua became the first river to be granted the same legal status as a human

127 Royal Forest and Bird Protection Society, "An Analysis for the Royal Forest and Bird Protection Society of the 2011 publication: *Kō Aotearoa Tenei, a report into claims concerning New Zealand Law and Policy affecting Maori culture and identity*, September 2012: <http://www.forestand-bird.org.nz/files/file/Ko%20Aotearoa%20Tenei%20Wai%20262.pdf>

being.¹²⁸ With the Te Awa Tupua (Whanganui River Claims Settlement) Bill the river joins those socio-economic entities – companies, trusts, societies – currently accorded legal personhood along with Te Urewera, Tuhoë iwi ancestral lands.¹²⁹ In a newspaper article, lead iwi negotiator, Gerrard Albert, commented on the difference in Māori and British approaches of the last 100 years and the multi-generational struggle to find strategic spaces of overlap or congruence:

We have fought to find an approximation in law so that all others can understand that from our perspective treating the river as a living entity is the correct way to approach it, as in indivisible whole, instead of the traditional model for the last 100 years of treating it from a perspective of ownership and management...¹³⁰

Albert gives an abbreviated account of the world-reality of Whanganui iwi, and Māori as a differentiated collective, where all existents are living, where rivers are celebrated as kin and acknowledged as living beings:

We can trace our genealogy to the origins of the universe. ... And therefore rather than us being masters of the natural world, we are part of it. We want to live like that as our starting point. And that is not

128 There are now widespread international calls for legal rights for nature with more examples arising over the time of this thesis. For example: “While it’s believed the Whanganui River may be the first river in the world to be bestowed with legal personhood, it is no longer the only one. Merely five days after the Te Awa Tupua (Whanganui River Claims Settlement) Bill passed in the House, India’s Uttarakhand High Court granted the same legal personhood to the river Ganges.” See “Innovative Bill Protects Whanganui River with Legal Personhood,” *New Zealand Parliament – Paremata Aotearoa*, March 28, 2017: <https://www.parliament.nz/en/get-involved/features/innovative-bill-protects-whanganui-river-with-legal-personhood/>

129 Catherine J. Iorns Magallanes, “Nature as an Ancestor: Two Examples of Legal Personality for Nature in New Zealand,” *Vertigo: La Revue Electronique en Sciences de l’environnement* 22 (September, 2015):<https://journals.openedition.org/vertigo/16199>

130 Eleanor Ainge Roy, “New Zealand River Granted Same Legal Rights as Human Being,” *The Guardian International Edition*, March 16, 2017: <https://www.theguardian.com/world/2017/mar/16/new-zealand-river-granted-same-legal-rights-as-human-being>. Roy is citing Gerrard Albert.

anti-development, or anti-economic use of the river but to begin with the view that it is a living being, and then consider its future from that central belief.¹³¹

Such a statement might once have been considered radical in Western contexts, but in this time of ontological over-turnings it resonates with current questioning in Euro-American *materialist* thought. New Zealand law now affirms *geos* or *hydro* as Life: “Te Awa Tupua comprises the Whanganui River as an indivisible and living whole, from the mountains to the sea, incorporating its tributaries and all its physical and metaphysical elements.”¹³² In recognition of its legal personhood, the ownership of the river bed was placed in the name of the river itself, affirmed in the Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.¹³³ As legal scholar, Catherine Magallanes notes, while the legal definition of ‘ownership’ does not coincide with Māori understanding of an existent, it does achieve the desired protection. Yet there is no award of legal title to the water, which constitutes itself as ‘river’.¹³⁴ Magallanes suggests that, while the limitations of the extant legal structures are exposed here, the overall governance system, including the

131 Roy, “New Zealand River Granted Same Legal Rights as Human Being.”

132 Magallanes, “Nature as an Ancestor,” (paragraph 18).

133 The Te Awa Tupua (Whanganui River Claims Settlement) Act 2017: <http://www.legislation.govt.nz/act/public/2017/0007/latest/DLM6830851.html?src=qs>

134 Magallanes, “Nature as an Ancestor,” (paragraphs 21-23).

Te Pou Tupuna, an office charged with protecting the river, remains attuned to an understanding of ora, where the river is whole, indivisible, alive. In a further sign of legislative attunement to Māori sovereignty, the English language of the Te Awa Tupua statute contains Te Reo Māori, a tacit recognition of the inherent losses and difficulties of translation that have attended the Treaty project.¹³⁵

5. TE UREWERA

Similar to the legal complexities, questions of design, and questions of Māori sovereignty found with Te Awa Tupua, is the case of Te Urewera, the ancestral lands of the Tuhoe. They have been the site of another multi-generational engagement in the politics of sovereign difference. Unlike many New Zealand iwi, Tuhoe chose to maintain its own autonomy rather than sign the 1840 Treaty of Waitangi. The

135 Magallanes, “Nature as an Ancestor,” (paragraphs 27-29).

New Zealand government confiscated much of the territory to which Tuhoe had ancestral ties through whakapapa and, in 1954, created Te Urewera National Park. The national park was subject to a geontopower governance mandate, presented in the form of a Conservation model where a naive understanding of the differences between nature and culture required complete separation or careful restriction of human activities from 'pristine nature'. The paradigm difference is expressed in the *Tribunal Report*:

Often translated as 'kinship', whanaungatanga does not refer only to family ties between living people, but rather to a much broader web of relationships between people (living and dead), land, water, flora and fauna, and the spiritual world of atua (gods) – all bound together through whakapapa. In this system of thought, a person's mauri or inner life force is intimately linked to the mauri of all others (human and non-human) to whom he or she is related. This explains why iwi refer to mountains, rivers, and lakes in the same way as they refer to other humans, and why elders feel comfortable speaking directly to them.¹³⁶

136 “Ko Aotearoa Tenei: A Report into Claims Concerning New Zealand Law and Policy Affecting Maori Culture and Identity,” *Tē Taumata Tuarua, 1, Waitangi Tribunal Report* (2011) 237: https://forms.justice.govt.nz/search/Documents/WT/wt_DOC_68356416/KoAotearoaTeneiTT2Vol1W.pdf

Recall Povinelli's assertion that effective responses against Anthropocenic geontopower will require a displacement of existents from the division of Life and Nonlife and a separation from "late liberal forms of governance."¹³⁷ These examples of Wai 262, Te Awa Tupua, Te Urewera, and, indeed, of the ongoing governmental process of the Waitangi Tribunal, register difference in current and future governmental structures that cannot be solely accounted for at an empirical level of recognition of cultural, social or language differences of what is basically the same human substance. Rather, there is more at stake here in a move from anthropology to ontology, to recognise that ontological disclosures of whakapapa and mauri-ora are not commensurable with Western notions of human history or humanist ethics. These legal processes have occurred as a highly contested multi-generational encounter. The agency of Indigenous-Māori collective processes and collective-identity is thus revealed. Change at this scale only occurs through collective struggle. The legal structures available are incommensurate with the becoming-earth of Indigenous-Māori ontology. Such incommensurability does not mean impossibility or impasse. Rather, it alerts us to what I will discuss in the following chapter, in the work of Chantal Mouffe as the only democracy worth striving for: A democracy of agonistics, of undecidables and incommensurables.

This chapter has engaged both Western and Māori understandings of design thinking and design ethics. Initially, in Chapter Five, I broach this discussion of Western and Māori understandings of ethics and design as an eco-ontological turn, coincident with the necessity to think Anthropocenic crisis as design crisis. This becomes a thinking through re-turning to the Anthropocene in ways that open strategic re-thinking of its agencies, thinking the Anthropos of the Anthropocene no longer within the humanist ground of subject-substance, but through a decolonising metaphysics of whakapapa as relational eco-ontology. That eco-ontology becomes the means whereby we 'interrogate' the urban for its design-led crises and for possible futures in rethinking the subject-substantive ground of Anthropos. From there, I discuss an epi-centric milieu of toxicity: *the urban* as Anthropocentric generator. Its focus is on petro-carbons and on tactics for rethinking the urban, in particular *an ontology of walking* that is not reducible to simple bipedal movements.

137 Povinelli, *Geontologies: A Requiem to Late Liberalism*, 15.

Chapter 5

Living Urbanism

1. ECO-ONTOLOGICAL TURNS

U-turns

The previous chapter presented Indigenous-Māori ethics in architectural and legislative contexts that alert us to an expanded understanding of design as immanent cause. These different cases of design-thinking are not discrete. They have an anterior relationality such that we come to recognise their forking differences. This anteriority is recognisably a situated relationality of Aotearoa New Zealand. These case studies offer tactical examples of resistance and disruptions in normalising Anthropocenic governance structures – they exemplify material counterpractices and they work across adjacent differences as they engage with and change governance structures (building 'codes', legislation, legal frameworks for personhood).

I want to re-turn to those Euro-American geo-logics discussed in the first three chapters of the thesis as a basis for discussing ecological design thinking (such as the Living Building Challenge) in more detail. It has become common in humanities and philosophical discourses to refer to recent ecological and

ontological 'turns' in Western critical discourse.¹ This turn can be understood as a re-turn or a foregrounding of a counter-field of Western philosophy's traditions of immanence thinking that stretch back to early Greek philosophy, evident in Heraclitean dynamism, Lucretian turbulence physics, extending to Spinozan anti-essentialism, the dynamic philosophy of Leibniz, the process philosophies of Bergson, Simondon and Whitehead, and Deleuze's philosophy of difference.² This current 'turn' is a tuning-in to interest in non-human and material entities, and rejection of binaries such as those of nature and culture or mind and body as founding constructs for modern philosophy's dualist-grounded thinking. Immanence of life-activity and more-than-human agency register in multiple theoretical variants that include vital materialism;³ materialism, new materialism

1 See John Tinnell, "Tranversalising the Ecological Turn: Four Components of Felix Guattari's Ecosophical Perspective," *Fibreculture Journal*, 18 (2011). We need to recognise how emphases on geo-logics and emphases on eco-logics are not in themselves contradictory when the geo- and eco- are brought together. They are resonant. Eco- derives from the Greek, *oikos*, meaning household or home, that wherein we dwell, from which we develop both 'eco-nomics' (*nomos* or law of the household) and eco-logy (*logos* or what gathers as the household). This 'gathering', essential relationality is, for Greek inceptual thinking, *physis*, 'nature' as what comes forth from out of itself. This bringing forth of *physis*, is primordial *geos*.

2 Referencing Bergson, Deleuze and his text *Bergsonism*, Elizabeth Grosz describes a "counter-history of philosophy that would also have to include Deleuze's readings of Hume, Kant, Spinoza, Nietzsche, Lucretius, Leibniz, and the Pre-Socratics ... something in Bergson's work veers off from the accepted traditions of philosophy to create something new and unexpected. What Bergson offers is a philosophy of movement. Instead of asking how to dynamize a static Idea or put into motion that which is arrested, a question that has occupied philosophy since the time of Plato, Bergson is above all a thinker of dynamic movement, action, change." See Elizabeth Grosz, *Time Travels: Feminism, Nature, Power*, (Durham, NC: Duke University Press, 2005) 94. Ilya Prigogine and Isabelle Stengers write of the relationship of Lucretian thought to turbulence, fluid dynamics and self-organising systems. See Ilya Prigogine and Isabelle Stengers, *Order Out of Chaos: Man's New Dialogue with Nature*, (Boulder, CO: New Science Library, 1984) 141.

3 See Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham, NC & London: Duke University Press, 2010).

and material feminisms;⁴ agential realism;⁵ speculative realism and object-oriented ontologies;⁶ assemblage theory;⁷ process-relational science theory;⁸ post-humanist theory and critical animal studies;⁹ and critical ecological thinking.¹⁰ Without doubt this is a diversified assemblage. Certainly, there are as many

4 Stacy Alaimo and Susan Hekman, *Material Feminisms* (Indianapolis: Indiana University Press, 2008); Rosi Braidotti, *The Posthuman* (Cambridge, UK: Polity Press, 2013); Diana Coole and Samantha Frost, *New Materialisms: Ontology, Agency, and Politics* (Durham, NC & London: Duke University Press, 2010); Deleuze and Guattari, *A Thousand Plateaus*; Claire Colebrook, *Death of the PostHuman: Essays on Extinction, Vol. 1* (Ann Arbor: University of Michigan/Open Humanities Press, 2014); Elizabeth Grosz, *Time Travels: Feminism, Nature, Power*; Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC & London: Duke University Press, 2016); Rick Dolphijn and Iris van de Tuin (eds), *New Materialism: Interviews and Cartographies* (Ann Arbor: University of Michigan/Open Humanities Press, 2012); Joanna Zylińska, *Minimal Ethics for the Anthropocene*.

5 Karen Barad, “Interview with Karen Barad” in *New Materialism: Interviews and Cartographies*, ed. R. Dolphijn and I. van de Tuin. (Ann Arbor: University of Michigan/Open Humanities Press) 48-70;

6 Levi Bryant, Nick Srnicek and Graham Harman, *The Speculative Turn: Continental Materialism and Realism* (Melbourne: re.press, 2011); Quentin Meillassoux, *After Finitude*, trans. Ray Brassier. (London and New York: Continuum, 2008); Timothy Morton, *Being Ecological* (London: Penguin, 2018).

7 Manuel DeLanda, *Assemblage Theory* (Edinburgh: Edinburgh University Press, 2016); John Protevi, *Life, War, Earth: Deleuze and the Sciences* (Minneapolis, University of Minnesota Press, 2013).

8 Bruno Latour, *An Inquiry into Modes of Existence: An Anthropology of the Moderns*, trans. C. Porter. (Cambridge, MA: Harvard University Press, 2013); Michel Serres, *The Natural Contract*, trans. E. MacArthur and W. Paulson. (Ann Arbor: University of Michigan/Open Humanities Press, 1995); Isabelle Stengers, *Cosmopolitics* (Minneapolis, University of Minnesota Press, 2010).

9 Donna Haraway, Patrick MacCormack, *The Animal Catalyst: Towards Ahuman Theory* (London: Bloomsbury, 2014).

10 Levi Bryant, Félix Guattari, *The Three Ecologies*, trans. I. Pindar and P. Sutton. (London: The Athlone Press, 2000); Eileen Joy, *Prismatic Ecology: Ecotheory Beyond Green* (Minneapolis, University of Minnesota Press, 2013); Timothy Morton, Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism*.

non-convergences as there are convergences, for example, on the difficult issue of phenomenology's correlationism that so much concerns speculative realism, and that includes a newly-won respect for Descartes by Quentin Meillassoux after so much vilification for the seventeenth-century Rationalist daring to 'split' mind and body. However, it is the case that works by researchers such as these demand that what we humans are doing in the name of a self-same humanism is radically questioned if not essentially dismantled. *Anthropos*, as such, becomes a common 'target' even if the philosophising 'tools' (one thinks of Nietzsche with a hammer) become a pretty full kit.

Here Western eco- and geo-logical turnings actually turn towards Indigenous metaphysic in entirely decolonising ways, if dialogue happens. Cultural shifts of the 1960s and 1970s developed generalized 'counter-culture' thinking, including refracted, often second-hand accounts of Indigenous thinking concerning, for example, *Gaia* or 'Earth Mothers' along with animism and animal ancestors. Yet Indigenous thinkers critique the ongoing failure to acknowledge ancient Indigenous knowing within the West's recent ontological 'turns'. Indigenous academic, Zoe Todd, describes her 'personal paradigm shift' when listening to Bruno Latour speaking about *Gaia* and the climate as "common cosmopolitical concern:"

I waited through the whole talk to hear the Great Latour credit Indigenous thinkers for their milenia of engagement with sentient environments, with cosmologies that enmesh people into complex relationships between themselves and *all* relations, and with climates and atmospheres as important points of organization and action. I waited ... It never came ... I was left wondering, when *will* I hear someone reference Indigenous thinkers in a direct, contemporary and meaningful way in European lecture halls? ... citing and quoting Indigenous thinkers in their own right.¹¹

Todd's critique of current New Materialist and Realist scholarship has been influential, with 30,000 'internet views' at March 2016. Her work has been the subject of workshops, re-orienting the directions of a book engaging de-colonial and materialist thought in dialogue. This thesis, too, aims in small-scale localised ways to develop dialogue through a decolonising-ontological turn, crossing over

11 Zoe Todd, "An Indigenous Feminist's Take on the Ontological Turn," *Journal of Historical Sociology* 29, (1, March 2016): 6-7. DOI: 10.1111/johs.12124

Maori whakaaro-papa and Western Materialism, design's instrumentality and strategic building frameworks. Impetus for dialogue or talking-across comes from my Western-Indigenous emphases as non-philosopher-designer of counter-practices for the Anthropocene. Built environment change happens instrumentally within highly systematised frameworks of Building Acts, Codes, Compliance Schedules and related regulations and legislations. Developing counter-practices necessarily requires working across diverse territories to find tactical adjacencies.

Levi Bryant suggests: "To think relations and interactions between entities ... Ecologies are everywhere and evade the divide between nature and culture, and thus, culture and society are no longer thought of as something distinct from nature, but as one formation of nature among others."¹² This ecological *enmeshing* has ontological status, as Bryant notes:

Ecology is not the name of a regional ontology, of a discipline that investigates nature or the environment ... ecology isn't a thesis about nature but rather a thesis about *being*... The ontological thesis of ecology is pan-ontological. Pan-ecology is the thesis that being is ecological through and through. Ecology is not defined by a domain of study because everything is ecological, but rather is defined by a style of thinking: a thinking that approaches beings in terms of being-with, investigating them as separable while nonetheless inhabiting assemblages in which they interact with one another, affect one another, depend on one another in a variety of ways ... To think ecologically is to think in terms of systems and interactions rather than in terms of isolated and separated beings.

The being-with described by Bryant, the being-with of beings able to be investigated separately, suggests an ontological disclosure of the radical *anteriority* of the being of beings themselves, such that they are essentially being-with inasmuch as singularity, separation or individuation *is* modification of being-with. In this, anteriority of a 'before' is the ontological disclosure of the temporalising of beings in the structuration of their being as being-with, prior to any question of how separate entities assemble. In this Bryant's ontology of anterior being-with disavows ecology as a concept of *only* healthful life, privileging relationality as dominant. Ecologies are, equally, pathologies, exemplified in cancer clusters, or interactions of 'non-living' energies and gases. We may consider, for example, the

¹² Levi Bryant and Eileen A. Joy, "Preface: Object/Ecology," *O-Zone: A Journal of Object-Oriented Studies*, 1 (2014): xi.

eco-logical to be the enmeshing of what we earlier discussed as the differentials of a bio-logics and geo-logics. This enmeshing is more than a summing of biology and geology. Its enmeshing equally construes what we encounter as the 'cultural' lifeworld of existents.¹³

Ecological Design

How does eco-ontological thinking relate or align to ecological design approaches? Here design becomes a process of designing-with as multiple different beings, horizons and systems are considered relationally. Designing-with, in this context, requires explicit attention to well-ness or vitality that takes on particular urgency in the context of the Anthropocene, this era of a radically scaled and distributed seeding of toxins: Micro-plastics, nuclear fall-out, carcinogenic synthetic chemicals, an excess of global warming gases.¹⁴ In the *Journal of Cleaner Production*, Chrisna Du Plessis and Peter Brandon describe a current shift from a mechanistic to an ecological/living systems worldview more capable of addressing the radical complexities of the sustainability project. Sustainability, as discussed here, follows a simple and direct definition offered by regenerative-design specialist, Bill Reed: "The purpose of sustainability is sustaining life-enhancing conditions."¹⁵ Du Plessis and Brandon suggest that the shift required in adopting such a sustainability principle needs to follow a knowledge-development model associated with the work of Thomas Kuhn, in which long periods of 'normative science' are interspersed with moments of abrupt change where a paradigm is

13 Timothy Morton has developed a concept of the mesh in thinking ecology as essentially relational: "the interconnectedness of all living and non-living things." See Timothy Morton, *The Ecological Thought*, (Cambridge, MA: Harvard University Press, 2013) 28.

14 Anthropogenic nano-scaled plastic toxins may now have breached a primordial threshold, the cell wall, and are affecting fish behavior as the chemical signaling environment becomes polluted by exogenous plastic. See Tamara S. Galloway, "Micro- and Nano-plastics and Human Health," in *Marine Anthropogenic Litter*, ed. M. Bergmann et al. (Heidelberg: Springer Open, 2015) 343-366.

15 Bill Reed, "Shifting from 'Sustainability' to Regeneration," *Building Research and Information* 35 (6, 2007): 674-680.

broken and another established.¹⁶ This alternate 'paradigm' is, they suggest, not only new but also of deep-time:

[Emerging] from an amalgamation of ancient worldviews and a new scientific paradigm based on the findings from both classical and new sciences. ... In fact, it would appear that until the development of ecology and quantum physics, earlier paradigms, such as found in Eastern philosophy and indigenous knowledge systems, have been more accurate in their understanding of how living systems and existence at its most foundational level function.¹⁷

For Du Plessis and Brandon, an ecological approach is firstly relational and immanent – in the sense of being inherent to the world – wherein humans are an "integral part of nature and partners in the processes of co-creation and co-evolution ... [part of a] socio-ecological system."¹⁸ This phenomenal world as they describe it is:

[...] constantly regenerated through interactions within systems at all scales and levels of existence. ... These interactions result in and from flows of matter, energy, information and influence, as well as processes of adaptation and self-organisation, which in turn allow these systems to evolve. In this world, phenomena do not exist independently, but come into being through different types of relationships and the processes they provoke [...] the world is dynamic, ever-changing, and therefore impermanent. Even seemingly permanent phenomena are undergoing constant fluctuations and change at both a micro and macro scale of existence.¹⁹

Regenerative design specialists, Bill Reed and Pamela Mang, describe a net-positive concept that inclines towards "human habitation' being a 'source of

16 Chrisna Du Plessis and Peter Brandon, "An Ecological World-view as Basis for a Regenerative Sustainability Paradigm for the Built Environment," *Journal of Cleaner Production*, 109 (2015): 53. See Thomas Kuhn, *The Structure of Scientific Revolutions*, (Chicago, Ill.: The University of Chicago Press, 1970).

17 Du Plessis and Brandon, 54.

18 Du Plessis and Brandon, 55.

19 Du Plessis and Brandon, 56.

life.”²⁰ This approach acknowledges the interconnections of life and the dynamic reciprocities, interactions and flows within these inter-relations. Mang and Reed describe this imbricated connectivity as ecological thinking. They argue how, within this emergent and highly complex ecological system, the *value* of a specific actor with a distinct role is due not to how it functions but, more elusively, to the discrete “pattern of relationships that enable particular exchanges of value.”²¹ This is demonstrated, for example, by the ecological re-balancing that happened with the 1995 reintroduction of wolves to Yellowstone National Park in the United States. Within a short period of time there was a remarkable and non-linear unfolding of life, a restoration of the Mauri, as trees quintupled in height, bird, fish and animal numbers multiplied, and the river’s geography and modality adjusted to sustain more life.²²

A life-oriented, ecologically-thought, net-positive architecture would begin, Mang and Reed suggest, with questions such as:

What ecological services have been disengaged in this place and what roles are missing that enabled those services in the past? ... What is the role of this particular project and the land it occupies in the larger systems of its place? How does its role enable other entities to play their roles? What are the patterns of relationships that need to be established or re-established between the building, its occupants and its community to enable their positive roles reciprocally? And then, what specific ‘positives’ can this project offer and/or catalyse?²³

Thinking ecologically enables new questions and new horizons. They suggest:

... [how the] almost infinite interrelationships of ‘ecological systems’ are the way living entities, including humans, relate to, interact with and depend upon each other in a particular landscape in order to pursue and sustain healthy lives. ... In this biocentric perspective, value is defined in terms of benefits to life. Adding value to an ecological

20 Pamela Mang and Bill Reed, “The Nature of Positive,” *Building Research and Information*, 43 (1, 2015): 7.

21 Mang and Reed, 9

22 Mang and Reed, 9. As of 2014 there were 104 wolves in the park, in eleven packs.

23 Mang and Reed, 9.

system means increasing its systemic capacity to generate, sustain and evolve increasingly higher orders of vitality and viability for the life of a particular place.²⁴

We recognise with Mang and Reed a declared emphasis on *both* well-ness and with-ness. Designing-with, that is, designing-now-thought, becomes a forwarding (anterior 'beforing') of vitality and relationality in complex and emergent ecological systems. Environmental scientist, Garth Harmsworth, suggests there is inherent 'bridging' between contemporary science understandings of ecosystems and matauranga Māori: "[For] Māori the modern use of the terms ecosystem and ecosystem services can be explained through traditional knowledge and the interwoven concepts of whakapapa, mana and kaitiakitanga, and possession of the spiritual qualities of tapu, mauri, and wairua."²⁵ This geo(bio)ontology links diverse entities within a relational web. Such a concept accords well with a definition of ecosystems as being composed of "a dynamic complex of plant, animal and microorganism communities and the non-living environment interacting as a functional unit."²⁶ Harmsworth places emphasis on the Māori notion of Te Ao Marama, the world of light, derived from whakapapa and encompassing "the range of life forms that exist, connected through whakapapa – plants, animals, birds, fish, microorganisms, the genes they contain, and the ecosystems they form."²⁷

In what follows, this chapter engages questions of Anthropocenic urbanity as transformation and movement, essentially engaging a geo-critical thinking of design. The urban needs to be thought in radical disaggregation, or as Anthropos-Assemblage, being that which names the crisis of the Anthropocene as a crisis of humanist design. All is motion – people, cars, birds, beetles, carbon and plastic molecules – as dynamic geo-biological life-field in flux, a 'new earth' essentially understood as primordial movements of deterritorialisation: Unformed matter and non-finalised functions, non-stratified. Hence, we live as the city, not in the city.

24 Mang and Reed, 8.

25 Garth R. Harmsworth & Shaun Awatere, "Indigenous Māori Knowledge and Perspectives of Ecosystems," *Ecosystem Services in New Zealand: Conditions and Trends*, ed. J.R. Dymond (Lincoln: Manaaki Whenua Press, 2013) 276.

26 Neville Ash et al, ed., *Ecosystems and Human Wellbeing: A Manual for Assessment Practitioners* (Washington DC: Island Press, 2010) xi.

27 Harmsworth and Awatere, 276.

An ethics for urban wellbeing attends to this life-field, recognising and designing for the various trajectories of materials, temporary bodies, and energies. Plastic is not inert. It does not stay still, but moves, breaks down, accumulates as toxins in bodies, then exchanges, endlessly exchanges. Design's ecological turn is for an ethical politics of *passing through*, knowing that highly active carbon is passing through the atmosphere subsequent to burning in an internal combustion engine. This research asks what might be an urban spatiality for wellbeing, recognising that space forms as a complex temporalizing of socio-political-economic-topological interfacing. With mauri-materialist analyses, emphasising the urban as site of connection and mobility or agency, the *walker*, as being-with, becoming-earth, becomes pivotal to my method.

2. URBAN ETHICS AND TRAFFIC JAMS

Introduction

The urban is qualitative intensity of living, a geospatial locale where humans and nonhumans exist as a particular clustering and density. For the most part, the urban tends to be considered as quantitative extensity: What can be measured and catalogued as contained within a certain jurisdiction. Thinking back to the beginning discussion in Chapter One on the refrain and on Bergson's notion of movement, I want to keep in tune with a Bergsonian-Deleuzian engagement with the urban, where bodies that are become immanent causes for effects considered as temporal flows, as multiple virtualities. Such a refrain resonates well with the material of Chapter Three, whakapapa instantiated as an ongoing temporalizing of being-becoming-earth, and mauri-life-as-field. With respect to Chapter Four and this chapter, mauri-ora as immanent design ethics opens thinking to decolonising counter-practicing. In addition is the work of Félix Guattari on transversality and

the molecular.²⁸ Molecular revolutions constitute political practise that attends to molecular massing, dis-aggregation and flows. Thus, the urban is sublime complexity – a composition of heterogeneous and inter-scalar flows, of socio-economic and geo-political forces, forming geo-territorial interventions, meshing of multiple ecologies – technical, socio-cultural, environmental, for example – supporting or disabling humans and others. How, then, do I approach urban vitality in all its diversities? In what follows, I address two books that, in various ways, offer transversal analyses of urban conditions. I use *transversal* in this context in reference to a condition that has effects across a wide range of urban materiality, processes or practices. These analyses offer a method or framework by which to apprehend how particular urban forces, flows or forms become-actual. Initially, I discuss a recent publication that discusses the urban via ethical and political engagements. In the second instance, *Traffic Jams: Analysing Everyday Life through the Immanent Materialism of Deleuze and Guattari*, I attend to a material politics of citizenship.²⁹

Edited by Mohsen Mostafavi, *Ethics of the Urban: The City and The Spaces of the Political* contributes significantly to spatial discourses concerning urban ethics and politics.³⁰ For Mostafavi, ethics is understood as essentially humanist, emphasising individual and community structures, intrinsically linked to the political through the spatiality of the urban. The book is structured into five geo-spatial sections: "Cities and Citizenship," "Monuments and Memorials," "Neighbourhoods and

28 Transversality arises from Guattari's psychoanalyst practice. The concept is first presented in Guattari's *Molecular Revolutions*. Molecular revolutions for Guattari are political practices rather than 'theory' concerning practice. Transversality is concerned with a 'new' composition as collective or group. The term opposes vertical top-down hierarchies or horizontal compartmentalised hierarchies or silos. See Félix Guattari, "Transversality," In *Psychoanalysis and Transversality: Texts and Interviews 1955-1971*, trans. A. Hodges. (Los Angeles: Semiotext(e)/ Foreign Agents, 2015) 102-121. See also Félix Guattari, "Transversality," In *Molecular Revolution: Psychiatry and Politics*, trans. R. Sheed. (Middlesex: Penguin, 1984) 17.

29 David R. Cole, *Traffic Jams: Analysing Everyday Life through the Immanent Materialism of Deleuze and Guattari*, (New York: Punctum Books, 2013).

30 Mohsen Mostafavi (ed.), *Ethics and the Urban: The City and the Spaces of the Political*, (Cambridge, MA: Harvard GSD /Lars Müller Publications, 2017).

Neighborliness," "Public Space and Public Sphere," and "Borders and Boundaries." Urban space becomes a stage, or the manifestation of a politics of resistance or dissent. Influenced by the political theory of Chantal Mouffe, Mostafavi argues for a concept of *agonistic* urbanism within a democratic framework. Agonistic urbanism is proposed to enable and, in fact, actively structure dissent, aiming to proffer real difference in the social-political fabric of the urban. Mouffe's contribution, "Radical Politics as Counter-Hegemonic Intervention: The Role of Cultural Practices," frames the political via two basic concepts, "antagonism" and 'hegemony.'³¹ The political is understood as a project that always already has potential for antagonisms, rather than that which aims at removing or eliminating differences constituting antagonisms. This, in turn, reveals the inherent instability or contingency that attends to the political. Social order is, Mouffe suggests, inherently *hegemonic* as the establishment of authority or control is sought: "[We should envisage] every society as the product of a series of practices attempting to establish order in a context of contingency."³² These "hegemonic practices" infer that each political order thus formed is always conditional, a "temporary and precarious articulation of contingent practices."³³ The hegemonic, rather than defining a stabilising ground or consensual block, is always subject to perturbation: "Every hegemonic order is susceptible to being challenged by 'counter-hegemonic' practices – that is, practices that attempt to disarticulate the existing order to install another form of hegemony."³⁴

Agonistic Difference as Democratic Public Space

Mouffe's focus, in this chapter and more broadly, is on challenging neo-liberal hegemony. She holds that the success of counter-hegemonic practices rests on an understanding that democratic politics always holds the potential of antagonism, the construction of 'enemies', and requires agonistic institutions and practices, that is to say, structures capable of framing debate or conflict as that of adversaries within a shared political association: "... a real confrontation, but one that is

31 Chantal Mouffe, "Radical Politics as Counter-Hegemonic Intervention: The Role of Cultural Practices," in Mostafavi, *Ethics and the Urban*, 210-229.

32 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 212.

33 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 212.

34 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 212.

played out under conditions regulated by a set of democratic procedures accepted by adversaries."³⁵ This concept of agonistic struggle affirms an understanding of social order forming not from *external* logics but always as a result of hegemonic practices that are situationally immanent: "Society is always politically instituted, and the terrain in which hegemonic interventions take place is always the outcome of previous hegemonic practices; it is never neutral."³⁶

Capitalism relies, Mouffe notes, on design and creative practices to produce new kinds of goods and new kinds of subjectivities for a desiring public: "To maintain its hegemony, the current capitalist system needs to constantly mobilize people's desires and shape their identity."³⁷ Creative practices thus have certain agencies, platforms from which to either reinforce current social order or to operate counter-wise. Urban public spaces, as a focusing and expression of cultural and artistic practices, as ways of living, become important sites for processes of agonistic potentials. Mouffe's key point here is that public spaces should be thought, not as sites of *consensus* but rather as spaces that reject an ethos of reconciliation. Thus, Mouffe rejects the concept of consensus in the public sphere, famously presented by Jurgen Habermas and Hannah Arendt, rejecting the essential humanist rationality grounding the aim for "intersubjective agreement" or dominant consensus, affirming instead a range of differenced identities or positions as agonistic urbanism:

By bringing to the fore what the dominant consensus tends to obscure and obliterate, by making visible what neoliberal hegemony represses, critical cultural and artistic practices can play an important role in the creation of a multiplicity of sites where the dominant hegemony would be questioned.³⁸

Essential to this reading of the urban by Mouffe is how creative counter-hegemonic practices can *create* new subjectivities that enable processes of de-identification

35 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 226.

36 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 226.

37 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 226-227.

38 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 228.

around current hegemonic orders and re-identification around newly-formed constructs. Urban spaces become, for Mouffe, critical sites within which hegemonic practices are defined and counter-hegemonic practices *detritorialise* (to borrow a term that is not Mouffe's) within democracy's ongoing agonistic struggles.

Delta Design

How, though, are Mouffe's counter-hegemonic tactics put into action? Keller Easterling has some approaches. In her chapter from Mostafavi's book, "Matrix Space," Easterling addresses ethics through two registers, those of the *declarative* and of the *enacted*.³⁹ She describes declarative ethics as ethical pronouncement formed around master narratives, often including explicit utopic understandings of good and bad, right and wrong. Easterling suggests such declarative approaches can founder in the face of actors with contingent, fluid or undeclared goals or heterogeneous complexities. In contrast, she defines an enacted ethics as that which works within the agonistic or antagonistic complexities of what is, offering modes of engaging and differentiating for that most heterogeneous of conditions, the urban:

[E]nacted ethics – ethics in an active register – is asking for the very degradation that declarative ethics denies itself. It is asking to be plunged into conflicting evidence. Activists, urbanists, or anyone in a discipline who is trying to operate within a master narrative is often asking for more actors, a more complex context – the abundance of messy evidence that provides more information for problem solving. ... Perhaps most important to this contemplation, the messier, more robust context that these thinkers desire is often the urban context itself.⁴⁰

Easterling argues that much of the constituent parts of urbanism, structures and infrastructures, agents of all kinds, along with the heterogeneity of their understandings or meanings, may all be understood as *infrastructures* given the extent to which they are not unique individuated outputs but rather formulaic and repeatable:

In contemporary global urbanism ... we no longer build cities by

39 Keller Easterling, "Matrix Space," in Mohsen Mostafavi (ed.), *Ethics and the Urban: The City and the Spaces of the Political*, (Cambridge, MA: Harvard GSD /Lars Müller Publications, 2017), 230-257.

40 Easterling, "Matrix Space," 234.

accumulating masterpiece buildings. Buildings are not necessarily singular crafted. ... They are often reproducible products or nearly identical buildings. ... As repeatable phenomena engineered around logistics and the bottom line, these formulas or spatial products constitute an infrastructural technology with elaborate routines and schedules for organizing consumption.⁴¹

She proposes that these spatial infrastructures are always already information systems that code for certain actions or engagements and, as such, have agency:

Few would look at a concrete highway or an electrical grid and perceive agency in its static arrangement. Agency might be assigned to only the moving cars, the electrical current, or the inhabitants. We are less accustomed to the idea that physical objects in spatial arrangements, however static, possess agency that resides in relationships and relative position. We are also less accustomed to the idea that space, rather than code or text, can be a carrier of information.⁴²

Easterling suggests a range of strategies for 'hacking' the urban as spatial information and operation systems in order to unsettle or differentiate current political conditions. She describes, for example, the use of a multiplier to shift change in a system, with a representative case being the potential to propagate change in a suburban field through radicalising a mass-produced suburban house model. She describes this process as designing a *delta*, 'D', change to a field's *inclination*, rather than the field itself: Tactical connivances within a strategic field of operations. Would that 'D' coincide with Deleuze and Guattari's 'D' for deterritorialising? Easterling's *enacted* ethics operates via a subtle nuancing, a shifting of inclination – Lucretius's *clinamen* – a change of disposition and, as such, offers a potentially productive *stealthy* modulation for operating in an urban condition often captured by particular interest groups:

While in declarative ethics adherence to principles is cornerstone, for enacted ethics of matrix space, the markers are different. For instance, discrepancy rather than righteousness is instrumental. The discrepancy between content and activity, declaration and disposition – between what an organization is saying and what it is doing – is now important. ... If the world's most powerful players operate with proxies and disguises,

41 Easterling, "Matrix Space," 235.

42 Easterling, "Matrix Space," 235.

perhaps righteous activism could use a secret player. While binary opposition is sometimes warranted, and sometimes it is important to stand up and give a name to a cause, an auxiliary activist might more slyly shift ... disposition[s].⁴³

Easterling's emphasis on enacted ethics, responsive to on-the-ground conditions, rather than a declarative propositional ethics, and a *delta* design process for change helps to give further nuanced reflection on some of what follows in this chapter. Mouffe's analysis of social order as conditional, as "temporary and precarious articulation of contingent practices," and her enquiry into urban counter-hegemonic practices, that are themselves always necessarily in motion, also locates key foci for this research.⁴⁴ Yet, Mostafavi's *Urban Ethics* deals largely with an understanding of ethics as *human* politics, a humanism even if radically extended. Address to non-human agents or politics is limited, what in this research I have emphasised as Indigenous-Māori thinking. The extra-human is seemingly addressed by Easterling alone in her presentation of the agency of the urban as site of embedded (human-generated) information. As well, there is no reference to the Anthropocenic landscape of contemporary urbanism and the ways that everyday lives of cities create and, in turn, are threatened by Anthropocenic limits. Hence the discussion needs extending a little further, not by discounting the ethico-political emphases given by Mouffe and Easterling to agonism and stealth, but by moving these into the design-crises conditions of the Anthropocene. This can be done, in part, via a recent arrival in Deleuzian thinking, David Cole's, *Traffic Jams* which, like the two previous references, articulates a case and method for counter-practice, but does so within a materialist analytical framework.⁴⁵ A concern for urbanism registers in this text's emphasis on urban tactics of resistance carried out within a field coded by dominant 'strategies'. Though, there is no mention of Indigeneity. Hence the partiality of engagement.

Immanent Materialism of the Everyday

"We are Petro-citizens." Thus begins Cole's book, *Traffic Jams*, which addresses everyday life via a materialist thinking stemming from the work of Deleuze and

43 Easterling, "Matrix Space," 240, 257.

44 Mouffe, "Radical Politics as Counter-Hegemonic Intervention," 212.

45 Cole, *Traffic Jam*.

Guattari.⁴⁶ Cole's petro-citizen acts in a summative register to index various oil-soaked strands of everyday life: "Populations have been turned into packs of consumers through the economic and governmental processes of the last twenty-five years (Kelly 1999), and everything that we consume depends in some way on petrol."⁴⁷ The book aims at articulating an understanding of how everyday life can be a "reflexive, affective politics" as critical practice. Informed by Michel de Certeau's *The Practice of Everyday Life*, Cole develops two conceptual 'artefacts' – the petro-citizen and the urban traffic jam – as totemic characters that coalesce and critique fluvial foundations of contemporary life. De Certeau's emphasis on *walking* as key critical method for understanding the everyday and as practice of the everyday life of a city, resonates with Cole's foregrounding of the pathologies of car-cultures. Another reference point for Cole is Jean Luc Godard's 1967 film, *Weekend*.⁴⁸

Cole focuses on the philosophical writings of Deleuze and Guattari, with particular emphasis on *A Thousand Plateaus*. Through their articulation of immanence as 'that which is within', existing in relation to transcendence as that which is without or outside, Cole explores the formation of a *plane of immanence* with respect to the everyday life of petro-culture. The plane of immanence is that condition that denies separation or an outside in favour of a field of inter-relations, also

46 Cole, *Traffic Jams*, 5. In fact, this is not quite the first sentence. The book's "Introduction" begins with: "What is everyday life? The singularity within this question, and by degree, this paper, is formed by the conjunction of often simultaneous, subjective, narrative structures that allow one to explain everyday life in terms of events and occurrences in sequence, and also the particular, objective historical context that one finds oneself embroiled within; this aspect of everyday life is foregrounded by and through political economics." 1-2. Cole goes on to emphasise that his reference point for critical engagement with the everyday is the work of Michel de Certeau. We too will encounter de Certeau in what follows.

47 Cole, *Traffic Jams*, 5. Cole's reference to (Kelly, 1999) refers to Kelvin Kelly's *New Rules for the New Economy: 10 Radical Strategies for a Connected World* (New York: Viking, 1999).

48 Cole notes concerning Godard's *Weekend*: "This cinematographic moment allows one to gain insight into the penetrating reality of traffic jams. This film raises consciousness of the ways in which multiple aspects of traffic jams sit inside of us, and determine emotional and rational responses to phenomena long after one has driven clear of the hold up." See Cole, *Traffic Jams*, 7-8.

named a plane of consistency or composition. The plane of immanence is a way of countering predominant ways by which subjects, structures, or essential forms are thought as transcendence. We discussed this briefly back at the opening to Chapter One. Deleuze and Guattari favour shifting relations:

Here there are no longer any forms or developments of forms; nor are there subjects or the formation of subjects. There is no structure, any more than there is genesis. There are only relations of movement and rest, speed and slowness between unformed elements, or at least between elements that are relatively unformed, molecules and particles of all kinds. There are only haecceities, affects, subjectless individuations that constitute collective assemblages.⁴⁹

Deleuze and Guattari, in their final collaborative work, *What is Philosophy?* note that the plane of immanence is the very site of metaphysics: "... the absolute ground of philosophy, its earth or deterritorialization, the foundation on which it creates its concepts."⁵⁰ As *ground* upon or within which philosophy becomes, the plane of immanence is prior to philosophy and concept, characterised by Deleuze and Guattari as a 'space' of aleatory or responsive operations without recourse to the rational: "The plane of immanence is pre-philosophical and does not immediately take effect with concepts, it implies a sort of groping experimentation and its layout resorts to measures that are not very respectable, rational or reasonable."⁵¹ Cole characterises their thought as immanent materialism, described as metaphysics in which matter and concept have reciprocity and matter is understood as agential, self-differing, and immanent as a field of continuously emergent co-relationality. Working with this materialist thought, Cole is able to analyse key socio-political drivers or intensities of the everyday:

One isn't interested in everything to do with everyday life, but in the intersections and dynamics of everyday life that emerge in the gaps between the packages of thought and the flows of material objects that one can follow. ... The precise material model of everyday life that one derives according to immanent materialism must say something about agency and politics.⁵²

49 Deleuze and Guattari, *A Thousand, Plateaus*, 266.

50 Deleuze and Guattari, *What is Philosophy?* 41.

51 Deleuze and Guattari, *What is Philosophy?* 41.

52 Cole, *Traffic Jams*, 12.

Analysis revolves around the traffic jam as 'vehicle' for analysis of the everyday through the construction of a traffic jam *plane of immanence* which links transversally between unconscious and affective responses, temporal-spatial processes, political and economic forces and material flows. One might equally say here between Chronos and Aion, between bodies and their mixtures, and a logic of sense, between what is actual and what are virtualities. Cole begins with an exploration of how a traffic jam involves or raises an unconscious spectre of car crashes with an attendant 'affect' of fear. Working from one of Andy Warhol's "Disaster Series" paintings, *Pink Car Crash* (1963), Cole describes how the composition of suburban family, white picket fence and overturned car in the familiar and familial everyday space of the suburb, sensitises a death-drive that is inherent in the unconscious:

The death drive wells up in the mind through car crashes, and this

drive is a crucial aspect in the construction of what we might call the traffic unconscious (see Deleuze 1997). The point here is not that immanent materialism consists only of focusing on death ... but that the immanence of car crashes, as *Pink Car* demonstrates, communicates an overwhelming and absolute reality.⁵³

Applying such an immanent materialist reading to the traffic jam reveals a heterogeneous field of related things and concepts. Viewing images of car crashes reveals formal distortions, tears, disjunctures, while attendant affects include fear and dislocation. As assemblage, the car crash is revealed as an active site, imbricated with what Cole describes as "agency that moves between notions of speed, progress, and death."⁵⁴ In Warhol's *Green Burning Car*, Cole describes how this image exemplifies the Deleuzian lapsed time-image, in which an image captures both time and movement in a way that expresses interrelated material trajectories or processes. With respect to *Green Burning Car*, or Dena Schukit's *Zagged* (2010), lapsed time-images become valuable for comprehending the material reality of traffic jams and car crashes and how these inflect on, incline or 'swerve' everyday life. Cole then turns to how the everyday life of petro-politics includes the fetishisation of the car, what he names "libidinal carism," considered through the vehicle of J.G. Ballard's *Crash* (1973). Cole analyses this "carism" as manifested transversally across the social structures of petro-culture, presented in car advertising's sexualised imagery, whose social referents – wealth, power, desirability – adhere as one drives between work, neighbourhood, leisure space. In so doing, driving constructs the everyday of oil-culture.

In "The Plateau of the Petro-Citizen," Cole outlines how an immanent materialist analysis follows material flows. Oil and petroleum are everywhere. They are immanent to the everyday of the traffic jam, flowing through and structuring global liberal economies, as feedstock for multiple items for consumer use, as primary energy source. As such: "Oil is an ineluctable mirage and brake on any form of lasting political innovation."⁵⁵ The petro-citizen as materialist critique

53 Cole, *Traffic Jams*, 16. The Warhol images from the early 1960s resonate strongly with Godard's own version of the car crash, from 1967.

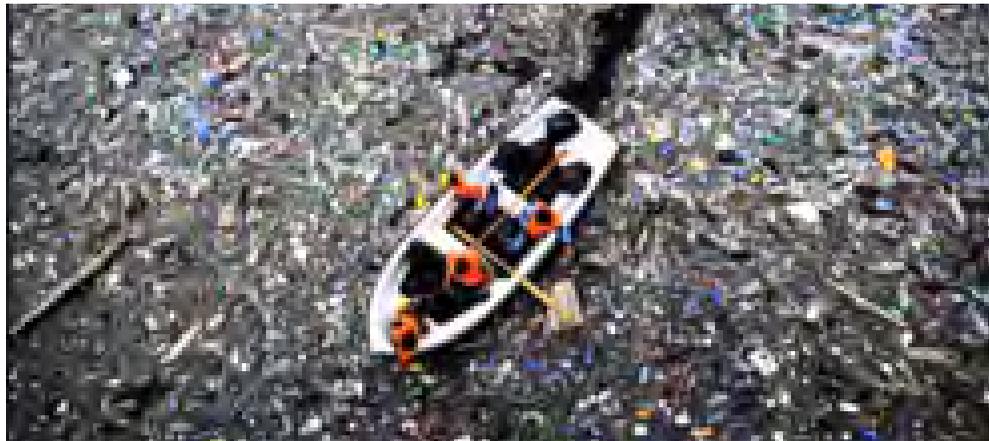
54 Cole, *Traffic Jams*, 17.

55 Cole, *Traffic Jams*, 27. Cole is citing Alberto Toscano "Petropolitica as Retro-politics: Oil and the Geopolitical Imagination," http://gold.ac.uk/media/Toscano_petropolitica_retropolitica.pdf. 2010, 2.

reveals the extent to which our everyday subjectivity is complicit with oil-culture: “The machinery of capitalism and oil within which we now live, encourages domestication, trauma and subjugation to capital flows that are connected to oil production.”⁵⁶ Inorganic oil and the organic citizen co-construct or assemble each other within the everyday of the petro-citizen and petro-politics. As petro-culture is now global, so is the everyday experience of traffic jams. Other materialisations of oil continue to flow into the ecosystem, with ecologically devastating consequences. Cole describes the North Pacific Gyre as part of an immanent-materialist analysis of material agency, an oceanic car crash:

The Gyre concentrates an estimated 100 million tons of visible and invisible plastic waste ... When the plastics do break down, the vast majority simply disassembles into ever finer microscopic fragments and, eventually, inassimilable molecular polymers. As such, the suspended, increasingly microscopic, waste builds up and is ingested by sea-life. ... In recent studies, the microscopic suspension is measured to outweigh zooplankton by six times in relative mass.⁵⁷

Cole notes that while this immanent materialist analysis doesn’t arrest these petro-political material flows or agencies, it does allow an analysis of how the urban everyday translates into globalised destruction. A similar materialist reading of the by-product of petroleum’s combustion, Carbon Dioxide, renders an example of an atmospheric car-crash of global proportion.



⁵⁶ Cole, *Traffic Jams*, 28.

⁵⁷ Cole, *Traffic Jams*, 37. Cole references the work of Peter G. Ryan and his colleagues, in particular their 2009 paper for the Royal Society: “Monitoring the abundance of plastic debris in the marine environment.” DOI: 10.1098/rstb.2008.0207

Traffic Jam's epilogue is an ode to a character played by Michael Douglas in the film, *Falling Down* (1993). As a critical device, the traffic jam reveals how much we collectively submit to an externally imposed disabling of agency within the everyday of oil-urbanism, and how this submission distorts and distresses. In the film, Douglas's character, William Foster, employs an emotionally-explosive and performative counter-hegemonic tactic as he abandons his car in a traffic jam and, a little later in the film, fires a rocket-launcher at a freeway construction site. His radical traversing of the everyday life of the city frames a key question for Cole: How do we get out of our cars, abandon our current everyday as petro-citizens, and tactically practice the everyday anew?⁵⁸ Immanent materialist analysis does not provide a solution to the manifold failures of petro-culture, nor does Cole suggest we emulate Foster but he notes that his "breaking point" can be articulated through philosophy and art in a way that enables comprehension of its foundations and drivers. Cole ends the text with an affirmation of how art, creativity, and philosophy can together decode and activate the pathological affects of petro-life and offer exit routes – practical rationalities – out of this dead-end street. These pragmatic – or fanciful – exits-routes-as-creative-practice are one of the *tūāpapa*-grounds of this study. So are we there yet? As I discuss in Chapter Six, potential exit routes out of the Anthropocene are long, with many wrong-turns, dead-ends, multiple circlings, and bad visibility. No we are not there yet. But we are, slowly, on the move.

Vital Analyses of the Anthropocenic Everyday

We recognise genuine counter-practice understanding with Cole's materialist analyses, how this work opens fundamental orientations to urban eco-ontological turning. Yet, as we emphasised with Mouffe and Easterling, Cole's is a counter-hegemonic encountering with Western productionist metaphysics, though an encounter that does not address Indigenous decolonising. Is this important? Is Cole missing something? Does it make a difference? My thesis is established on the efficacy of re-vitalising Western understandings of vitalist materialism in a listening to Indigenous-Māori decolonising metaphysics. What happens when

58 Cole's anti-hero in William Foster's car-abandoning cross-town walker might not end up being our genuine petro-citizen exemplar. Foster ends up shooting some Hispanic gang members, killing an army surplus disposal store owner, causing a senior citizen to have a fatal heart attack, and shoots a police woman who arrived at his former home to protect his ex-wife and child from harassment. Foster ends up dead, shot on the Venice Beach pier, falling down into the marine swell below. The petro-citizen anti-hero is a minor moment in what is quite a splendid film.

different though resonant cultural world-realities critique or erode transcendent-substantialist thought? How does transversal recognition of mauri or life-vitality materialise this decolonising difference in the urban as radically localised condition? Whakapapa is not simply another way to 'say' history or genealogy or identity. Mauri is not another way to say, along with Nietzsche or Deleuze, 'force'. Mauri-ora is not just *another* translation of an ethics of well-being. Yet, my aim is to convey something at once passionate and affective as to how mis-translations, approximations, trying-to-say something across paradigmatic differences itself instills, immanently, from within, a plane of consistency whose agonistics are at once contingent, entirely contingent, yet entirely necessary. In my focus on mauri-ora – wellbeing not of the human or the sentient but of the life-field – working between ontological enquiry and creative practices, my aim is akin to ethico-political *acupuncture* as energy-affect of material flows of the Anthropocenic everyday.

There are many other exemplars as reference-points, creative design practices that engage the holism of Anthropocenic disaster within Western design frameworks, for which I would want to offer approximate agonistic translations to Indigenous-Māori understandings. One clear exemplar is the New York based landscape design firm, Scape, whose multiple design projects, governmental, community and ecological processual approaches are well documented.⁵⁹ Briefly, two such projects, exemplary of Scape's diversity of approach, are *Oyster-tecture* and *Safari 7 Reading Room*. On *Oyster-tecture*, they note:

Oyster-tecture envisions an active oyster reef that diversifies aqueous marine life and recreational potential in the New York Harbor. The project was commissioned by the Museum of Modern Art in 2009 for the Rising Currents exhibition, an initiative to develop adaptation strategies for New York City in the face of climate change and sea level rise. Oyster-tecture proposes a living reef composed of a woven web of 'fuzzy rope' that supports marine growth, generates a 3D landscape mosaic that attenuates waves and cleans millions of gallons of harbor water by harnessing the biotic filtration processes of oysters, mussels, and eelgrass. Cleaner, slower water enables neighborhood fabrics to create new channels inland from the Gowanus Canal. A watery regional park emerges that prefigures the city's return to the waterfront as a sustainable strategy for the next century. Oyster-tecture aims to improve habitat and water quality, restore biodiversity to tidal

59 See the Scape website: <https://www.scapestudio.com/projects/>.

marshes and encourage new relationships between New Yorkers and their harbor. <https://www.scapestudio.com/projects/oyster-tecture/>

This project has developed as basic research for a host of other related marine rehabilitation projects for which Scape has been commissioned. Recognising the extent to which Anthropocenic crisis is design-led, firms such as Scape engage a counter-hegemonic understanding of its immanent causes as design vectors, or deterritorialising movements, in order to *incline* the territory-as-itinerant-assemblage to what I call *mauri-ora*, or ethics of a new earth. I especially want to emphasise the notion of prefiguring mentioned by Scapa, a watery park that prefigures a city's return. We need to read this *prefiguring* not as design's preemptive enframing control of what is to arrive, but rather as an *ethics before being* that we discussed back in Chapter Four on design ethics. This is an ontological disclosure of a radical before we previously associated with the minimal ethics discussed by Zylinska and in reference to Levinas. A second project, demonstrating Scape's diversity of approach is *Safari 7 Reading Room*. Scape characterise this project in terms of community-based education:

The Safari-7 Reading Room is a rotating exhibition that brings the Safari 7 project from the subway to the gallery. Safari 7 is a self-guided podcast tour of urban wildlife along New York City's 7 subway line. The project engages the broadest range of New Yorkers, from commuters and school children to urban explorers and designers,

in active research and exploration of their own environment. The Reading Room exhibition, displayed at the GSAPP Studio X gallery and Grand Central Station, featured an interactive listening model and map of the region, a series of immersive cross-sectional drawings that describe urban ecological life in New York City, and a collection of reading and research materials for visiting school groups. Conceived through Urban Landscape Lab, the project is a joint work between Kate Orff, Janette Kim, and Glen Cummings of MTWTF. <https://www.scapestudio.com/projects/safari-7-reading-room/>

As will be discussed in Chapter Six that outlines a series of design projects I have undertaken during candidature, a genuine focus for my design praxis is education. Design needs to open questions of knowing to educative realms such that transformations in our everyday happen. My design is pedagogy in two senses. On the one hand, I am an educator, working in a design school and so design becomes an immersive immanent learning field. But on the other hand, design necessarily needs to become inclination to disclosure of political-economic forces, and to forces for wellbeing, mauri-ora. The *Safari 7 Reading Room* project likewise aims for design to become pedagogy, transversal spatialising of various scenes of learning encounter.

As discussed in Chapter Two, "Life Lines," the Anthropocenic everyday inherently registers multiple disablings of wellbeing as buildings intensify toxic substances,

as petroleum combusts creating Carbon Dioxide warming the atmosphere, as oil-based plastics pollute or petro-cars create conditions for extensive, low-density urbanism that reduce the connectivity of people living within it. In these contexts, vitality of the life-field becomes another vehicle that, like the traffic jam, reveals the terrain of the everyday. The traffic jam in Cole's analysis manifests its relationality to petro-politics and the disabling effects and material flows of petro-culture. Oil-culture, as harm-culture's diversified operations, registers as degradation of mauri, reduction in the vitality of the life-field. Thrown into this eco-ontological turning, I introduce a counter-part to the petro-citizen, a counter-hegemonic *persona* on the plane of immanence of Anthropocenic crisis. The new persona is an agon, a dissensus, an 'ambulance case' for the traffic accidents of design crises. Though my emphasis is on the ambulating of ambulance, on the ramble or amble or scramble of a deterritorialising movement, a new earth I inherit as walking. The 'walker' becomes a key to what keeps the Anthropocene locked as design crisis. I want to think walking from out of a decolonising geo(onto)logical turning, not so much as something that bi- and quadra-pedal beings do on occasion, something more (and less) than taking a stroll, though as Deleuze and Guattari have it, taking a stroll might be just what capitalism's schizo culture needs. This walker resonates with de Certeau's performative analysis of an everyday through walking. Yet, this is an understanding of 'walking' inclusive of the slow diffusion of molecules across gradients, the flows of oil through wetlands, the agential current of electricity, the flights of indigenous birds. Informed by vital immanent-materialist analysis, this 'walker' is, like the petro-citizen, a complex assemblage-subjectivity that includes inorganic molecules, other animal entities, energy flows, politico-economic gradients, and the human.

Walking in the Anthropocenic Everyday

In developing the historical-conceptual ground for this vital-immanent-materialist analysis, I begin with a discussion of Baudelaire's *flâneur* and then to various engagements with Baudelaire found in the writings of Walter Benjamin. This legacy, from Baudelaire to Benjamin, of the urban, the crowd and the arcade, the *Passagen* of commodity culture, infused French cultural theory through the twentieth century, culminating in one respect with de Certeau's encounters with the everyday, and the Situationists' notion of the *derive* or drift as a radical and counter-hegemonic mode of urban existence, open and receptive to local urban conditions. Anthropocenic and materialist analyses then become working with this *persona* as the urban itself becomes a character and condition that is always on the move. Vitality of the urban in the Anthropocene rests on our understanding of the degrees to which life exists as collective or assemblage, as an extensive immanent plane of consistency that includes the atmospheric, the microbial,

the hydrospheric, the lithospheric, the human and other-animal entities in a vertiginously complex emergent and mobile field of relations. Walking becomes personae, heterogeneous being-with as anterior before-which. Adopting an ambulatory-analysis of the everyday traces the contingent and diverse paths taken by various oil-agents, in this case one might say ambulance-chasing as immanent cause to understanding the accidental-as-fatality. Then, by following trajectories of renewable electrical energy, non-toxic material agents and an ethics for mauri-ora, orientations towards counter-practices of the urban, as vital-materialist everydays, come to appearance.

3. WALKING AND URBAN MODERNITY

A schizo's stroll

Deleuze and Guattari open their collaborative *Anti-Oedipus* with an account of desiring-production that cannot really be separated from taking a stroll nor separated from a moment of dissolution of any sense of a human and nature divide. Everything is machine-couplings. Everything is schizo-capitalism: Flows and interruptions, couplings and connections:

A schizophrenic out for a walk is a better model than a neurotic lying on the analyst's couch. A breath of fresh air, a relationship with the outside world. Lenz's stroll, for example, as reconstructed by Büchner. The walk outdoors is different from the moment when Lenz finds himself closeted with his pastor, who forces him to situate himself socially, in relationship to the God of established religion, in relationship to his father, to his mother. While taking a stroll outdoors, on the other hand, he is in the mountains, amid falling snowflakes, with other gods or with nature. . . . 'He thought that it must be a feeling of endless bliss to be in contact with the profound life of every form, to have a soul for rocks, metals, water, and plants, to take into himself, as in a dream, every element of nature, like flowers that breathe with the waxing and waning of the moon'. Lenz had projected himself back to a time before the man-nature dichotomy, before all the co-ordinates based on this fundamental dichotomy have been laid down.⁶⁰

60 Deleuze and Guattari, *Anti-Oedipus*, 2.

We make a *turn*, at this very moment in this text, to Lenz's outdoors, as if until now we have been too confined to the analyst's couch, to the analyst's interior, to mummy and daddy and to God. My thesis now takes a stroll, aiming to do something *more* than explain a decolonising metaphysics of Anthropocenic design, but to become that decolonising whakaaro. I want the stroll to be my method and to begin to think that dream-work of Lenz coincidentally as the strolling fragmentary dream working of Walter Benjamin's ur-history, his mythic history, his *Passagen*, his Arcades work, but also his whakapapa, his mauri.⁶¹ It is here that the fragmentary takes over the method of 'writing': allegory as the ruin of a totalising history, 'literary montage' as the emblematic imaginary of Anthropocenic urban disaster: Whakapapa of colonising urbanism. It is to Benjamin's Baudelaire we stroll, to his Paris, allegory of modernity's ur-history, allegory of Anthropocenic emergence. Design becomes the *Idea of the plan*, always already in ruins.⁶² We begin, though, with Baudelaire's '*fleur*', his flower conceived as ruin, *mal*, his *flâneur*, his stroll, his spleen, his solitude amidst the rush of the crowd. We begin, then, with Poe. For Poe's 'man of the crowd', like Lenz, has dissolved all the hierarchies and divisions. He, too, takes a schizo stroll, or, at least, this is how Baudelaire sees things:

61 Walter Benjamin, *The Arcades Project*. Trans. H. Eiland & K. McLaughlin. (Cambridge, MA: Harvard University Press, 2002). Benjamin's writing style for the Arcades Project was termed by Benjamin's friend, Theodore Adorno, as 'literary montage'. The one-thousand-page book is mostly composed of quotations, one after another, juxtaposed without commentary or citation details. Benjamin did not even distinguish between his sparse commentary and the quotes. This juxtaposing he termed a lightning flash of recognition, while any question of meaning was the thunder that rolls in afterwards.

62 Benjamin developed the style of literary montage in his earlier *The Origin of German Tragic Drama*, his failed Habilitation thesis and now considered one of the most important works of twentieth-century literary theory. In this work, on Baroque drama in eighteenth-century Germany, Benjamin develops his understanding of allegory, of the ruin and of the image. That book concludes with the following, apposite for our ambulatory crisis-surveyor, concerning the German *Trauerspiel* (Tragic Drama): "In the ruins of great buildings the idea of the plan speaks more impressively than in lesser buildings, however well preserved they are; and for this reason the German *Trauerspiel* merits interpretation. In the spirit of allegory it is conceived from the outset as a ruin, a fragment. Others may shine resplendently as on the first day; this form preserves the image of beauty to the very last." See *The Origin of German Tragic Drama*, trans. J. Osborne. (London: Verso, 1998) 235.

Do you remember a picture (for indeed it is a picture!) written by the most powerful pen of this age and entitled *The Man of the Crowd*? Sitting in a café, and looking through the shop window, a convalescent is enjoying the sight of the passing crowd, and identifying himself in thought with all the thoughts that are moving around him. He has only recently come back from the shades of death and breathes in with delight all the spores and odours of life; as he has been on the point of forgetting everything, he remembers and passionately wants to remember everything. In the end he rushes out into the crowd in search of a man unknown to him whose face, which he had caught sight of, had in a flash fascinated him. Curiosity had become a compelling, irresistible passion.⁶³

Baudelaire's essay is not at all focused on E.A. Poe, the "most powerful pen of this age," but rather with the newspaper illustrator, Constantin Guy (M.C.G.), as the most important living artist. Guy embodies what Baudelaire recognised most in modernity: Transiency or a motile passing through, little concerned with the cementing of name or authority, though concerned nonetheless with recording what is fleeting, impermanent, always already ruinous for its lack of permanent ground. Benjamin discovers in this celebration of motility by Baudelaire, the pre-history to modernity in allegory. His first great work, the *Trauerspiel*, is dedicated to its exposition. His *Arcades Project* makes allegory its method. Allegory is fragmentary, illustrative and emblematic. Benjamin sees the nineteenth century enjoyment in image and caption, image and text-fragment as the subsuming of allegory over the symbol. Benjamin's Parisian arcades are allegorical torsos or mosaics of modernity. His *Arcades Project* is a thousand-page literary montage, fragmentary quotation-text, infinitely plagiaristic, a schizo-stroll as Ur-history of European modernity. There is an entry there, in "Convolut M: The *Flâneur*." Uncannily, we encounter Papatūānuku there on our stroll. Though we should not have been so surprised!

63 Charles Baudelaire, *Charles Baudelaire: The Painter of Modern Life*, trans. P.E. Charvet. (London: Penguin, 2010) 8. Baudelaire's reference for the man in the crowd is Edgar Allan Poe's essay. "Man of the Crowd" (1840). The story opens with an epigraph in French from La Bruyère: "*Ce grand malheur, de ne pouvoir être seul*" — "That great evil, to be unable to be alone," See "Man of the Crowd" https://blogs.commons.georgetown.edu/citylit/files/2015/07/poe_man_of_the_crowd.pdf

The street conducts the flâneur into a vanished time. For him, every street is precipitous. It leads downward—if not into the mythical Mother, then into a past that can be all the more spellbinding because it is not his own, not private. Nevertheless, it always remains the time of a childhood. But why that of the life he has lived? In the asphalt over which he passes, his steps awaken a surprising resonance. The gaslight that streams down on the paving stones throws an equivocal light on this double ground.⁶⁴

That amnesiac intoxication in which the flâneur goes about the city not only feeds on the sensory data taking shape before his eyes but often processes itself of abstract knowledge—indeed, of dead facts—as something experienced and lived through. This felt knowledge travels from one person to another, especially by word of mouth. ...⁶⁵

Benjamin's early draft for the *Arcades Project* was itself a multiply-drafted exposé: "Paris: The Capital of the Nineteenth Century," drafted in 1935 and then again in 1939.⁶⁶ In both versions, Baudelaire has a central role, and allegory is Baudelaire's method:

The gaze which the allegorical genius turns on the city betrays, instead, a profound alienation. [Baudelaire is not a Romantic poet of the *soil* but of the ruin] It is the gaze of the flâneur, whose way of life conceals behind a beneficent mirage the anxiety of the future inhabitants of our metropolises. The flâneur seeks refuge in the crowd. The crowd is the veil through which the familiar city is transformed for the flâneur into phantasmagoria. This phantasmagoria, in which the city appears now as landscape, now as a room [Lenz with the analyst; Lenz taking a stroll], seems later to have inspired the décor of department stores, which thus put flânerie to work for profit. In any case department stores are the last precincts of flânerie.⁶⁷

64 Walter Benjamin, *The Arcades Project*. M1.2, 416.

65 Walter Benjamin, *The Arcades Project*. M1.5, 417.

66 Both of these versions are reproduced in *The Arcades Project*. See the 1935 draft 3-13 and the 1939 version, 14-26.

67 See Benjamin, "D. 'Baudelaire, or the Streets of Paris,'" in "Paris, Capital of the Nineteenth Century" (1939), *The Arcades Project*, 21.

Well, no, the department store was not the *last* precinct. It was merely, for Benjamin, the most current. For us, today, *us flâneurs*, whose anxiety for the future of our metropolises overwhelms us, we who now give a new name to an eclipsed modernity, an Anthropocenic no-longer-post-modernity, we see this *veil* no longer in the crowd transformed to a phantasmagoria of commodity capitalism. That *crowd* is for us prematurely extinct. The phantasm is now carbon-based while the 'superstructure' is derivatives trading (Marx inverted but far from becoming Hegel). To the *veil* we give the name Anthropos-assemblage.

In *The Dialectics of Seeing*, Susan Buck-Morss offers a simple diagram to simplify some of the complexity in the dialectical image Benjamin develops of modernity.⁶⁸ As a dialectics-at-a-standstill, refusing the sublating – or sublimating – of the work of negation in Hegel, Benjamin maintains a series of opposing elements in tension.⁶⁹ At the centre of cross axes is the commodity. It is thus read immediately as a composition, an assemblage of two pairs of opposing notions. There is a vertical axis of waking (above) and dream (below). Hence the phantasmagoria of 'dead' things as emblematic of life living, happens in the dream-fetishes of advertising and in the waking life of economic transaction. The commodity is, ambivalently, dream work *and* labour. Though, on a horizontal axis are the pair, petrified nature (left) and transitory nature (right). In opposing these Benjamin is opposing two encounters with memory, with a grounding sense of just what things are and how things are possibly knowable. Petrification is the work of science: fossil traces. Transitory history is the work of myth, mythic nature. These cross-axes establish four telling quadrants. In the upper right is allegory and ruin expressive of *historical nature*; in the upper left is *natural history* as trace; in the lower right is *mythic nature* as wish-image or symbol; and in the lower left is *mythic history* as fetish or phantasmagoria. For Benjamin, the commodity is the fragmented mosaic of all of these, constituting the manner whereby our living is at once transitory and petrified, natural and historical, fetish and fossil.

68 See Susan Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*. (Cambridge, MA: The M.I.T. Press, 1989) 211.

69 On Benjamin's 'dialectics at a standstill', see Rolf Tiedemann's comprehensive essay "Dialectics at a Standstill," republished in *The Arcades Project*, 929-945.

My aim in what follows is to adopt the modality of the schizo-stroll, *flânerie*, interstitial fragmentation of whatever now defines exchange value across wish-image, fetish, ruin and trace. Our *veil* through which we now encounter this phantasm is *our* Anthropocene. *It needs to be understood as fragmentary stroll*. We need to avoid the snare of a totalising, transcendent return to what could freeze us into inaction or, equally, consider total revolution as our only 'hope'. Ours is a minimal ethics. As Benjamin describes *flânerie*, walking involves a sensorial modality that mediates knowledge into the experiential. This 'felt knowledge' – Deleuze might say a logic of sensation – achieved through sensorial movements communicated between the sentient and, equally, the non-sentient becomes our tactic for urban knowing. In terms of design research tactics, design interventions themselves are partial, to be encountered allegorically. I'll say more about this in Chapter Six, in presenting some design interventions for diverse 'walkers' aiming for a 'felt' or sensorial 'knowledge', from thing to people or thing to birds, to water, to plastic: Lenz's stroll, Baudelaire's stroll, Benjamin's stroll: Schizo-capitalism, desiring machines. But, then, there is also de Certeau's stroll.

Walking in the City

We move quickly now, quicken our pace, our tempo. Michel de Certeau's legacies are many and they are complex. To his notion of the 'everyday' we would need to do a complex genealogy of French philosophical reception of especially Heidegger's *Being and Time*, a book that startled the twentieth century with

a deceptively simple notion that philosophy's most difficult questions have disclosure in the most everyday engagements of humans with things.⁷⁰ This reception of the 'everyday' would then pass through the exquisite thinking of Maurice Blanchot, be speculated on by Henri Lefebvre's radical understanding of space as that produced in experience and we would need to address Guy Debord and the Situationist International for the radical urban practices they developed, revolutionary encounters with 'designing' cities.⁷¹ But, really, we are in a hurry now and want to move directly to de Certeau's "Walking in the City," from his collection of essays, *The Practice of Everyday Life*. De Certeau's 'message' is also deceptively simple, like Heidegger's; and like Heidegger's has very complex ramifications. He poses, in a sub-heading at the beginning of the text: "Voyeurs or walkers."⁷² There is no question mark. This is not a question within which we choose a response. De Certeau is drawing out the distinction between a scopic totalising, seeing the whole and thus putting it at a distance, achieving the absolute viewpoint, or going blind, to prefer to 'walk' rather than 'see'. You see, de Certeau alerts us to an ontological disclosure, an horizontal disclosure at the instant he 'speculates' on blindness.

Planning takes up the realm of a scopic desiring production, a writing in order to read the text of the world writ small, at a distance, and in totality. "Ordinary practitioners" live 'down below'; they walk rather than see. They write a text they cannot read, using space that cannot be seen: fragmentary trajectories:⁷³ "Escaping the imaginary of totalisation produced by the eye, the everyday has a certain strangeness that does not surface, or whose surface is only its upper limit, outlining itself against the visible."⁷⁴ Importantly, for de Certeau, we live an

70 See Martin Heidegger, *Being and Time*. Trans. J. Stambaugh. (Albany, NY: SUNY Press, 1989).

71 On Blanchot, see especially the special issue of *Yale French Studies* on 'The Everyday', in particular Blanchot's essay, "Everyday Speech," trans. S. Hanson. *Yale French Studies No. 73* (1984) 12-20; on Lefebvre, see his contribution to YFS No. 73: "The Everyday and Everydayness," trans. Christine Levich, pp. 7-11 and his *The Production of Space*. Trans. D. Nicholson-Smith. (Oxford, UK: Basil Blackwell, 1991); on Guy Debord, see *The Society of the Spectacle*. Trans. D. Nicholson-Smith. (New York, NY: Zone Books, 1994).

72 de Certeau, *The Practice of Everyday Life*, 92.

73 de Certeau, *The Practice of Everyday Life*, 93.

74 de Certeau, *The Practice of Everyday Life*, 93.

existence determined by a strategic planning that aims at totalising and a tactical ensemble of fragments, opaque and blind: "A migrational, or metaphorical, city thus slips into the clear text of the planned and readable city."⁷⁵ Benjamin might say 'allegorical' here. Certainly, there is a strolling itinerancy. Deleuze might say 'D' for deterritorialisation, or Easterling 'D' for delta. Or, for Benjamin, Convolut M: The *Flâneur*.

The scopic, first and foremost opens to the concept as totality: The concept of the city, or the house, the school, the suburb, petroleum, fauna and so on. In this the heterogeneity of the real is condensed or subsumed such that one can think and articulate *it*, in order to act on *it*. There are three segmenting moves. The first produces (let's say) the city in its own *rational* space, repressing or reducing the difficulty of relations between the physical, the mental and the political. The city becomes its own synchronic identity. This becomes de Certeau's second moment. The city is conceived as synchronic system, scientific strategy, overcoming pluralisms of traditions, diachronic tendencies, tactics of users who take advantage of whatever is on offer. The third move is the creation of an autonomous and universal 'subject': the city itself. The complexity of 'walking' tactics is this: They become 'knowable' by becoming visible, by their reduction precisely through these three moves of planning and knowing. Deleuze and Guattari would call this a classic instance of 'negative' deterritorialisation, where 'D' is recouped precisely as re-territorialised. So, de Certeau emphasises, to walk is to lack a place, to indefinitely search for the proper, to displace and be displaced. Benjamin said somewhere that it is the most difficult thing to really get lost in a city. As de Certeau emphasises:

The long poem of walking manipulates spatial organisations, no matter how panoptic they may be: it is neither foreign to them (it can take place only within them) nor in conformity with them (it does not receive identity from them). It creates shadows and ambiguities within them. It inserts its multitudinous references and citations into them (social models, cultural mores, personal factors).⁷⁶

Walking, in this sense, is whakapapa. Proper names no longer become official terms for concepts. Rather they carve out enigmatic meanings, at once local, intricate and untranslatable, moving between map and utterance: This street name, the one on

75 de Certeau, *The Practice of Everyday Life*, 93.

76 de Certeau, *The Practice of Everyday Life*, 101.

which I lived for so many years, with its networks of memory traces at once singular, private yet entirely communal. De Certeau concludes with something very close to Benjamin, the Benjamin of the *Trauerspiel*. Under a heading "Credible things and memorable things: habitability," de Certeau suggests that the techno-rational order, the one we so readily identify with Anthropocenic crisis, is itself critically distraught: "The surface of this order is everywhere punched and torn open by ellipses, drifts, and leaks of meaning: it is a sieve-order."⁷⁷ Moreover, with the blind tactics of memory-tracing, everything becomes haunted. But, as de Certeau stresses: "Haunted places are the only ones people can live in—and this inverts the schema of the *Panopticon*."⁷⁸

Let's stroll ...

4. FRAGMENTS FROM A CARBON PHANTASM

An Oily-Urbanism Drift

The various toxic registers of the Anthropocene outline how a *humanist* politics of passing through was never a sufficient break, or walker's ghosting, for the city. In the drifts that follow, the walker becomes particled divergent beings forever motile, in transformation, with respect to their Earth and its whakapapa. In the drifts below, we follow the movements of key Anthropocenic 'walkers.'

Petro-Carbon Cities

As we have discussed, the Anthropocene is contemporaneous with petro-carbon Modernism, that cultural engine that has radically re-distributed carbon molecules from their place, deep in the earth, out of ancient sedentary containment into Te Ao Marama, the world of light, air and sea. Carbon moves – respiring, metabolising, absorbing, dissolving, calcifying, eroding – between earth, sea and the atmosphere, in a carbon triad. Carbon's movements in cities has had world-changing agency as petro-carbon energies radically restructured our cities. The contemporary petro-city lacks the density of cities formed by and for urban *walker*. Contemporary oil-urbanism is, after the advent of public transport (street cars, buses, trains) and subsequently mass-produced, individually-owned, petrol-powered cars, spatially

77 de Certeau, *The Practice of Everyday Life*, 107.

78 de Certeau, *The Practice of Everyday Life*, 108.

extensive with low-density distributed zones of suburban housing and consumer landscapes of malls and big box-stores. A working paper by the Lincoln Institute of Land Policy reports that American cities had a five-fold reduction in average lot density between 1910 and 2000.⁷⁹ Over the twentieth century American cities spread laterally as they grew, with deleterious ecological effects related to reduction of biodiversity and biodiverse environments. Differences in urban-density between developed and developing countries are marked: 28+ in land-rich developed countries, 135+ in developing countries. On average, density rates are in decline. The paper notes that while cities in developing countries are predicted to double in size over the next thirty years, their built-up areas may triple as density declines, with on-flowing ecological harm.

Petro-Carbon Atmospheres:

Prior to the Anthropocene, carbon was stored in earth and sea, with limited volumes free-floating in the atmosphere. Atmospheric carbon levels have been greatly perturbed by anthropogenic carbon-dioxide pollution since the beginning of the petro-carbon-industrial era. Today, in early 2018, we are at 410.31 parts per million, as measured by Mauna Loa Observatory in Hawaii, according to citizen scientist website Earth's CO2.⁸⁰ NASA's 'Vital Signs of the Planet' webpages note that the last time the planet was at or above 400 ppm was in the Pliocene, some 3.6 million years ago, when there were no humans. The arctic was ice-free and oceans were 5-40 metres higher than today.⁸¹ The *United Nations Emissions Gap Report* of 2017 warns that we are on track to breach the 2015 "Paris Climate Accord" agreement (limiting warming to two degrees or less) and on a trajectory for a 3.2

79 Shlomo Angel, Jason Parent, Daniel L. Civco, Alejandro M. Blei, "The Persistent Declines in Urban Densities: Global and Historical Evidence of 'Sprawl'," *Lincoln Institute of Land Policy*, July 2010. <https://www.lincolninst.edu/publications/working-papers/persistent-decline-urban-densities>

80 Earth's CO2 Home Page, accessed May 2018. <https://www.co2.earth/>

81 "Explore. Graphic: Carbon Dioxide Hits New Highs," *Global Climate Change: Vital Signs of the Planet*, NASA, accessed July 2017. https://climate.nasa.gov/climate_resources/7/graphic-carbon-dioxide-hits-new-high/; Julie Brigham-Grette et al, "Pliocene Warmth, Polar Amplification, and Stepped Pleistocene Cooling Recorded in NE Arctic Russia," *Science* (May 9, 2013), DOI:10.1126/science.1233137

degree Celsius increase until 2100.⁸² 2017 was approximately 1.1 degrees Celsius warmer than pre-industrial times. We are almost already at that precautionary 1.5-degree limit.⁸³ *Copernicus*, Europe's "Earth Observation Programme," confirms that 2017, 2016, 2015 are the warmest years on record.⁸⁴ The last few decades are likely to have been the hottest in over 11,000 years. We are leaving the temperate climate of the last 10,000 years, the Holocene epoch, whose conditions enabled agriculture and a globalised urban civilisation.

In the era of the Anthropocene, the urban has been globalised as a particular spatial patterning – extensive, car-oriented rather than walker-oriented – but also via a more insidious molecular mobility as the by-products of a petro-urban transport metabolism build up in the atmosphere as excess Carbon Dioxide. This Anthropocenic urbanism has geo-territorial intensities – urban centres, extensive suburban and retail/industry zones, and perimeter ex-urban and peri-urban zones – but also exists as a globally distributed geo-politics of molecular movements.

Petro-Carbon Atmospheres: Heat Stress

As Carbon Dioxide levels rise globally and temperatures rise, cities become heat-intensifiers as highly reflective urban surfaces generate heat island effects. For many this is a matter of discomfort only, but urban heat waves are lethal for some, with significant loss of life. "The Lancet Countdown Report on Health and Climate Change" notes that in 2015 some extra 175 million people were exposed to heatwave events.⁸⁵ The report suggests that anthropogenic climate change has

82 *The Emissions Gap Report 2017* (United Nations Environment Programme (UNEP): Nairobi, 2017), <https://environmentlive.unep.org/theme/index/13#egr>

83 World Meteorological Organization, *WMO Statement on the State of the Global Climate 2017* (WMO, 2018) 4, https://library.wmo.int/opac/doc_num.php?explnum_id=4453

84 "2017 Extends Period of Exceptionally Warm Years, First Complete Data Set Shows," *Copernicus Climate Change Service*, accessed May 2018, <https://climate.copernicus.eu/news-and-media/press-room/press-releases/2017-extends-period-exceptionally-warm-years-first-complete>

85 See Nick Watts et al, "The Lancet Countdown Report on Health and Climate Change: From 25 years of inaction to a global transformation for public health," *The Lancet* 391 (10120, February, 2018): 581-630, 587. [http://dx.doi.org/10.1016/S0140-6736\(17\)32464-9](http://dx.doi.org/10.1016/S0140-6736(17)32464-9)

potential to undermine public health gains of the past 50 years.⁸⁶ If anthropogenic warming continues, extreme heat waves will kill even healthy people as a key threshold for the viability of human life on this planet is breached. The wet-bulb temperature (WBT) is a mix of heat and humidity that is a vital Anthropocenic index. When WBT reaches 35 degrees, the human body cannot cool itself by sweating and death occurs within six hours. This is a hard human-adaptability limit. In the current climate WBT rarely exceeds 31 degrees Celsius. The combination of anthropogenic global warming with urban heat islands indicates that this critical index for liveability will likely first be breached in a city. A study in *Nature Climate Change* projects that, in a business-as-usual scenario, by 2070 temperatures in cities in the Arabian Gulf, that major petro-carbon producing locale, will regularly exceed this hard limit for life-viability, "with severe impact [for] human habitability in the future."⁸⁷ Where is our papa, our earth, where is *oikos-eco*, the home, when the planet becomes unhomely in this way? Where is our immanence to the earth, life-field, when we can no longer in-dwell?

Petro-Carbon Atmospheres: Anthropogenic Weather

In the Anthropocenic everyday weather is, to one degree at least, an anthropogenic artefact. Climate disruption has been here for some time. Recent research has found a 'human fingerprint' on global extreme weather events: The "2003 European heat wave, the 2010 Pakistan floods and Russian heat wave, the 2011 Texas heat wave and recent floods in Europe," the unprecedented drought in California, all show evidence of being linked to amplified Arctic warming and climate change.⁸⁸ These changes in weather, local and everyday manifestations of global long-term climate systems, manifest as extremes of heat and cold, rain and drought. Urban environments lacking resilience become quickly overwhelmed in these extremes. Low-lying cities proximate to water courses – seas, rivers, bayou – have been overwhelmed by flooding and storm surges resulting from the catastrophic intensity and duration of these storms. Those cities that have ignored

86 Watts et al, "The Lancet Countdown Report on Health and Climate Change: From 25 years of inaction to a global transformation for public health," 581.

87 See Jeremy S. Pal and Elfatih Eltahir, "Future temperature in Southwest Asia projected to exceed a threshold for human adaptability," *Nature Climate Change* 6 (February, 2016): 197-200.

88 See Michael E. Mann et al, "Influence of Anthropogenic Climate Change on Planetary Wave Resonance and Extreme Weather Events," *Scientific Reports* 7 (45242, March, 2017): 1. DOI: 10.1038/srep45242

their geography, or hydrography, are particularly at risk. Cities like Houston have been in the news recently, examples of 'perfect storms' where design choices to build on flood zones and use hard (pave-pipe-pump) engineering solutions have amplified anthropogenic weather events. Hurricane Harvey's record-breaking heavy rainfalls have been shown to be consequent to human-induced record high ocean-heat levels. As researchers note, in a 2018 paper for the journal *Earth's Future*, the lack of adaptation and resilience planning for these human-caused climate disasters exacerbate negative effects.⁸⁹ Damages and effects attributed to Hurricane Harvey cost some \$125 billion, second only, in American storms, to Hurricane Katrina's \$160 billion.⁹⁰ Costs of adapting urban systems to floods and sea-surges are significant and these adaptation costs must be considered not just in relation to initial design strategies for water and storm resilience but also in terms of potential ongoing rebuild or remediation costs. How many times can cities be rebuilt, bayou waters pumped away, before available budgets run dry? How long will insurance companies insure urban environments vulnerable to extreme weather?

Petro-Carbon Seas: Heating, Acidifying, De-oxygenating, Rising, Plasticising

There is no climate justice in the Anthropocene. Many of those humans least responsible for climate change will be most exposed while global warming will significantly catalyse extant biodiversity annihilation. As noted in Chapter Two, the seas are acidifying consequent to the additional anthropogenic carbon burden, with negative effects for species with low-tolerances to this change. They are also heating and New Zealand had a 'marine heatwave' in late 2017-early 2018, with the Australian Government's Meteorology Bureau and New Zealand's NIWA-Taihoru Nukurangi issuing a "Special Climate Statement" on record warmth in the Tasman Sea, New Zealand and Tasmania. As marine biologist, Daniel Pauly, confirms: "Climate change is already something that is being perceived by fish.

89 See Kevin E. Trenberth et al, "Hurricane Harvey Links to Ocean Heat Content and Climate Change Adaption," *Earth's Future* 6 (5, May 2018): 730-744. <http://doi.org/10.1029/2018EF000825>

90 "Costliest U.S. Tropical Cyclones Tables Updated," *National Hurricane Centre*, January 16, 2018, <https://www.nhc.noaa.gov/news/UpdatedCostliest.pdf>

It's already happening and they are already moving."⁹¹ Temperature ranges define where fish live and, as the global ocean warms, fish are following the temperature vectors, moving polewards, away from the equator's too-warm waters. As a further response to warming seas, fish are expected to shrink in size as a physiological response to warmer waters.⁹² This will require them to use more oxygen in oceans that are also deoxygenating due to anthropogenic warming.⁹³

Anthropogenic sea-level rise threatens many cities currently near or below sea-level. A first of its kind study by Robert E. Kopp et al on global sea-level change shows an acceleration in sea-level rise.⁹⁴ As a recent report from the Climate Central research initiative emphasizes: "Every global shore touches the same ocean, and the ocean is rising." This novel analysis of global sea-level rise and coastal cities by Climate Central, based in part on the Kopp study, notes that the oceans are rising and if emissions continue on their current trend, between 147-216 million people will be exposed to sea and floodwater incursion by 2100.⁹⁵ China, now the largest greenhouse-gas emitter by volume, will be by far the most exposed with some 41-63 million people affected. The study notes that these estimates may be too low, with potential for some 650 million people to be affected. "Three degrees World" flood maps created by *The Guardian* using sea-level rise estimates from Climate

91 Helen Davidson, "Marine Expert Warns of Climate Emergency as Fish Abandon Tropical Waters," *The Guardian*, June 15, 2017. <https://www.theguardian.com/environment/2017/jun/15/marine-expert-warns-of-climate-emergency-as-fish-abandon-tropical-waters>

92 Daniel Pauly and William W. L. Cheung, "Sound Physiological Knowledge and Principles in Modelling Shrinking of Fishes under Climate Change," *Global Change Biology* 24 (1, August 21, 2017) <https://doi.org/10.1111/gcb.13831>

93 Kieran P. Helm, Nathaniel L. Bindoff and John A. Church, "Observed Decreases in Oxygen Content of the Global Ocean," *Geophysical Research Letters* 38 (23, December 2, 2011) <https://doi.org/10.1029/2011GL049513>

94 Robert E. Kopp et al., "Temperature Driven Global Sea-Level Variability in the Common Era", *PNAS* 113 11, (March 15, 2016): <https://doi.org/10.1073/pnas.1517056113>

95 Benjamin Strauss, Scott Kulp, "Research Report: New Analysis Shows Global Exposure to Sea Level Rise", *Climate Central*, (September 23, 2014). <http://www.climatecentral.org/news/new-analysis-global-exposure-to-sea-level-rise-flooding-18066>

Central, United Nations warming estimates, University of Washington emissions modelling and digital elevation data show some of the world cities that will end up under a rising sea.⁹⁶

Petro-carbon plastics: The Plastisphere

And it is not just Carbon molecules, newly liberated from their oil-bonds, that are so actively mobilising our living-world. Petro-carbon plastics too are now globally pervasive, found everywhere, from the deepest parts of the ocean to the ice of the Antarctic, to the food we eat. Scientists propose a new condition a 'Plastisphere',⁹⁷ to add to a geosphere made up of the hydrosphere, cryosphere, lithosphere, atmosphere and biosphere. This plastisphere, analogous to the thin layer of biological life encrusting the earth's surface, is the thin layer of microbial life that coats the plastic marine debris now pervading global oceans. Plastic made, *wherever*, travels in a ship in a container, to a supermarket (let's say) from the hand of a shopper to a rubbish bin, and thereafter is buried deep in the earth,

96 Josh Holder, Niko Kommenda, and Johnathan Watts, "The Three-Degree World: The Cities that will be Drowned by Global Warming," November 3, 2017. <https://www.theguardian.com/cities/ng-interactive/2017/nov/03/three-degree-world-cities-drowned-global-warming>

97 Erik R. Zettler, Tracy J. Mincer, and Linda A. Amaral-Zettler, "Life in the 'Plastisphere': Microbial Communities on Plastic Marine Debris," *Environmental Science & Technology* 47 (13. 2013): 7137-7146. DOI: 10.1021/es401288x

in a sealed crypt part of a designed, geological-layering-papa, that instantiates the Anthropocene. Or lifted by wind, this plastic floats skyward, before landing in a gutter, washing down a hill to the sea, into an aquatic world, with a silvered surface, breaking down over time, abrading into plankton-sized particles, then down into micro and nano-particles, part of a techno-soup of plastics ingested by small fish, incorporated into cells, attracting toxic chemicals, eaten by larger fish, eaten by humans, collecting toxins, returning to soil thereafter.

A recent report from the Ellen MacArthur Foundation suggests that by 2050 there will be more petro-plastic by weight than fish in the sea.⁹⁸ This plastic collects as vast gyres of non-biodegradable rubbish that does not return into the earth or ocean matrix for re-forming but rather retains its fixed chemical structures with toxic effects. At this time in the Anthropocene we are registering the structural problems attendant to the fabrication of synthetic exo-materials that sit outside of geo-spherical formation-reformation processes. The MacArthur Foundation report, *New Plastics Economy*, documents the rise in plastics production: This has “surged over the past 50 years, from 15 million tonnes in 1964 to 311 million tonnes in 2014, and is expected to double again over the next 20 years.”⁹⁹ Plastic packaging is largely single-use, going directly to landfill, or into an environment within which it is not designed to engage. Primary microplastics are those released into the sea as small particles rather than breaking down in the environment. Between fifteen and thirty-one percent of plastics in the sea may be these primary microplastics, ninety-eight percent originating from land and landuses.¹⁰⁰ These include fibres released from synthetic-plastic textiles during washing (approx 35% of primary microplastic composition), materials from tyre abrasion (approx 30%), and ‘city dust’ (scrub products are 2%). Primary pathways are via road runoff (approx 70%), and through wastewater treatment systems (25%), and wind (7%). Responses here need to attend to design and life-cycle thinking rather than just waste management, and involve public water treatment facilities as well as private

98 *New Plastics Economy: Rethinking the Future of Plastics and Catalysing Change* (Ellen MacArthur Foundation, 2017) 12. <https://www.ellen-macarthurfoundation.org/publications/the-new-plastics-economy-re-thinking-the-future-of-plastics-catalysing-action>

99 *New Plastics Economy: Rethinking the Future of Plastics and Catalysing Change*, 12.

100 Julien Boucher and Damien Friot, “Primary Microplastics in the Oceans: A Global Evaluation of Sources.” (Gland, Switzerland: IUCN, 2017), 19. [dx.doi.org/10.2305/IUCN.CH.2017.01.en](https://doi.org/10.2305/IUCN.CH.2017.01.en)

stakeholders like textile and tyre manufacturers. There is, it is estimated, some 150 million tonnes of plastic-pollution now in the ocean and this is expected to increase at an Anthropocenically appropriate rate: “In a business-as-usual scenario, the ocean is expected to contain 1 tonne of plastic for every 3 tonnes of fish by 2025.”¹⁰¹

Petro-plastics rely on a finite petro-carbon feedstock and maintain an oil-economy. But if petroleum is ancient de-composed bio-matter and forms the feedstock for petro-plastics, why is the vast mass of plastic-pollution not biodegradable? While petro-plastics are commonly made from propylene – a basic component of petroleum – this is treated under high heat with catalysts to form the carbon-carbon bonds of polypropylene.¹⁰² Geo-spherical chemical processes usually occur in more easy-to-support low-heat, low-energy conditions, and micro-organisms have evolved to enable the de-composition of these materials. There has been little need to date for organisms capable of breaking high-heat (high-energy) carbon-carbon bonds and so industrial capitalism’s carbon-carbon plastics sit outside of earth’s de-composition/re-composition (whakapapa) processes. [Stop-press: A small number of plastic-eating microbes have recently been discovered that can devour high-heat carbon-carbon bonds. These newly evolved micro-entities are a life-processes response to the Anthropocene’s ‘Plastisphere.’ Microbial decomposition of plastic is suspected in studies by Erik Zettler et al on marine plastics, while Japanese scientists have found a new bacterium, in a bottle-recycling facility. The bacterium can biodegrade polyethylene terephthalate (PET) down into basic molecular building blocks using two enzymes and is able to utilise PET as its primary energy and carbon source.¹⁰³ A question, though: Will these microbes in large numbers become our ‘saviour’ or will they unleash yet-to-be-understood further dimensions of catastrophe? By way of post-script, the *Environmental Science and Technology* article goes on to note that the plastic ‘flotilla’ was home to a large number of *Vibrio*, some species of which cause the disease Cholera.]

101 *New Plastics Economy: Rethinking the Future of Plastics and Catalysing*, 12.

102 Dennis B. Malpass and Elliot I. Band, *Introduction to Industrial Polypropylene* (Beverly: Scrivener Publishing, 2012), 4.

103 Shosuke Yoshida et al, “A Bacterium that Degrades and Assimilates Poly(ethylene terephthalate),” *Science* 351 (6278, March 11, 2017): 1196-1199. DOI: 10. 1126/science.aad6359

Vital-Urbanism: Urban Counter-Practices

The various dis-eases of the Anthropocene remind us that, on this immanent planet, we never walk alone. Rather these various walkers move *always in relation* to the other diverse entities that make us this living-world. Thus, in thinking the city we need to attend both to material agency and to how these things relate, affect, disrupt or bring wellbeing. I want to draw out, at the level of walking, how an attention to mauri, life-field, is transformational in *doing* urbanisms. This is a politics of urban transformation but one that exceeds a narrow anthropocentrism and that locates its transformative agency in the movement, the flux, the vitality, the radical connectedness of an immanent life-field. The urban is understood as ongoing change, site of multiple mobilities traversing scales. Similarly urban products, outputs, urban conditions and environments are not separate from an 'inert' Earth but rather are part-thereof, constantly abrading, degrading, transforming, cycling through as geospherical flux.

Anthropos-Assemblage, as walker, is radical differentiations in life-force and matter that, nevertheless, are whanaunga, related through whakapapa and through their mauri. The drifts detailed below delineate a tactical vital-materialist everyday as urban counter-practice. The various delineated mobilities trace energies and operations, pedestrian utterances of the living-world. Mobilities enable toxicities or wellbeing dependent on the capacities of the agents involved and the sensibilities of the 'crowd'. This analysis asks what are those tactics or practices that enable or activate wellbeing. There is an inherent difficulty or difficult question to be posed when engaging the urban in respect to the everyday within a design context: How to address or acknowledge and work with de Certeau's characterisation of the urban planner as scopic control? How do we position tactical urban design discussed here, but also larger *strategies* based on or drawn from those tactics? How do we avoid what Deleuze and Guattari would term re-territorialising moves? The drifts below remind us of the agency and interconnections of the living-world. This is collective, multi-entity, multi-species, human at times, though equally vegetal or animal or molecular. This is designing for connection, with local energies, local ecosystems, with local communities, within the multivalent multiplicities of relations that are all around us. Consider the notion of ethical relationality developed by Indigenous scholar, Dwayne Donald: "An ecological understanding of human relationality that does not deny difference, but rather seeks to more deeply understand how our different histories and experiences position us in relation to each other ... an ethical imperative to see that ... we live in the world together with others and

must constantly think and act with reference to those relationships."¹⁰⁴ This is to be extended to our other whanaunga (relations) of a living-world. If we could actually understand the sublime energy flows, the ceaseless molecular agencies driving the constitution, dissolution, transformation of material entities, including 'our' own bodies, if we could fundamentally engage with those relational and transformational exchanges, what a shift this would be! Imagine if we could wake from the 'Carbon Phantasm' we have been dreaming for the last several hundred years and sense the energy around us, in, for example, the sextillion photons of starlight hitting your skin each second, ending their journey from our closest star, the sun, or from extra-galactic sources at the far reaches of time and universe, in the deep cold of space. Or we might sense the energy within the fluid velocities of surging tidal oceans or gravity-impelled rivers; in the screaming jet-stream winds that encircle the globe; or in the tiny chloroplast's photosynthetic agency.

Solar and the vitality of the life-field (Crowd practice).

Some four million exajoules of solar energy charge the earth as we complete one orbit of the sun (one year).¹⁰⁵ This vital energy feeds most bio-life on the planet, charging the atmosphere with wind energy, and the temperature gradients and massive fluid circuits of the oceans, while heat energy evaporates water into clouds to feed the water cycle. At a micro-scale, within chlorophyll-packed cells, solar energy drives bio-chemical processes and builds plant matter, molecular building block by molecular building block. The sun's vital radiance has a circular periodicity whose timing drives bio-chemical processes. Massive solar energy flows translate into the sublime vitality of the living-world.

In approximately one hour, more solar energy reaches the earth than all of the energy used by our global civilisation in a year.¹⁰⁶ This energy is 'free', one of the many agencies and circulations in motion in this living-world, part of the

104 Dwayne Donald, "Forts, Curriculum, and Indigenous Metissage: Imagining Decolonization of Aboriginal-Canadian Relations in Educational Contexts," *First Nations Perspectives* 2 (1, 2009): 6-7. http://mfnerc.org/wp-content/uploads/2012/11/004_Donald.pdf

105 Ehsanul Kabir et al, "Solar Energy: Potential and Future Prospects," *Renewable and Sustainable Energy Reviews* 82 (2018): 894. <http://dx.doi.org/10.1016/j.rser.2017.09.094>

106 Nathan S. Lewis and Daniel G. Nocera, "Powering the Planet: Chemical Challenges in Solar Energy Utilization," *PNAS* 103 (43, October 24, 2006): 15729.

interactive life-field between earth and sun. A revolution is in the wind here, the potential to democratise energy to humans as plants have open access to quanta of power flowing in the life-field. Using ancient plant-matter as the primary fuel source for industrial-capitalism was always a wrong-turn, away from a ceaseless – for the next 7.5 billion years at least – vast and non-polluting energy source. Almost forty years after American president, Jimmy Carter, installed working solar panels on the roof of the White House, and some thirty-three years after following president, Ronald Reagan, removed them, we are undergoing a solar revolution where renewable energy will become normative. The exact policies, relationships, and networks required for this level of social transformation are yet to be designed. Electricity is likely to become, for this next design iteration as ‘Solar-Culture’, the primary energy source not only of our buildings but also for transport. Fossil-fuelled cars will be outlawed in Paris by 2030, by 2040 in France as a whole, in Norway by 2025, while Copenhagen will ban diesel cars by 2019 allowing low-emission vehicles only. Electric planes and ships are being designed and deployed. Air-borne particulates from fossil-fuel tail-pipe emissions have strong adverse health effects.¹⁰⁷ Technological disruptions such as low-emissions vehicles will add to urban wellbeing as they reduce urban particulates. Home or neighbourhood-based renewable energy, another disruptive technology about to be deployed in force, will add to low-emissions grids and contribute to energy autonomy and energy democracy for local residents some of whom may have critical, health-related energy needs.¹⁰⁸ Are we here designing a culture that connects with sublime planetary energy flows? We electrify vehicles but perhaps not ask broader questions about commodity mobility, production and exchange.

Biodiversity – the More-Than-Human (Crowd Practice).

I want to address another kind of agency or energy in the more-than-human world, of a huge sky, birds, tidal seas and their denizens, of earth and microbes, mycelia networks, insects, of forest, all of this vast mesh of entities and relational processes. As noted earlier in the thesis, there are language-limits in thinking and speaking when ontologically we encounter paradigm change. Words such as ‘nature’ and ‘culture’ are heavy with metaphysical accretions and a lot of current philosophising goes into renewing or attempting to renew their agencies. Vanessa

107 Sabrina Rovelli et al, “Mass Concentration and Size-Distribution of Atmospheric Particulate Matter in an Urban Environment,” *Aerosol and Air Quality Research*, 17 (2017): 1142.

108 Elizabeth Bomberg and Nicola McEwen, “Mobilizing Community Energy,” *Energy Policy*, 51 (2012): 435-444.

Watts argues that, from an Indigenous position and in relation to Indigenous Cosmologies, the term 'society' can speak to both more-than-human and human 'worlds': "Habitats and ecosystems are better understood as societies from an Indigenous point of view; meaning that they have ethical structures, inter-species treaties and agreements, and further their ability to interpret, understand and implement."¹⁰⁹ Here both more-than-human and human entities engage as diverse and constantly repositioning assemblages or relations in what Sarah Whatmore, following Jeanette Winterson, describes as "the material fabric and diverse company of 'livingness'."¹¹⁰ Following Jean-Luc Nancy's concepts of 'being-with' and the (difficult) plurality of coexistence, Nick Bingham suggests a way of thinking ourselves as collectively in the midst of things.¹¹¹ We are part of the life-field, within the fielding of mauri as life-energy. What does it mean to design for this collectivity, this coexistence? How do we design for being-with, and what might this mean for urban (more-than-human and human) wellbeing?

There is an increasing number of studies that show how human wellbeing increases from contact with our more-than-human co-existents. Green spaces or treed areas in cities can improve well-being and affect socio-economic indices in diverse ways, including the provision of cognitive benefits and the improvement of attention-deficit conditions.¹¹² Studies show that deprivation-based health inequalities can

109 Vanessa Watts, "Indigenous Place: Thought and Agency amongst Humans and Non-humans (First Woman and Sky Woman go on a European Tour!)," *DIES: Decolonization, Indigeneity, Education and Society* 2 (1, 2013): 20–34.

110 Sarah Whatmore, "Materialist Returns: Practising Cultural Geography in and for a More-Than-Human World," *Cultural Geographies* 13 (2006): 600-609.

111 Jean Luc Nancy, *Being Singular Plural*, trans. R. D. Richardson and A. E. O'Byrne. (Stanford: Stanford University Press, 2000); Nick Bingham, "Bees, Butterflies, and Bacteria: Biotechnology and the Politics of Nonhuman Friendship," *Environment and Planning A: Economy and Space* 38 (3, 2006): 483-498 <https://doi.org/10.1068/a38436>

112 Lucy E. Keniger, "What are the Benefits of Interacting with Nature?" *International Journal of Environmental Research and Public Health* 10 (3, 2013): 913-935. doi:10.3390/ijerph10030913; Danielle F. Shanahan et al, "The Health Benefits of Urban Nature: How much do we need?" *Bioscience* 65 (5, 1, May 2015): 476-485. <https://doi.org/10.1093/biosci/biv032>

be mediated by exposure to green spaces.¹¹³ The addition of eleven extra trees per block “decreases cardio-metabolic conditions in ways comparable to an increase in annual personal income of \$20,000 and moving to a neighbourhood with \$20,000 higher median income.”¹¹⁴ Greener neighbourhoods show population-level increases in physical activity and improved health outcomes.¹¹⁵

Engagement with our living-world co-existents can occur through activities such as gardening and there is a range of studies on urban gardening and increased nutritional wellbeing, psycho-social wellbeing from bio(geo)phila effects and from human socialisation, and increased fitness.¹¹⁶ There is increasing awareness of the ethics of plant-based diets (avoiding animal suffering), carbon and water savings in switching from cows to plants, and reduction of land needed, thus reducing collateral habitat loss and species extinction. Grown as part of the urban landscape, here too a democratising – this time of fresh food – may occur. Our next ‘generation’ of ‘nature’ is currently being designed: Cell-cultured meat, plant-based burgers that taste like meat, legume-based ‘milk’. Diets may still resemble the meat and dairy-based foods of today but be entirely plant-based. If we were to shift to a (largely) plant-based diet, and reduce encroachments on biodiverse areas of the earth, can we change the industrial-capitalist register in which we inhabit the earth? Can we become something other than a global ‘super-predator’ obliterating powerful apex-predators and most other things in our path?

Connected Environments (Crowd Practice).

Contact with other human beings is also vital for urban wellbeing. The car-cultures

113 Richard Mitchell and Frank Popham, “Effect of exposure to natural environment on health inequalities: An observational population study,” *Lancet* 372 (8 November, 2008): 1655–1660. [https://doi.org/10.1016/S0140-6736\(08\)61689-X](https://doi.org/10.1016/S0140-6736(08)61689-X)

114 Omid Kardan et al, “Neighbourhood Green Space and Health in a Large Urban Center,” *Scientific Reports* 5 (2015). doi: 10.1038/srep11610

115 Elizabeth Richardson et al, “Role of physical activity in the relationship between urban green space and health,” *Public Health* 127 (4, 2013): 318–324.

116 Masashi Soga, “Health Benefits of Urban Allotment Gardening: Improved Physical and Psychological Well-Being and Social Integration,” *International Journal of Environmental Research and Public Health* 14 (71, 2017). doi:10.3390/ijerph14010071

of petro-cities create disconnection from other people and from sensory-embodied perception of the everyday of the living-world. Loneliness is a potent Anthropocenic toxin. Loneliness is an evolved biological alarm. Like pain, it signals a risk to health and, like hunger, it signals a need to seek emotional sustenance. Loneliness is a powerfully negative factor for health and wellbeing, which can increase risk of early death by twenty nine percent.¹¹⁷ At the other end of the social continuum, a large body of research correlates social connection with wellbeing. In the urban field, design for social connection can lead to changes in how we design roads (whether cars or people have right of way), whether our housing enables community or social exchange, how public spaces are valued and sustained. Wellbeing researchers suggest that urban policy for mobility or housing or public health “should not be implemented in its own single-policy vacuum. The way policies reinforce or enable each other” is key to successful urban outcomes.¹¹⁸ Enabling wellbeing in neighbourhoods and cities requires a sensitivity to the interconnection of multiple diverse conditions that enable or disable urban wellbeing.

How can the built environment contribute to a neighbourhood’s social connectivity and therefore wellbeing? Designing walkable urban space also enhances social connection.¹¹⁹ Local evidence shows that neighbourhood destination access, street connectivity and dwelling density are important neighbourhood characteristics in the encouragement of walking for neighbourhood residents and therefore the potential for social connections.¹²⁰ The nature of the walking experience is key also: Is it quiet? Is the air clean? Or is it ‘loud’ and hazy with air-borne vehicle particulates? Is there green (or blue, river, lake, wetland or sea) space nearby?

117 Julianne Holt-Lunstad et al, “Loneliness and Social Isolation as Risk Factors for Mortality: A Meta-Analytic Review,” *Perspectives on Psychological Science* 10 (2, March 1, 2015): 227-237. <https://doi.org/10.1177/1745691614568352>

118 Kevin M. Leyden et al, “Understanding the Pursuit of Happiness in Ten Major Cities,” *Urban Affairs Review* 47 (6, 2011): 861–888.

119 Leyden et al, “Understanding the Pursuit of Happiness in Ten Major Cities,” 871.

120 Hannah M. Badland et al, “Understanding the Relationship between Activity and Neighbourhoods (URBAN) Study: Research Design and Methodology,” *BMC Public Health* 9 (July 10, 2009).; Melody Smith et al, “Systematic Literature Review of Built Environment Effects of Physical Activity and Active Transport – An Update and New Findings on Health Equity,” *International Journal of Behavioural Nutrition and Physical Activity* 14 (2017). DOI 10.1186/s12966-017-0613-9

Mixed-use programmes and ‘third places’¹²¹ also bring people together in social surroundings (public parks or play-spaces, community gardens, cafes, libraries, neighbourhood street parties, festivals) that build community.

Designing for housing within an integrated walkable neighbourhood with shared and communal spaces can improve the socialisation and wellbeing of residents.¹²² We can design for connectivity in terms of social contact when approaching one’s home: How lobbies are designed in medium-density housing; or pathways in terrace housing, or when using shared facilities adds to social contacts over the day. New Zealand has Indigenous exemplars of design for community. Papakāinga (ancestral home, housing cluster) are collective, traditionally kin-based, housing that spatialises Māori notions such as whanaungatanga (relationality) to te Ao Marama (the world of light). Here, and in the pā discussed below, social connection includes both human and other-than-human.

Pā (fortified, often elevated, urban structures) again spatialize connectivity between humans and a related living-world. To date, around 6000 pā sites have been recorded in Aotearoa. It seems that a great number of pā came into being in a short period of time, during the fifteenth and sixteenth centuries.¹²³ While consistent with Polynesian practices of monumental landscapes, as Mike Austin notes, in Aotearoa New Zealand this becomes wide-spread: “Every prominent hill, island, headland or spur in the North Island of the country known as Te Ika a Maui (the fish of Maui) has been shaped for settlement for hundreds of years.”¹²⁴ The term ‘pā’ means to cluster or group together, as well as to block up, obstruct or close off an open space. Pā were defensive architecture but it is likely that they were also structures of spectacle that inscribed more-than-human societal connection. James Belich notes that pā “were so difficult to take that there was often little point in trying They are evidence of the presence of reserves, not their absence.

121 R. Oldenburg, *The Great Good Place: Cafes, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and how they get you through the Day* (New York: Marlowe, 1999).

122 Angela Sanguinetti, “Transformation practices in co-housing: Enhancing resident’s connection to community and nature,” *Journal of Environmental Psychology* 40 (2014): 86-96.

123 Louise Furey et al, *The Archaeology of Pōuerua*, (Auckland and London: Auckland University Press and Eurospan, 2003) 232.

124 Michael Austin, “Kiwi Architecture: Modernism Recycled,” *Fabrications* 14 (1-2, 2004): xix.

They must post-date, or emerge in tandem with, the successful shift by some groups from an extractive to a sustainable economy."¹²⁵ Ian Barber also suggests a cultural shift following failures in primary food resources. He asks whether pā of the fifteenth and sixteenth centuries, at least, could have been "monumental reaffirmation of and appeal for the extension of a more beneficent and productive order into a now more permanently capricious island world."¹²⁶

A volcanic field is at the centre of Tamaki Makaurau (Auckland). Some twenty-nine volcanic cones were once inhabited by Maori. The smallest population was likely to have been on the small island of Motukorea, located in the Hauraki Gulf (some 255 people), while the largest population was on Maungakiekie (some 2550 people). Collectively, the population of this urban agglomeration may have been in the order of 22,500 people. These maunga settlements of Tamaki Makaurau are exemplars of indigenous urbanism.¹²⁷ Terraces and depressions in the earth formed architectural locales, for sunken houses in cold areas, food stores, earth-ovens, fireplaces – an earth-matrix-forming dwelling. Defensive structures were probably largely limited to the tihi, the summit. Seasonal foods were harvested from surrounding podocarp-broadleaf forests, rivers and seas while walled gardens in the landscape around the cones and slope-gardens on the cones grew food for consumption and storage in the pā. Susan Bulmer describes the sophistication of these gardens: "The garden features created many kinds of growing conditions which improved soil structure, nutrients, moisture and temperature."¹²⁸ One special

125 James Belich, *Making Peoples. A History of the New Zealanders: From Polynesian Settlement to the End of the Nineteenth Century*, (Auckland: The Penguin Press, 1996) 80.

126 Ian Barber, "Loss, Change, and Monumental Landscaping: Towards a New Interpretation of the 'Classic' Maori Emergence," *Current Anthropology* 37 (1996): 876–7.

127 Amanda Yates, "Micro-urbanism: Regenerative buildings and the architectural landscape of the Pā," in *Tāone Tupu Ora: Indigenous Knowledge and Sustainable Urban Development*, ed. K. Stuart and M. Thompson-Fawcett. (Wellington: Steele Roberts, 2010) 23-27; Susan Bulmer, "City Without a State? Urbanisation in Pre-European Auckland, New Zealand," Paper presented at the SAREC conference, Mombassa, 24. http://www.musik.uu.se/digitalAssets/9/a_9466-f_BulmerAll2.pdf

128 J. Coates, "An Experimental Approach to the Archaeology of Earth and Rock Mounds in New Zealand" (Auckland: Department of Conservation, 1992), cited in Bulmer, "City Without a State? Urbanisation in Pre-European Auckland, New Zealand."

form of garden structure, the earth and rock mound, has a capacity for permanent cultivation, year after year. These structures, which varied greatly in the specifics of their construction, were able to significantly increase soil temperature and the length of the growing day and growing season, and to retain moisture in periods of low rainfall."¹²⁹ Bulmer notes that the cones were able to be permanent settlements (in those periods in which they were occupied) because of the close-coupled urban agriculture. This urban field probably reached its maximum size and complexity in the early eighteenth century. Bulmer notes the level of social complexity necessary to coordinate the extensive gardens and settlements: "In the case of Taamaki-makau-rau, the urban centre was a development of a new level of sociopolitical complexity, based on wealth derived from traditional agriculture, a strategic position in transport and communication between districts, and the proximity of a group of prosperous towns."¹³⁰

There is an affective and performative power to this urbanism when one considers that it occurred within an ancestral landscape of *tūpuna* (ancestral) *maunga*. Discrete distinctions between 'nature' and 'culture' are not evident here in this integrated architectural-ground-scape where earth is both venerated foundation and dwelling vessel. If this earth-urbanism did perform a crisis-mediated cultural shift to locally attuned, future-oriented practices, then it perhaps offers guidance for a path out of our Anthropocenic dead-end.

Dark Earth

I want to conclude this chapter with an exploration of the agency of earth, *papa*, as that primary *tuapapa*, foundation. We start with current enquiries into earth health, and then move towards earth-oriented practices for coexistent wellbeing. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is a biodiversity-focused correlate to the Intergovernmental Panel on Climate Change (IPCC). As a multi-national research platform, it brings together diverse scientists in targeted investigations. After endorsement by 129 nation governments and more than 100 scientists, the IPBES published, in March

129 Bulmer, "City Without a State? Urbanisation in Pre-European Auckland, New Zealand," 14.

130 Bulmer, "City Without a State? Urbanisation in Pre-European Auckland, New Zealand," 24.

2018, its most recent assessment report on land degradation and restoration.¹³¹ The report emphasises the degree to which extractive and industrialised land-use practices have created a critical situation. Some seventy-five percent of the planet's land areas are substantially degraded with significant effects, as co-chair, Professor Robert Scholes, comments:

With negative impacts on the well-being of at least 3.2 billion people, the degradation of the Earth's land surface through human activities is pushing the planet towards a sixth mass species extinction... Avoiding, reducing and reversing this problem, and restoring degraded land, is an urgent priority to protect the biodiversity and ecosystem services vital to all life on Earth and to ensure human well-being.¹³²

The report describes how Petro-Carbon capitalism, with its high consumption, population growth and extractive and industrial land practices (in agriculture, resource mining and land usage, including urbanism) drives land degradation. Land degradation incites biodiversity loss and contributes to climate change as carbon stored in soil is released through extractive or damaging practices or through deforestation. Land degradation and climate change together reduce the viability of crops. Hence: "[By] 2050, the combination of land degradation and climate change is predicted to reduce global crop yields by an average of ten percent, and by up to fifty percent in some regions. In the future, most degradation will occur in Central and South America, sub-Saharan Africa and Asia, the areas with the most land still remaining that is suitable for agriculture."¹³³

131 The full report has not as yet been published. See the Summary for Policy Makers: R. Scholes et al, ed. *Summary for policymakers of the assessment report on land degradation and restoration of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (Bonn: IPBES secretariat, 2018).

132 "Media Release: Worsening Worldwide Land Degradation Now 'Critical', Undermining Well-Being of 3.2 Billion People," IPBES, April 2018. <https://www.ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%98critical%E2%80%99-undermining-well-being-32>

133 "Media Release: Worsening Worldwide Land Degradation Now 'Critical', Undermining Well-Being of 3.2 Billion People," IPBES, April 2018. <https://www.ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%98critical%E2%80%99-undermining-well-being-32>

The Chair of the IPBES, Sir Robert Watson, outlines how land degradation, biodiversity loss and climate change intersect as “three different faces of the same central challenge: the increasingly dangerous impact of our choices on the health of our natural environment. We cannot afford to tackle any one of these three threats in isolation – they each deserve the highest policy priority and must be addressed together.”¹³⁴ Thus the report emphasises land restoration approaches, traditional and modern, that can remediate degradation. For croplands, this means employing earth-practices that minimise soil exposure and loss, enhancing soil health; for rangelands working with local, ecologically appropriate livestock management systems; for wetlands reducing pollution and re-flooding drained sites; while for urban zones working with green-infrastructure, remediating polluted environments, and restoring rivers is important.

Dark Earth, Black Carbon

1. *Atmospheric Fixation* – There is enough energy in lightning strikes to break the N₂ bonds of nitrogen in the atmosphere. The resulting nitrogen oxides are then dissolved in rain and converted to plant-available nitrates. Yes, summer thunderstorms fertilize our gardens and farms.
2. *Biological Fixation* – Microbes (certain types of bacteria and archae) in soil and oceans are able to convert atmospheric N₂ into plant-available forms. Once the nitrogen is in a bioavailable form, it is cycled through the food chain via processes such as consumption (you eating a tomato), excretion (you flush quite a bit of nitrogen down your toilet each day), and decomposition (when you die – assuming you’re not embalmed in a metal box – you’ll be digested and recycled by various microorganisms). Some of this nitrogen is also respired or volatilized back into the atmosphere. And the process repeats.

“Fertile soil crumbles and slides right off a shovel. Look closely and you find a whole world of life eating life, a biological orgy recycling the dead back into new life.”¹³⁵ This thesis holds that the type of *carbon imaginary* operating is central to the issue

134 “Media Release: Worsening Worldwide Land Degradation Now ‘Critical’, Undermining Well-Being of 3.2 Billion People,” IPBES, April 2018. <https://www.ipbes.net/news/media-release-worsening-worldwide-land-degradation-now-%E2%80%99critical%E2%80%99-undermining-well-being-32>

135 David Montgomery, *Dirt: The Erosion of Civilizations*, (Berkeley & Los Angeles: University of California Press, 2007) 1.

of land degradation and extractive, or additive, practices. A Petro-Carbon imaginary is in operation in the Anthropocene. A mauri (life-field) Carbon imaginary enables us to understand immanent cyclings of resources, energy, and relations. Enhancing the mauri of the earth through increasing soil-organic-carbon has multiple flow-on effects as it enhances the fertility of the soil, and reduces toxic Anthropocenic airborne carbon. With the blinkered thinking of the biological, the earth is inert, it has no agency nor activation. It is in effect a vacuum, a matrix of emptiness whose only use is as a site for used industrial outputs – landfill, radioactive waste – or, with inputs of synthetically composed, fossil-fuel derived chemicals, to grow feedstock for a petro-industrial culture. Geomorphologist, David Montgomery, studies how topographies generate and evolve through geologic time. He writes in *Dirt: The Erosion of Civilizations* that we are running out of earth, and have been doing so since we began agricultural practices that remove protective plant-life, covering papa, the earth:

Many ancient civilizations indirectly mined soil to fuel their growth as agricultural practices accelerated soil erosion well beyond the pace of soil production. Some figured out how to reinvest in their land and maintain their soil. ... Despite recognition of the importance of enhancing soil fertility, soil loss contributed to the demise of societies from the first agricultural civilizations to the ancient Greeks and Romans, and later helped spur the rise of European colonialism and the American push westward across North America.¹³⁶

As the IPBES report highlights, critical land degradation is not just an issue of an ancient agrarian past. Montgomery's book emphasises how pertinent this is to our contemporary practices:

That soil abuse remains a threat to modern society is clear from the plight of the environmental refugees driven from the southern plains' Dust Bowl in the 1930s. ... While the world's population keeps growing, the amount of productive farmland began declining in the 1970s and the supply of cheap fossil fuels used to make synthetic fertilizers will run out later this century ... how we address the twin problems of soil degradation and accelerated erosion will eventually determine the fate of modern civilization.¹³⁷

136 Montgomery, *Dirt: The Erosion of Civilizations*, 2.

137 Montgomery, *Dirt: The Erosion of Civilizations*, 2.

A key substrate of the text attends to the geo-temporality of earth: Production of soil is a glacially slow process such that, measured in human life-times at least, it is non-renewable:

Few places produce soil fast enough to sustain industrial agriculture over human time-scales, let alone over geologic time. Considered globally, we are slowly running out of dirt ... an estimated twenty-four billion tons of soil are lost annually around the world – several tons for each person on the planet.¹³⁸

Soil exhaustion occurs when cultivated ground can no longer sustain a medial crop. As a globalised pattern, soil exhaustion is an effect of an extractive, short-term approach to the earth. When viewed geo-logically, with an attention to how soil maintains and indeed regenerates, it becomes clear that agrarian and other earth-practices need to attend to the agency and active production of living-earth through time.

Living Earth

Montgomery discusses a number of case studies that exemplify sustainable agrarian practices. One of these is the small island of Tikopia, in the south-west Pacific Ocean. In *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond also discusses Tikopia as an example of an egalitarian society that managed to find sustainable balance.¹³⁹ The island has tight limits, being 1.8 square miles in area, with 1,200 inhabitants, some 800 people per square mile of farmable land. Settled for some 3000 years, Diamond describes “bottom-up” agro-ecological practices by a small and low-hierarchy society. Tikopia has a warm climate, high rainfall, and soil rich with volcanic ash. The entire island-landscape is a cultural-landscape that is tended or cropped: “Micromanaged for continuous and sustainable food production ... Almost every plant species on Tikopia is used by people in one way or another.”¹⁴⁰ Most of the island is dedicated to food production from an island-wide food forest composed of an orchard, that produces edible foods or material for other products, and under-canopy plantings of edibles (yams, taro). The few treeless planted fields are mulched to prevent earth exposure and drying. Sea-food and lake fish and ducks supplement the plant-based diet. Diamond describes

138 Montgomery, *Dirt: The Erosion of Civilizations*, 3-4.

139 Jared Diamond, *Collapse: How Societies Choose to Fail or Succeed* (New York: Penguin, 2011).

140 Diamond, *Collapse: How Societies Choose to Fail or Succeed*, 288.

a further example of self-sustaining and ultra-democratic, bottom-up agricultural practices of the highland peoples of New Guinea. This is a steeply sloping, high rainfall environment with high population density that requires condensed fallow phases or continuous cropping. To maintain soil health, the New Guineans utilise high volumes of organic matter compost (some 16 tons an acre) and rotation of nitrogen-fixing crops, while soil surface is covered with mulches and fertilisers. They too employ agri-silvi-culture practices, with tree species fixing nitrogen in the soil, while their leaves add carbon and nitrogen. The highlanders have been present for around 46,000 years, with agriculture being sustained there continuously for some 7000 years.

Earth-assemblage

When dark-earth is atomised as small-scale molecules of precious geo-biological matrix – tumbling through the upper atmosphere, precipitating down, making red-Mars landscapes out of Siberian snow-scapes or coursing in a river made brown with ancient living topsoil – it is separated from itself, losing mauri or the force of life-connection. Earth, papa, is not singular. It is aggregate, processing as a concerted collective. Plant life is bio-geological, the dermal layer of earth's chthonic matter that protects and connects: The fibrous network of above-earth vegetation layers over papa, enabling the mauri or connectivity of the earth-assemblage. Beneath-ground, subterranean roots further build connectivity while black-carbon structures in soil life support a host of micro-organisms. Animal life, too, comes from and becomes-earth or sea, but has a different relationship to the geo-sphere rendered by its mobility through earth, sea or sky. Plant-life's direct connection to the chthonic renders a symbiotic relationality with earth, as earth. The third element of the carbon triad, earth, then, is *both* the bio-geology of plant-life and the geo-biology of a dark-earth. Dark-earth is the decaying, de-composing, de-forming of biological life into the geo-biology of the humus-sphere. Re-composed, new iterations of bio-geological life-forms arise (whakapapa) anew out of the geo-biological matrix. Earth practices for wellbeing (as discussed in relation to Tamaki Makaurau, the Amazon, Tikopia, New Guinean highlanders) attend to this fundamental connectivity of the biological and the geological, to enable Earth-wellbeing and life-futuring.

Urban as Geo-Biological Drift

How does the concept of life as geo-biological phasing (drift) coincide with the analytics of Anthropocenic walking? Insurrectionary pedestrian utterances find an ethics for place as geo-biopolitics, where whakapapa as temporalised field of relation to the world allows us to understand that place is our ancestor and our future. It is us as we breathe, swallow, deliquesce, live in relation to the livingworld.

Urban wellbeing comes through attending to movement, to geo-biological flux, recognising that there is *no* inert Earth, no inanimate. The practice of urbanism is a practice of being-with, and an attention to relations and mobilities and agencies of multiple Anthropocenic actors: Human, animal, mountain, molecule.

When thinking urbanism via a politics of passage and wellbeing, attention comes to how we literally incorporate the city, breathing it, drinking it, eating it, absorbing its materiality through the exchange surfaces of skin, nose, mouth, lungs. With such an orientation in mind for the designing of the city, one imagines an urban streetscape whose air is cleared by urban trees and green walls and rooftops; while storm-water channels have functional planted wetlands that clean and incorporate water within the geo-spherical context of the hydrological cycle (wherein global water supplies circuit between earth, sea, and sky in a self-cleaning and maintaining process that has been continuing for some billions of years). In such a context, urban mobility systems and built infrastructures utilise geo-logics, tapping into the vast energy flows available in solar radiation, and the kinetic energy embodied in wind and sea movements. In the context of wellbeing, the central condition of the life-field as a composition (or assemblage) of multiples becomes a key urban design factor: Design for social cohesion, and for bio-philía. Indeed, in the context of the geo-logic of this study, E.O. Wilson's concept of bio-philía is extended in a concept of geo-philía, which includes earth, sea and sky-scapes together with the biological strata from the geosphere.¹⁴¹

If we consider the city as sub-field within planetary immanent cycles of resources, we can start to think about how the city can act as connector, rather than as lacuna or gap, in a field that is otherwise a vastly activated network and connected system of energy and resource transfers. The urban field receives the same sunlight per square meter as rural fields; it is exposed to wind, and its ocean waterfronts present harvestable kinetic energy. As urban agglomerations have grown, connecting up multiple smaller townscapes, often former forests or savannah, wetlands or rural agricultural lands have been converted into the urban. As the urban field increases there is less and less land to provide amenity for non-humans, or to produce food or other resources for city-dwellers. In an *urban geo-logic* anything that becomes part of the geosphere/living world (urban infrastructure) or moves freely through the geosphere – the wind-filled belly of a plastic bag is a useful image here; or the massive plastic gyre in the Pacific Ocean; or images of plastic fibres in honey taken

141 On 'biophilia', see Edward O. Wilson, *Biophilia* (Cambridge, MA: Harvard University Press, 1986).

through a microscope – within the immanent cycling of a geo-biologic, should be designed to account for how it will be either neutral-to-wellbeing or actively enhancing. For an *urban exo-logic*, anything that is fundamentally transcendent to geospherical material flows – in that it reduces the mauri, life-vitality of the life-field – is designed to operate within its own closed cycle, and requires us to *de-design* it, to remove it from the geosphere entirely.

Thinking the city geo-logically, understanding that the urban is part of the life-field of the living-world, is foundational in the era of the urbAn/thropocene. Such a mode of thinking opens up a vast opportunity-field, as it becomes apparent that cities can access the extreme quanta of energy that flow through the living-world daily, whether in the form of solar energy, or in the kinetic energies of wind and sea, or in embodied bio-mass. The chthonic (or fluvial as sea-levels rise) foundations of the city become understood not as an inert platform but as radical activation, a site of industry, consumption, excretion, transformation and emergence that has enabled the life-field over aeons (for the last 4 billion or more years). Thus, urban foundations (whether earth or sea) can be engaged for their heat energy or to store thermal energy; they become a circulating composition, returning geo-logically designed materials back into the immanent cycles of the geosphere; they become a site for urban agriculture or for geo-philic self-sustaining 'natural' ecologies. We live *now* in an urbAn/thropocene where geology is increasingly inscribed by ever growing urban zones and will do so into any foreseeable future. The future of urbanism relies, perhaps, on translating our thinking on the urban-as-cultural into a thinking of the urban-as-geological, as immanent field that is generative and productive, that contributes life-amenity in ways that are sensitive to and accord with the life-amenity of the non-urban world-field.

Chapter 6

Counter Practices For A Living Urbanism

1. ECO-ONTOLOGICAL TURNS

Becoming Visible

This is not a chapter *about* design. It is a chapter *of* designs, what I call 'counter' practices to design. But, I have already outlined via various critical thinkers the snare involved in precisely presenting something, anything, that purports to be making readable, making visible, the strategic moves we require in order to 'progress' things. Let me go over that 'snare' again, and then discuss my tactics, my 'blindness', my fragments as counter practices to those carbon phantasms we wandered into towards the end of Chapter Five. There are a few things on my agenda here. One is to recap on things previously said. Another is to say something more about design precisely in that context of the snare of the visible. De Certeau spells out the dangers in designing: One suddenly lurches from the political tactics of walking to becoming the tour guide announcing the next instalment on progress. One becomes the voyeur. Design does that. It pronounces but never chatters at pedestrian levels. Deleuze and Guattari spell it out as well inasmuch as any process of deterritorialising more or less has the likelihood of a territorial recoup. But then they also say that smooth space will never save us,¹ which means absolute deterritorialisation, pure nomadism, the vertiginous infinity of pure immanence is equally a dead (nonlife, perhaps) end, which is why I want to reiterate that tactical gesture by de Certeau:

1 See Deleuze and Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia Vol 2*, trans. B. Massumi. (Minneapolis: University of Minnesota Press, 1987) 500: "Of course, smooth spaces are not in themselves liberatory. But the struggle is changed or displaced in them, and life reconstitutes its stakes, confronts new obstacles, invents new paces, switches adversaries. Never believe that a smooth space will suffice to save us."

The long poem of walking manipulates spatial organisations, no matter how panoptic they may be: it is neither foreign to them (it can take place only within them) nor in conformity with them (it does not receive identity from them). It creates shadows and ambiguities within them. It inserts its multitudinous references and citations into them (social models, cultural mores, personal factors).²

Carl Mika alerts us to precisely this concern when he discusses raupapa in its divergent potential ways of understanding things. The divergence, for Mika, is 'nurture' or 'enframing'. Where we see 'papa' we know Papatūānuku, 'earth' or 'earth mother', what Mika considers as being itself, the being of entities, is called. How is Papa called? Or rather, as it is Papa who calls to being, how are we attuned? How is our ear? In whatever we do, attunement to Papa is at stake. Following a co-thinking of Māori decolonising metaphysics and the thinking of Heidegger, Mika points to Heidegger's understanding of our current epoch as one of technological crisis. I discussed this briefly at the opening of Chapter Four. In Heidegger's terms do we 'challenge forth' what it is when we produce, which is to say, when we design? Are we humans 'enframed' or 'positioned' along with all other beings as available for production, as already consumed in production's inventories? Or, are the entities that are 'brought forth' allowed to come to appearance in what they are through producing? For de Certeau, for Deleuze and Guattari, for Mika, for Heidegger and for me throughout what I have been discussing in this thesis, Anthropocenic crisis is a crisis of consumption's producing, of a challenging forth of the earth. This is a crisis of design within which humans are not even intentional instigators, no longer even the subject-substance for whom entities are objects to be represented and used up. The crisis, ontologically, is that this entity, the human, is a thing like any other thing, a piece of available resource within an inventory for production. This is Anthropos-assemblage.

My question, then, is what now becomes of design? Perhaps design is what first needs to be abandoned. But, then, would I not be strategizing that abandonment, designing the de-designing of the world? Heidegger's version of this conundrum is that of willing. Are we able to will the world differently when it is precisely human will that brought about the danger, ontological in its nature, of the will-

2 Michel de Certeau, "Walking in the City" in *The Practice of Everyday Life*, trans. S. Rendall. (Berkeley, CA: University of California Press), 101.

to-will for its own sake.³ De Certeau suggests that every poeticising exists within spaces of strategic voyeurisms of all kinds, that perhaps our tactics exist only as counter practices to strategies of power. The task of a coming design, then, is to encounter raupapa at every moment, encounter the thinking-emergency of Papa, or the call of Papa, as design's 'letting-be' of what is in its rhizomic relationality, attuned to mauri, which means attuned to ora. Even though the institutional contexts within which my design practices take place are necessarily strategic, necessarily transcendently hierarchical, what 'counter' precisely means is to encounter and engage them immanently, which is to say, re-inscribe the bindings, boundaries and hierarchies of what design supposedly holds immutable: function and teleology, or utility and finality. A poetics *connives* against utility and an open connectivity *strives* against finality. Smooth space won't save us but it can be a game-changer. But how will you now read these descriptions and images of a range of discrete projects I am about to outline. Well, on paper they look a little discrete, with their various locales, names, investments, contexts. Yet they overlap, interplay. They happened sometimes in parallel and sometimes one from out of the other. But what are they, these designs? At this point I want to re-introduce something I earlier discussed from Deleuze on Aion and Chronos, on passional bodies, on logics of sense or sensation, and on causes and effects.⁴

For the most part when we discuss design projects we look at images of things made or events happening, read explanations or critiques of them, think of author attributions, expertise in design or things that look like they have been poorly brought into this world. The Deleuze of the Stoics might look at things a little differently. And I think it is necessary to pursue this difference here, for I want you to think about what you are encountering here in these terms. Maybe I'll start with that admonishing that Ian Buchanan gives to those who think a Deleuzian 'assemblage' is something we encounter in the world, like a designed

3 Heidegger pin-points this conundrum in his 1954 essay, "The Question Concerning Technology," as well as in related essays that deal with nihilism and an understanding of Nietzsche's notion of 'will-to-power'. See the collection of Heidegger essays: *The Question Concerning Technology and Other Essays*, trans. W. Lovitt. (New York: Harper Torchbook, 1977).

4 I am referring to my discussion of Deleuze's Stoic understanding of causality and temporality in *The Logic of Sense*, trans. M. Lister with C. Stivale. (New York: Columbia University Press, 1990). See especially the "Second Series of Paradoxes of Surface Effects," 4-6.

thing, in order to ask 'what is that?' or 'how did that come about?'⁵ Are *things* designed 'assemblages', things put together which we can then interrogate? No, it is precisely the other way around. The assemblages are conjectures, planes of immanence that aim to make sense of things we encounter in the world. What, then, *are* those things in the world, outside of the assemblages? Well, they are *passional bodies* and their mixtures. *They are a logic of sensation*. They are chronic, Chronos, and constitute the present of bodily sensations. They are causes that only exist in relation to other causes. Causes of what? Well, of effects of course! Causes are immanent to effects rather than transcendent to them. But effects and causes exist differently, disclose (ontologically we could say, or transcendently) different *times*. Effects are those assemblages, contingent logics of sense, for which there is an infinity of pasts and futures to be brought onto a plane of consistency. Effects relate not to causes but to other effects.

Hence, there are the virtualities of sense and the actualities of *passional bodies*. Now, for the most part when someone scrutinises my design work, he or she locks onto the virtualities, questions of understandings, a logic of sense, rather than to attunements to the *passional bodies* and their mixtures that are the present. I think, for Mika, Papatūānuku is attunement precisely as this sensation. It is not as if virtualities and actualities have no encounter. The mystery, joy, excitement of existence *is* the radical immanence of the foldings and re-foldings of virtualities and what is actual. In thinking about this thesis as a whole, consider whatever has come to appearance up to this point as my plane of consistency of effects, all relating in various ways to other effects, my assemblages. Now come the causes, my passions and *passional bodies*, in their mixtures, my actual designs. And, at the same time (or is that time as radical difference?), they are immanent to those effects. One more thing: Deleuze emphasises that both virtualities and actualities are real. It is not as if one is simply Aionic contingent immaterial thinking and the other Chronic material being. No, they are both real. All this suggests, then, is the complexity of speaking the 'truth' of what is supposedly 'reality'. Hence Deleuze refuses the notion of moving from possibility to what is reality by way of a concept (or a design). Thus, design does not 'propose' what is possible to realise. Design is forever drawn between its logics, those of sense and sensation, understanding and attunement. Both are real.

5 See Ian Buchanan, "Assemblage Theory and Its Discontents," *Deleuze Studies* 9 (3, 2015): 382-392.

Visualisations Installations Assemblages

In order to do something big – to think globally and act globally – one starts with something small and one starts where it counts. Practice, then, is about making the ordinary special and the special more widely accessible – expanding the boundaries of understanding and possibility with vision and common sense. It is about building densely interconnected networks, crafting linkages between unlikely partners and organizations, and making plans without the usual preponderance of planning. It is about getting it right for now and at the same time being tactical and strategic about later. This is not about forecasting, nor about making decisions about the future. But it is about the long range, about making sure that one plus one equals two or three, about being politically connected and grounded, and about disturbing the order of things in the interests of change.⁶

Chapter Six focuses on design interventions undertaken during my PhD candidature, testing out counterpractices to the Anthropocene. This discussion may be considered as a transversal sectioning or folding through the terrains of the previous layers of the thesis. Whakapapa is enacted as a process of becoming-earth in this work in various ways. Attention to how geo-biological (bio-geological) life is a temporal phasing out of the geotic asks for a geological temporality to urban thinking – concern for futurity – along the trajectory of whakapapa's *iter*. Mauri, life-field, is central to the thinking of the urban as interconnected fields in motion. An ethics for mauri-ora infuses this urban practice which aims to counter the manifold toxicities and dysfunctions of the Anthropocene. Analysis and design-for-wellbeing attend to intersecting relations, to life-as-field, a vital materialist analysis concerned with how things (people, water, plastics, petrol, dioxins) move through a city and how they collect or cluster together as crowds or assemblages (birds, plants, microbes, people). Mauri-ora, connectivity for wellbeing, is primary for this chapter, providing a rhizomatic platform that links diverse and transversal conditions. My design approach is Indigenous-Māori *and* it also acknowledges the important eco-philosophical work undertaken by Timothy Morton, as well as the 'ecosophy' done by Félix Guattari. Morton's important notion of mesh corresponds to how I have engaged with mauri and mauri-ora: "Ecological science holds that all life forms are interconnected, but what are the philosophical and cultural implications of this interconnectedness? The mesh is even more deeply

6 Nabeel Hamdi, *Small Change: About the Art of Practice and the Limits of Planning in Cities*, (London: Earthscan, 2004) xix.

interwoven than biocentric ideas such as the web of life, because it does away with boundaries between living and nonliving forms.”⁷

In the sense that Morton uses the term, I consider design foremost to be mesh-work. Mesh-work always already exceeds our capacities to grab hold of its boundaries, spatially and temporally. Mesh-works spill and leak. It is no coincidence, then, that one of Morton's subsequent books is titled *Hyperobjects: Philosophy and Ecology after the End of the World*.⁸ Morton, like Ray Brassier, is a speculative realist for whom 'hyperobject' refers to the fact that any thing exceeds our capability to know it, and especially daunting is an *object* such as the Anthropocene. Things exist and are relational outside of human understandings or capacities to understand such relational thingness. Things remain a mystery, even (or especially) in their knowing. For me, design's moments of encounter are that excessiveness registered as sensation, rather than as sense. Our world is sublimely uncanny *before* it is striated to fact. Design's future 'task' is sublimity. And for Guattari there is another refrain, that he develops within his three ecologies: Individuated mind, socio-cultural structures, and the physicality of living things.⁹ The relations between these three intertwining ecologies are termed by Guattari *transversality*: “More than ever today, nature has become inseparable from culture; and if we are to understand the interactions between ecosystems, the mechanosphere, and the social and individual universes of reference, we have to learn to think 'transversally’.”¹⁰ Transversality is boundary-jumping, removing of disciplinary borders in order to reveal connections. Guattari give the name *ecosophy* to such a nomadic, deterritorialising practice. A coming task for design thinking is to be ecosophic, to be transversal in method and sublime in affect. Transversality and sublimity are modalities of passional bodies and their mixtures: causal bodies of affects, rather than of effects. How do bodies exist on such and such a plane? Of what are they capable? These are planes of composition (aesthetics) rather than

7 Timothy Morton, “The Mesh,” in *Environmental Criticism for the Twenty-First Century*, ed. Stephanie LeMenager et al. (New York: Routledge, 2011) 22.

8 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World*. (Minneapolis, University of Minnesota Press, 2013).

9 Félix Guattari, *The Three Ecologies*, trans. I. Pindar and P. Sutton. (London, UK: The Athlone Press, 2000).

10 Félix Guattari, *The Three Ecologies*, 135.

planes of function (science) or planes of concepts (philosophy).¹¹ They are mixtures, meshes, entanglements, and they are uncanny in their coming to appearance, their *aesthesis*, their look, their *ira*.

Counterpractices have no large-scale strategic agency and hence must continually operate at the margins of what is established. Thus the interventions are tactical, in de Certeau's sense of becoming contingent, responsive, connective, creative. The tactical enables subversion within an Anthropocenic epoch produced by a seemingly inevitable lockdown by large-scale petro-political-economic entities and the exigencies of dwelling on a planet of finite expanse. Even when linked with institutions having strategic or large-scale agency, such as City Councils or universities, interventions have traction only through their capacities to subtly shift potentials or incline practices or strategies, tactically eventing 'smooth' spaces. Accounts of the agency of small change, offered by participatory planner, Nabeel Hamdi, resonate with my practices and processes, my limitations and finitude. I have engaged *City Councils*, *Regional Libraries*, *The Ministry of Business, Innovation and Employment* and my own academic institution in a range of public and corporate situations. Children are a key group given my emphasis on futurity. The work engages the actual, testing out interventions at small scales, as design-sensing or sensitising. Elements of these counterpractices align with urban intervention practices defined as "Tactical Urbanism" by *Street Plan Collaborative* members, Mike Lydon and Anthony Garcia.¹² The works I present here are in three registers: *Tactical visualisations* in localised sites that speculate on alternative near-futures; small-scale localised *tactical installations* in public places that test out and signal change potentials; and *tactical assemblages* that aim to link together interventions or actions across an urban field.

But with each of these names have I not now undone much of what I have just outlined regarding the scopic and 'blind' walking, or trying to maintain a difference between recounting a logic of effects and a making-sense of encountered bodies, or emphasising transversality and sublimity as method and affect? Moreover, it seems I use the word 'assemblage' precisely against the grain of my earlier better judgement. Actual designs are not themselves assemblages in Deleuze's sense of

11 See a summary discussion of these three planes and their relationality in Deleuze and Guattari, *What is Philosophy?* trans. G. Burchell & H. Tomlinson. (London & New York: Verso, 1994) 197-199.

12 See Mike Lydon & Anthony Garcia, *Tactical Urbanism: Short-term Action for Long-term Change*, (Washington, DC: Island Press, 2015).

that notion. Tactical, yes, I see that as inference to something countering strategy. So, my actualising of projects is makeshift and subversive, fragmentary, partial, without accounting for functionality and finality: allegories for an urbanity in ruins as much as inclination to something more connective, more alive. In truth, visualisations, installations and assemblages need to be encountered transversally, across the ecologies of mind, matter and the collective. In fact, they each name the same thing: ecosophy as deterritorialising. To visualise is to discover an horizon of the invisible; to install is to take place as provisional, to enown locale as one's non-belonging; assemblages are fragile stratifications, formalising matter and finalising un-finalised functions. But, as we discovered back in Chapter Two, each stratum has its body-without-organs of a surface that opens to what is indefinite. Assemblages, for all that, are conjectures, contingencies. I want to make it complicated, these readings, even if what is being read seems simple enough: Morton's 'hyperobjects'.

Before I get underway, one final thing: I'd like to outline, in brief, the design practices that came before. I trained as an architect at Victoria University in Wellington, Aotearoa. My final-year project was conducted, perhaps a little transgressively, as a collaboration between four women who were friends. This collaboration comprised a rethinking of the city of Wellington, the nation's capital, through a set of speculative architectural interventions within Wellington's Civic Square. My intervention focused on manifesting Māori spatial narratives and practices through carved architectural landscapes. The project was feminist in that it acknowledged how genders are structured in civic spatialisings, in ways that define their differences. In 2000, I started my own design practice, *Archiscape*. The architectural landscape of the proto-urban pā was important as an Indigenous-Māori counter practice to colonial understandings of the civic as definition of social or public spacing. These were sustainable or future-focused Māori spatial practices towards Papatūānuku. An earth-making matrix for living was central to this practice, an orientation around which all design turned. Three domestic design projects explored different conditions of pā-spatiality as sensing, differentiating iterations. One engaged the transient qualities of light-weight structures; another dug into the ground, forming platforms for living within earth-as-matrix; another, Tokatea, combined these two, as hollowed ground with lightweight, performative skin.

I combined architecture practice with teaching, with design tutoring at university. In 2006 I started full-time as an academic. My intent in this was to step outside of architecture's service to individual (often wealthy) client needs, to test out more collaborative and collective practices for sustainability. Though earlier, in 1987, I read about climate change, at that time still something 'new' to discuss,

notwithstanding its critical 'presence' since the late 1960s *Club of Rome* report.¹³ In the 30 years since, while I have tried to engage with ecological issues, I often felt impeded by architecture's institutional structurings. In moving to university teaching and research, I aimed to focus on ecological crisis and design approaches that learnt from Indigenous-Māori concepts of mauri-ora, whakapapa and ira. In 2010 I began the first of my externally-engaged, sustainability-oriented research studios. I've since run urban research-lab studios with Wellington City Council and then with Auckland Council, that test out transformative strategies for urban wellbeing. Student work has been published as part of Council exhibitions or documents. In what follows, I begin discussing what I have termed 'tactical assemblages' though transversally they are equally engagements with taking place as installation, with raupapa as nurturing, and with horizons of visibility, with ira as a coming-to-appearance of what is.

13 See Donella Meadows et al, *The Limits to Growth: A Report for The Club of Rome's Project on the Predicament of Mankind*, (New York: Universe Books, 1972). The book compiles research undertaken at MIT on the findings by the Club of Rome on future scenarios for the planet. They offered, in summary, three scenarios. (i) Without any change in global production, population and consumption of the planet, the planet would catastrophically fail in around 2070. (ii) Growth trends in 1972 could be altered for sustainable ecological and economic futures. (iii) The sooner this happens the better the chances for survival. The book was vilified by numerous experts for the next thirty years. In the first decade of the twenty-first century the data analysis was carefully scrutinized using far more sophisticated computer modeling than was available at the end of the 1960s. As well data for the interceding thirty years was available. Researchers in 2000, 2010 and 2014 concur that the predictions and future prognoses of the 1972 report are accurate. Scenarios 2 and 3 have now been lost to us.

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Tactical Assemblages

WHAKAPAPA | DESIGNING RELATIONS

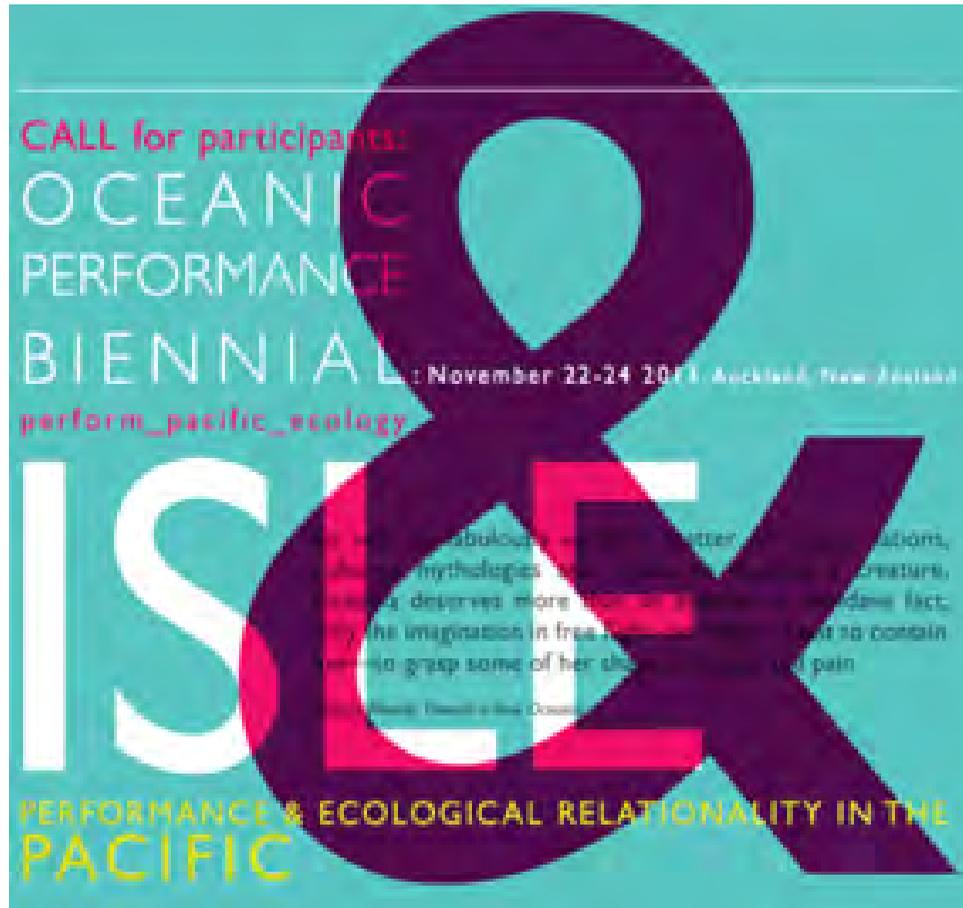
Urban Research Lab, Massey University, Wellington /
PUNA Waipapaora, Emergent Ecologies Lab, Auckland University of Technology
2010 – 2018

Building discursive platforms such as these Labs engaged design teaching and research studios, and publicly presented design research. The Urban Research Labs in Wellington, working institutionally across Massey University and Wellington City Council, became the PUNA Waipapaora | Emergent Ecologies Lab in Auckland, working across Auckland University of Technology and Auckland Council. As in Wellington, I continued with externally-engaged design teaching and research studios for undergraduate and postgraduate programmes, addressing transformative urbanism. External partnerships were formed with iwi, industry, and City Council. Emphasis was (and is) on holistic, connected thinking of the urban, that attends to diverse conditions of the social-constructed environment. There is emphasis given to how entities – skateboarders, plastics, birds, energy, water – *move* through cities or how cities *are* such motility; how entities – plants, children, solar panels, electric cars – *energise or grow*.

Wellington's pop-up gardens became crowd-collectors, gathering as well the attention of urban researchers or urban designers with similar interests. There was agency in how these spatial interventions activated engagement and connection. On moving to Auckland and AUT, I responded to a call by *Performance Studies international* (PSi), for regional research clusters who would work creatively and performatively on issues of climate change. A series of Biennial events grew from this with foci on the Pacific region and Tāmaki Makaurau (Auckland) as a key Pacific urban centre. The Biennial was to be a platform for critique and re-imagining the cultural, social, political and environmental ecologies of the Pacific and of Tāmaki







Makaurau. The Biennial invokes performative tactics – urban installations and events – to ‘heat-up’ dialogue and action for change. *Performativity* is multi-modal attracting, connecting and communicating in playful, affective ways. The Biennial programme included performance events, workshops and hui (gatherings and discussions) that brought together performance practitioners, eco-activists and academics to address the complexities of the Oceanic in Anthropocenic climate change.

The duration or endurance of Biennials is important for commitment to what is ongoing, to a future-to-come, and to tactics of sensing responsive iters (whakapapa) as transformational design process. John Thackara addresses the agency of Biennials: “Biennials have a more transformative role to play as catalysts of the system change we need. ... Biennials are well placed to evaluate a region’s solar and ecological assets. In doing so they can tell an alternative story about the

relationship between humans and the places we inhabit ...¹⁴ Thackara notes how the socio-cultural and creative dimensions of Biennials, as spaces of exploration and interaction, perform difference and enable transformation: "Artistic practice is uniquely powerful in changing the threshold of what is seen and unseen ... shared public events ... can be retooled as bridges and connectors that foster reciprocal relationships between diverse actors united in a common goal: the long-term health and vitality of their place."¹⁵ The Oceanic Biennale connected design schools with artists, creative institutions with City Councils, activists with local communities. This is a powerful way to create conditions for dialogues about change.

14 John Thakara, "Biennials and System Change," <http://thackara.com/place-bioregion/biennials-and-system-change/> Accessed May 2017.

15 Thakara, "Biennials and System Change."

Biennale 1: ISLE&
 November 2013
 Tamaki Makaurau
 Wynyard Quarter



The inaugural Biennial, *Isle&*, was located in Tāmaki Makaurau/Auckland, in what was then recently named the Wynyard Quarter. In urban revitalizing plans of the early 2000s, central Auckland was ‘quartered’, one such segment being the ‘education quarter’ comprising the two city-based universities, with adjacent public library and art gallery. The Wynyard Quarter is waterfront land, formerly industrial docklands with some warehouse sheds now chic cafes, bars and restaurants, along with grain siloes, now gallery spaces and a large tract of industrial oil tanks awaiting removal and inner urban ‘revitalisation’. Needless to say, the entire precinct is ground-polluted with a century of heavy-industrial residues. The land itself was mud-flat mangroves in the nineteenth century and constitutes ‘reclaimed’ foreshore for maritime industries. City Council saw the ‘synergy’ in cultural revitalization of the precinct with a Biennale, even if the ‘concept’ of the event would call into question some of the grounding strategies of waterfront gentrification that seemingly eluded any planning sense for taking into account something as important as sea-level rise. In fifty years, Wynyard Quarter may well be below high-tide on a good day. Auckland Council’s Waterfront Auckland (now Panuku), hosted the event at the Wynyard Quarter and contributed to the ‘quality assurance’ process through peer review. Connectivity was a grounding precept of *Isle&* which addressed the Oceanic as connective field, constituted as sea and island constellations.

The Oceanic is constant flux, diverse and differentiated as are its 25,000 islands, as extensive and cohesive as Te Moana Nui a Kiwa, its vast connecting ocean. The

homophonic play in the title, "Isle 'And'" is more than simply a 'catchy' way of saying Island. The 'and' is tactical connivance with respect to our Western proclivity to binaries, to 'either/or' scenarios. Is this an island or is it a sea? Is this land or water that we live on? Pacific thought encompasses the inclusive 'both/and' rather than the 'either/or'. We go back to our discussion in Chapter Two on classical Chinese thinking, on the difficulty in shuttling not between two perspectives on the one reality but between two seemingly differing realities, paradigmatically different. Islands & sea are interrelated entities, nodal networking and spacings of interstitial flows. Islands are relational conditions and sites of exchange. *Isle&* explored ecologies – cultural, political, economic, biotic and abiotic – of Oceania and asked, through contemporary performative practices, how to relate to Oceanic worlding.

Researchers and artists involved include:

Johannes Blomqvist, Chris Braddock, Sean Coyle, Soren Dahlggaard, Paul Fagamalo, Fiona Graham, Mark Harvey, Christina Houghton, Simon Howden, Cathy Livermore, Alys Longley, MAP (Carol Brown, Dorita Hannah, Russell Scoones), Briar March, Jonathan Marshall, Sharon Mazer, David O'Donnell, Pacific Sisters (Ani O'Neill, Rosanna Raymond, Lisa Reihana), Sarah Jane Pell, Mark Pulsford, Katerina Teaiwa, Ura Tabu Pacific Dance, Brydee Rood, Olivia Taouma, Bert van Dijk, Rewa Wright, Amanda Yates. Selection Panel – Performance: Mark Jackson, Vera Mey, Albert Refiti, Frith Walker. Paper Reviewers: Chris Braddock, Dorita Hannah, Mark Harvey, Mark Jackson, Vera Mey, Albert Refiti, Amanda Yates. Advisory Group 2013: Dorita Hannah, Mark Harvey, Vera Mey, Maria O'Connor, Albert Refiti. Advisory Group 2012: Sue Gallagher, Dorita Hannah, Rachel Shearer. Production Manager: Emily O'Hara. Coordinator: Rachel Shearer.

Creative Director & Curator: Amanda Yates.

Biennale 2: SEA-CHANGE

July 2015

Rarotonga

Cook Islands



The second Biennial, staged in Rarotonga in 2015, was part of *PSI's* year-long, global performance event and conference *Fluid States: Performances of Unknowing*. As the Oceanic region's contribution to *PSI's* world-wide conference, the 2015 Biennial connected with an internationally dispersed body of performance works addressing site-specific themes of the unstable, mutable, adaptable, and fluid. *Fluid States* aimed to destabilize the fixity of Western first-world metropolitan centres via exchanges among artists, thinkers, activists and academics from sites too often considered peripheral to a constructed globalized centre. The fifteen regional clusters followed a trajectory from global concerns to local issues. Sites included the Pacific, North Atlantic, Asia, Australasia, Middle East, Africa, Europe, North and South Americas.

With the Rarotonga event, sea was recognised as performative site of a complex changing global ecology. Multiple performances occurred across land-&-seascapes of the island. Local communities, artists and climate change scientists met with international academics and artists. Elders from outer islands discussed climate and ecological change with professors from New York University and leading international performance artists, in workshops or as part of performance walks or events. The event was founded on a deep and culturally specific engagement with, and dramaturgy around place, led by island curator, Ani O'Neill, and event curator, Dorita Hannah. The Cook Islands Government and Tourism Board co-funded the event, and local communities contributed and attended the 3 days of performances, installations, films and discussions.

OCEANIC PERFORMANCE BIENNIAL

perform_pacific_ecology

2015

a regional cluster event for the Fluid States globally dispersed conference Performance Studies International (PSI) #21

SEA-CHANGE PERFORMING A FLUID CONTINENT

The Oceanic Performance Biennial is an emergent platform engaged in critiques and re-mappings of the cultural, social, political and environmental ecologies of this region. Performance operates as a multi-modal tool that attracts, connects and communicates in playful or affective ways and publicly interrogates ecological issues. The Biennial program incorporates free public performance events, workshops and a hot gathering that brings together performance practitioners, activists and academics to address the complexities of Oceanic ecologies. (In an extended sense of the word, 2015 Biennial was held in Auckland New Zealand with the theme of land and dispersed love in the Pacific islands may be understood in relation to the sea, where islands & sea form a connective and relational network.

The 2015 Oceanic Performance Biennial focuses on the sea as a performative site and complex changing ecology and calls for work – performances, film events, installations, performance based workshops, panels, papers – that address a performative ecological, sociocultural and geopolitical nature of the Pacific as fluid continents, region within the globe. Imaginary and contemporary sites of change. As the Oceanic region's contribution to Performance Studies International's world-wide conference Fluid States, the 2015 Biennial links into an internationally dispersed body of performance work addressing site-specific themes of the sensitive, mutable, adaptable and fluid.

Fluid States: Performances of Unknowing is an initiative of PSI (Performance Studies International) that aims to destabilize the fixity of western-centric modes of thought via a year-long globally dispersed conference promoting exchange among artists, thinkers, activists and academics from sites (traditionally considered peripheral to a centralized globalized centre). As multiple islands of across Fluid States fifteen regional clusters will stage a distributed series of events, actions, meetings and performances throughout 2015 that follow a trajectory from global concerns to local issues, sites include the Pacific, North Atlantic, Asia, Australasia, Middle East, Africa, Europe, North and South America. Each regional level an 'island' will launch a 'net' that transports archival material to the following continental, forming a touring exhibition as it goes, and material will also collect to an online interactive archive at www.fluidstates.org

www.emergentecologies.net/OPB www.fluidstates.org
www.facebook.com/oceanicperformancebiennial
www.psi-web.org/detailposts/12598

PSI
 PERFORMANCE STUDIES INTERNATIONAL
 ARTS ACTION

WEDNESDAY 8th July

REGISTRATION AT USP: 10am - 4pm

9.00am Performers and technicians meet at USP (Makea Tinirau Rd. Avarua)

10.00am Registration opens at USP

11.00am Cook Islands Library & Museum Society (across the road from USP) Invitation to informal morning tea and conversations with the '60+ Group'

5.00pm Informal gathering at Trader Jacks (Avarua Harbour)

6.30pm SUNSET PERFORMANCE: Winds of Strain (Gilsion) Informal Dinner at Trader Jacks (extra to conference registration)

Sea-Change: Performing a Fluid Continent: Rarotonga 8 - 11 July

Oceanic Performance Biennial 2015

Contributors included:

Maile Arvin, Daniel Belton and Good Company Arts, Jeanette Budgett, Cook Islands Voyaging Society, Una Chaudhuri, Keren Chiaroni, James Davenport, Rod Dixon, Richard Downing, Linda Erceg, Tabatha Forbes, Geoff Gilson, Tammy Haili'opua Baker, Dorita Hannah, Christina Houghton, Zahra Killeen-Chance, Local Time (Danny Butt, Jon Bywater, Alex Monteith, Natalie Robertson), Diana Looser, Sharon Mazer, Maria O'Connor, David O'Donnell, Short Family Drummers, Talei Smith, Janine Randerson, Tia Reihana, Latai Taumoepeau, Te Korero Maori Dance Group, Lani Teves, Kalisolaite 'Uhila, Linda Waldner, Olivia Webb, Amanda Yates. Island Curator and Co-Director: Ani O'Neill. Event Curator and

Chapter 6: Counter Practices for a Living Urbanism

Co-Director: Dorita Hannah. Student Curator: Janine Randerson. Paper Curator: David O'Donnell. Performance Panel (Stage 2 Full Proposal) Curators: Dorita Hannah, Ani O'Neil, Rosanna Raymond, Amanda Yates and Janine Randerson. Peer Reviewers (Stage 1 Abstract & Papers): Dorita Hannah, Hannah Hopewell, Mark Jackson, David O'Donnell, Janine Randerson, Amanda Yates. Technical Team: Mo Newport, Henry Ah-Foo Taripo. Local Host & Administration Team: Mel Apera, Moko Smith and Alex Guthrie.

Creative Director & Curator: Amanda Yates.

Biennale 3: HEAT: SOLAR REVOLUTION

February 2017

Tāmaki Makaurau /Auckland

Te Uru, Waitakere Contemporary Gallery



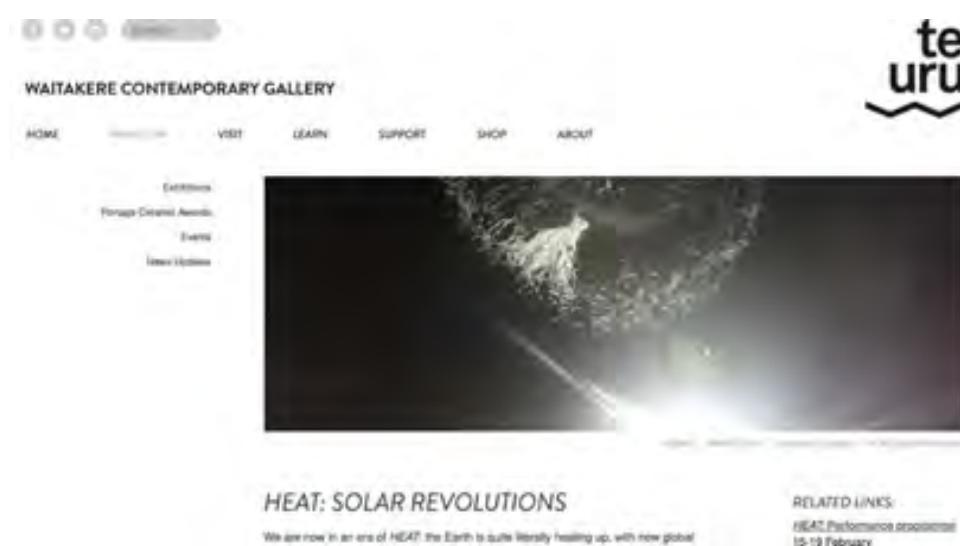
We are now in an era of *heat*. The earth is literally heating up, with new global temperature records set every month and year. There is also a warming of interest in more climate-friendly ways to live. Heat is explored in the third Biennial through a programme of art, design and performance works as a transformative condition catalyzing change towards climate-friendly, low carbon practices. Solar energy is channeled as an artist's medium, as constitutive 'material', like clay or paint, in solar drawings or prints, in solar-sound works, in a solarised visual-essay, a sun-seeking performative walk or as solar energy embodied in wood-fired ceramics. In solar-powered drawings and carbon-negative bio-char drawings, carbon similarly becomes a method or medium of making. *HEAT* presents low-carbon art and performative practices to designate climate-friendly revolutions. Aligned with *HEAT* were a range of community action events including workshops and visits from the local school and kindergarten. The Biennial occurred as a collaboration with Te Uru Gallery, and was presented in association with TEMP, an art and science event, as further connecting of communities of concern. There was a screening

programme, curated by AUT research colleague, Janine Randerson. There was also a performance programme, and a Low Carbon Lab that I curated.

Artists involved included:

Roseanne Bartley, Harold Barton, Mohini Chandra, Sasha Grbich, David Haines, Mark Harvey, Joyce Hinterding, Christina Houghton, Monique Jansen, Maria O'Connor, Tru Paraha, Public Share (Joe Prisk, Monique Redmond, Deborah Rundle, Mark Schroder, Kelsey Stankovich, Harriet Stockman), Janine Randerson, Natalie Robertson, Saskia Schut, Rachel Shearer, Hana Tai, Sam Trubridge, Amanda Yates.

Creative Director & Curator: Amanda Yates.





These *tactical assemblages* explore Anthropos-assemblage through small scale makings that work within institutional constraints. Those constraints, proscriptions and permissions that were required to enact these projects are integral to the agencies that enable change. The three Biennials, in the greater scheme of things, are minor and any agency for change rests not in the works they present per se but in their ability to materialise *and* perform difference as provocations. They operate, then, as tactical adjustments to the everyday practices of the Anthropocene, highlighting potentials or manifesting changes in how we recognise or fail to recognise climate change, in how we access food and water in our cities, in how this everyday may undergo catastrophic change, and in how we move through our cities along with a myriad of other walkers. These interventions are designed for an array of Anthropocenic walkers whose diversity of movements includes the molecular movements of plastics or carbon, flows of electricity or water, the flights of birds and insects. They are designed to enable connectivity in differing registers, whether of human social contact, (geo)biophilia, ecological webs or environmental energy flows. The following 'Tactical Installations' define a series of PhD exhibition works undertaken in 2017. Following these, 'Tactical Visualisations' engage current projects that aim to define how decolonising ontology and vital urbanism are realised in urban design practices and policy.

Tactical Installations

EVERYDAY PRACTICES | GARDENING & MAURI

Revolution Cycle & Solar Revolutions

February 2017

2017 Biennial

Te Uru Gallery

The installations, *Solar Revolutions* and *Revolution Cycle*, the latter comprising *Carbon Cycle Kitchen* and the *Solar Synthesis Station*, variously inscribe or perform energy transformations of the living world. Particular attention is drawn to readily available immanent localised energy. Renewably generated electricity is a key agent in the shift to a more ecologically sustainable energy culture. Vast quanta of energy are available daily as a result of various movements of air, water, solar-emitted photons (a quantum of electromagnetic radiation or 'light'), and in-earth thermal gradients. These installations operate in different ways to foreground energy and material flows emphasising flows of photons, electrons, and carbon

molecules. An ethos for connectivity is in play. This ethos is composed of multiply-encountered desires to activate neglected immanent energies. Those desires and energies emanate not only from recognised *geotic* potentials, but also from the biotic potentials of local communities, schools, gallery sites and local artists.

Different Mobilities: photons, electricity, carbon dioxide, water

As a writing device, *Solar Revolution* literally draws onto thick A0 cartridge connections between solar energy agency and inscriptive carbon presencing, utilising a charcoal stick. The installation is a relational construction that brings disparate, differentiating agencies into adjacency. Firstly, there is the agency of solar radiance as it energises and catalyses life activity within an otherwise closed-Earth system, and within the circular microcosm of this solar-activated *thing*. That closed system is opened through eco-ontological turning: Photons originate in fusion reactions within the sun, at a million degrees Kelvin or more. They exit the sun's surface to radiate outwards. Photons, emanating 150 million kilometres from Earth, are the energy base of the biosphere. Secondly, there is the agency of the photo-voltaic cells that 'translate' solar radiance into electrical energy capable of driving a small engine. In the context of electricity generated via photovoltaic cells, photons hit the silicon atoms of PV cells, transferring their energy to those atoms and removing their electrons. These electrons are then coalesced via an electric field into a current or channelled field of 'electricity' or flow of charge. Thirdly, there are the rotational components with their clockwork-like notched gears. These bring into resonance the torque of a small engine and a larger rotational circling of



the object's stylus-device. The installation is interactive, *performing* the solar and attendant diurnal and emergent flux caused by scudding clouds, driving rain, solar angles and planetary rotation.

Solar Revolution performs solar radiance over the course of a day, as durational drawing. This performance is repeated five times over the five days of the performance programme at Te Uru (15-19 February 2017). On each day of the performance programme, the previous day's solar inscription is installed, these drawings measuring time on the gallery wall as a daily increment of solar affect. These circular *scripts* shift in intensity as a measure of solar radiance, or monsoon-like rain: Difference and repetition traced in darkly circling or finely marked lines. The work indexes solar and planetary oscillations via these daily tracings of charcoal. The work gives witness to an incipient socio-solar revolution as daily processual engagement with environmental agency. Predictably enough for a project titled *Solar Revolutions*, the duration of the installation coincided with periods of torrential rain. Such destabilising extreme weather is an adversity package as gift of climate change. Inscriptions went from a partial half-moon, then a dark circle (full sun), followed by tentative tenuous circles (more days of rain). Drawing device, drawing and weather connected as anthropogenic artefact. The revolutionary capacities of the solar also drew out a pedagogical framework in workshops, as well as artist and Te Uru Learning Centre talks to visiting school children.

Concept	Amanda Yates
Artists/Designers	Harold Barton and Amanda Yates
Craft/Construction	Harold Barton
Construction assistant	Alex Guthrie

Revolution Cycle | Solar Synthesis Station

The *Solar Synthesis Station*, like *Solar Revolution*, attends to an immanent interconnected cycling, expressed in multiple aspects of its construction as linking cycles, circles, and intersecting ecologies. Large timber wheels enable a literal cycling to occur as this mobile planter relocates. Like *Revolution*, this unit registers solar energy, in this instance through an elevated solar panel that, again, drives a small motor. This motor, in turn, drives a rotating cylinder, a second-order turning, that couples a third cycle wherein solar affect, intensity or flux is transcribed through an audio device that audibly expresses increasing rotational velocity or torque. This solar station enables a *synesthetic* encounter with solar radiance through sound.



Photovoltaic cells are poor 'copies' of the photosynthesising agency of plants. The *Station* foregrounds the vegetal energy of food plants and the extraordinary agency of photosynthesis cycling as it transforms light energy (photons) into chemical energy, synthesizing carbohydrate and sugar molecules, and oxygen from carbon dioxide and water. A wall diagram outlines this transformative climate-friendly energy process as component to a performance of carbon-consciousness. Photosynthesis is oxygenic, that is, it produces oxygen and this process acts in counterbalance with the respiration that all oxygen-breathing organisms undertake. Photosynthesis strips carbon dioxide from the air, recombining this and water molecules into glucose sugar molecules.

Revolution Cycle | Carbon Cycle Kitchen

Like the *Solar Station*, the *Carbon Cycle Kitchen* is a mobile installation composed of various connecting cyclical components. The object functions essentially as a device whose agency is focused on change. It comprises three relational constituents: A performative architecture as mobile wheel-based structure; a collective of carbon-based vegetal life; and an interactive element as explanatory wall diagram and table for workshops. With its elevated water vessel, stratified layers of planting, and table attachment, the unit becomes a micro-kitchen celebrating food production and the mobility of carbon atoms as they shift, due to the energy of photons, from gas to matter. The work speaks to the carbon-cycle process that drives organic life on the planet.



The wall diagram 'performs' carbon consciousness, describing how carbon-rich soil as growing medium, is also a medium for climate-friendly carbon storage. Bio-char, a kind of charcoal that significantly increases in-soil carbon-fixing, demonstrates an approach to carbon-storage. The *Carbon Cycle Kitchen* hosts a bio-char gardening workshop and, over the course of the five days of the performance programme, an artist-in-residence draws with bio-char. These carbon inscriptions are accrued daily to the wall of the *Low Carbon Lab*, indicative of sustainable carbon-storage, rather than Anthropocenic air-borne carbon condition. Carbon, as matrix for mineral and organic life and as principal agent of climate change, is vital to all three works. It is literally inscription of carbon on paper that is a scaled and differentiated circular tracing of Anthropocenic atmospheric carbon. It is immanent carbon cycling occurring as kale and beetroot plants in the *Carbon Cycle Kitchen* that grow, or overripe strawberries that fall and decay into the soil of the *Solar Station*. It is also carbon-neutral solar activated sound issuing from an acoustic tumbler on the *Station*.

As a collective, the three installations model immanence as orb, orbital, circular loop, cycling, as repeating and differentiating. Physical revolutions, discs, tumblers, wheels, and circuits or cycles of flow, meshing cogs, photo-voltaic panels, carbon cycles, perform vital materialist thinking and disclose, as ontological horizon, agencies and ceaseless interactivities of our living-world. This circling echoes the rotational velocity of this planet spinning on its axis, creating day's orientation to the sun, and night's orienting away. This cycling traces oscillations of this bounded globe around its sun, on its invisible tether of gravitational force.

Artist/Designer	Amanda Yates
Craft/Construction	Harold Barton
Construction assistant & drawing technician	Alex Guthrie

Tactical Visualisations

EVERYDAY WALKING | LEARNING LANDSCAPES FOR WELLBEING

Arawhenua | *Landbridge* (Linear Park, Bridge As Park)

Feb-April 2017

Te Uru Gallery

Conceptualised as a component of an urban walking network, *Arawhenua* (*Land-Bridge*) is a speculative investigation into the making of ecological urbanism that

attends to the mauri, the life-force, of our urban worlding. The project is proposed as an extensive walkable landscape that links Auckland city's Albert Park with AUT University's city campus and includes low-carbon 'learning landscapes' that model urban change. There is an existing pedestrian bridge making this connection. It is an instrumental engineered device, spanning a roadway. It is little used despite the large student population at AUT who would benefit from the access it provides to the inner city's historic Albert Park. The bridge is in fact a barrier, voiding the mauri of the locale, inhibiting wellbeing. Unlike the existing structure, *Arawhenua*, as an infrastructural connective architecture supports epiphytes and sun-seeking students, stepping down to an activated socio-ecological landscape that creates habitats – bench seats, vegetable gardens, fruit trees, native plantings, micro-wetlands – for a multi-species array of inhabitants – plants, bees, birds, and people.



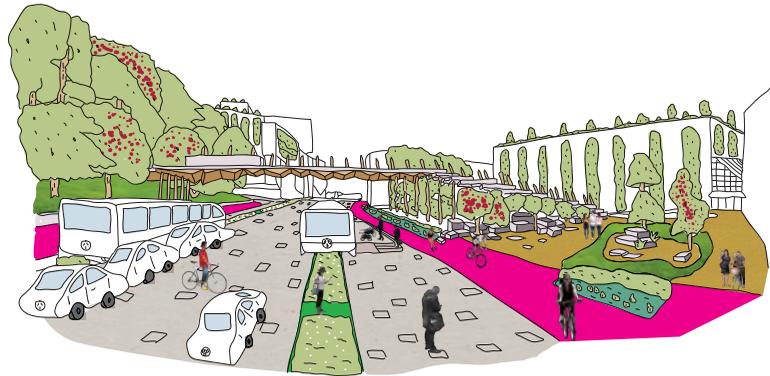


Chapter 6: Counter Practices for a Living Urbanism

puna : Future
wai : Environments
papa : Research
ora : Network

an urban activation
lab for indigenous
ecologies

a network for future thinking,
disruptive technologies, urban ecologies and
health environments



Albert Park to arawhenua /
AUT land-bridge

Near future urban visualisation:
walkable urbanism and
low-carbon learning landscapes

// electric vehicles, autonomous
vehicles displaying flocking
behaviours = car-trains and road
diet, transport-as-service,
car-share

// autonomous bus-tram,
bee-lines as 'tram'-lines [linear
gardens For The Love of Bees]

//local renewable energy
generation [solar paint, solar roof
tiles, solar glass]

//functional wetland, biodiversity,
urban food forests

//green roofs and walls for
reduced Urban Heat Island effect

Arawhenua / landbridge

Learning Quarter low carbon learning-landscape / near-future visualisation

puna : Future
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Albert Park to arawhenua /
AUT land-bridge

Near future urban visualisation:
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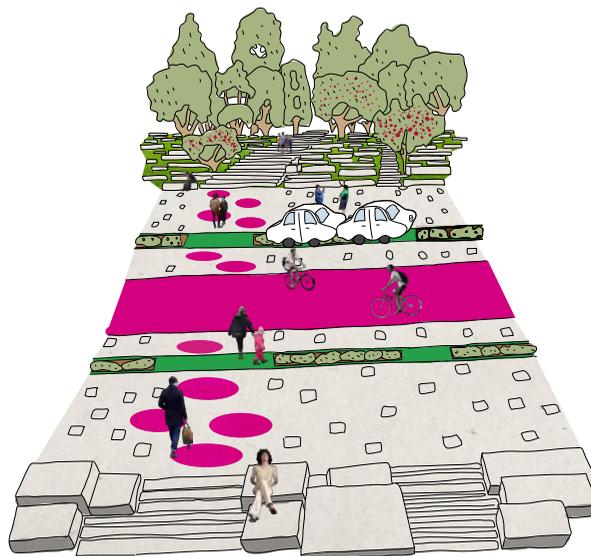
//functional wetland, biodiversity,
urban food forests

//green roofs and walls for
reduced Urban Heat Island effect

Arawhenua / landbridge

Learning Quarter low carbon learning-landscape / near-future visualisation

The landscape contributes to local resource flows in a series of significant ways, such as the slowing and cleaning of storm-water, lowering of urban heat island effects, remediating air-borne pollution through planting, and generating energy and food. As a small-scale speculative vision for the making of urban living-landscapes that are generative of resources and regenerative in remediating waste, returning native habitat, and repairing toxic soils, the project aims to refold a vital materiality into our urban landscape. The project is at concept stage only, and has been developed in collaboration with landscape architect, Nada Stanish, and spatial designer, Alex Guthrie. As part of an Anthropocenic counter-practice, the project has been presented to AUT Estates and to the Auckland Council and Auckland Transport as a potential collaborative design intervention and as mediator for discussions around urban wellbeing. The visualisations are generated as discussion documents for engagement with these local institutional bodies. The Council has a Low Carbon Auckland Strategic Action Plan, launched in 2014. The Plan focuses on five areas: Travel, energy, built environment/infrastructures, zero waste and environment in relation to natural carbon assets. 2016 saw the release of the first Low Carbon Auckland Annual action implementation report that declared actions taken and forecasted key activities for the next year. Auckland has recently joined the C40 Cities Climate Leadership Group, an international network focused on urban action and responses to climate change.



puna
wai
papa
ora

Future Environments Research Network

an urban activation lab for indigenous ecologies

a network for future thinking, disruptive techniques, urban ecologies and health environments

Albert Park to AUT on-grade (leopard) crossing over shared street

Near future urban visualisation: walkable urbanism and low-carbon learning landscapes

// electric vehicles, autonomous vehicles displaying flocking behaviours = car-trains and road diet, transport-as-service, car-share

// local renewable energy generation [solar paint, solar roof tiles, solar glass]

// functional wetland, biodiversity, urban food forests

// green roofs and walls for reduced Urban Heat Island effect

Arawhenua / groundbridge
No buses, shared street, leopard crossing, Albert Part Terraces
 Learning quarter low carbon learning-landscape / near-future visualisation

The timeframe of the discussion process with Auckland Council and AUT Estates has been lengthy, some three years. Diverse impediments to progressing the project even within AUT have arisen in part, perhaps, because the institution has no-one whose remit is to enable the progression of this kind of 'applied' design research that sits outside of normative research and research funding frameworks. While the institution has commitment to sustainability, it simply does not recognise at the moment that this means more than keeping the lights off at night or sorting refuse into recyclable or landfill bins. As time has passed it has become clear that there is a preparatory and significant design intervention required. AUT is institutionally key for developing enabling processes for engaged, multi-party 'living lab' type collaborations. AUT has drafted a Sustainability Action Plan and this seems a timely issue to consider as part of the plan (I have suggested this for inclusion). In the interim, the project has been registered by AUT with the Learning Quarter Committee, a Council/universities group that coordinates strategy for the central city area, with AUT and University of Auckland campuses.

I see real potential for university and Council collaborations that include design-research methods. Design-research can inflect urban strategy or be manifested in urban form in diverse ways. There are questions, as this project illustrates, around how such initiatives might occur and proceed. Engagements by PUNA Waipapaora | Emergent Ecologies Lab with Council in this research project and in research-led studios in the past has been enabled by collaboration with a key Auckland Design Office urban design contacts.¹⁶ Collaboration is the agency that enables such projects and the process by which value accrues. Projects like *Arawhenua* could act as university-Council-student-citizen science collaboration clusters that materialise situated research in public space, creating rich learning-landscapes.

Concept	Amanda Yates
Concept Design Team	Alex Guthrie, Nada Stanish, Amanda Yates

¹⁶ Monique Jones from the Auckland Council Design Office has been a particularly important collaborative force in research projects and a key contributor to Council-linked studios and projects.

Urban Landscapes: Whakapapa – Becoming Earth Cycle

2018

AUT City and South Campuses

The *Whakapapa – Becoming Earth* cycle of works aims to deploy small garden or 'parklet' interventions across two AUT campus sites. These small-scale interventions become pilots for learning landscapes, within which wellbeing research is materialised. The project overlaps with an Auckland Council and Auckland Transport design intervention in St. Paul Street, which transects the AUT city campus. The Council project utilises 'Tactical Urbanism' methods – the use of temporary street furniture, for example – as interim design intervention aimed at improving usability quickly and without major cost. The *Whakapapa Cycle* proposes a similar tactical approach to the urban via small installations in St. Paul Street. In particular, the work aims to reveal former pre-colonising geologies of earth and waterways, and to provide small urban spaces for repose or regeneration. These speculative visualisations, like *Arawhenua*, foreground what could be, enabling conversations about potentials for change. Like *Arawhenua*, these 'Becoming-Earth' proposals take place in contested sites. Urban roadscapes are a 'Pandora's Box', packed tightly in *archaeological* layers of water-pipes, threads of copper or fibre, tightly bundled electrical cabling, and waste-pipes. Design proposals that aim to cut into Anthropocenic asphalt generate anxiety around engineering or utility-risks and local irruptive events, such as waste-water seeps, or disruptions to electricity supply. Approvals for such proposals are painstakingly slow, while the horizon of possibility for implementation is usually a hazy – at times invisible – line in the distance.

This project proposal comes three years after the *Arawhenua* project which proposed papa-toi-ako learning landscapes, and is considered a further test space for the papa-toi-ako learning landscape approach proposed there. In a first iteration, a circle of asphalt is removed and road becomes exposed earth. The earth-clearing marks the extent of a car-park space that formerly edged the street. The circle's perimeter cut is inscribed, as if by a cutting-blade, with Corten steel and is further inscribed by an outermost circle of yellow road-marking paint, signing a whakapapa to Auckland Transport's functional street coding. Larger circles are grassed, becoming small scale glades for rest, sustenance or habitat in an Anthropocenic urban condition. *Whakapapa – Becoming Earth* transects carpark-sized circular excisions in Anthropocenic asphalt roads that reveal earth and create micro-parks, with signage. As an extension to the earth-clearings are *Ngahere-Kai* (Food forests) installed within the circular cuts.

Karanga-Mo-Nga-Kereru

Some of these excisions become sites for the planting of trees (karaka, miro) from which native birds might feed. If our urban logic and strategy attended to life wellbeing, such birds would still flock here in volume. In the interim, a sound-sculpture calls out a karanga to Kereru, as requiem for lives lost and as welcome. The Kereru occupies a unique locale as a keystone species in the relational networks of this part of the living-world. They are the only bird species large enough to swallow the large berries of trees such as karaka, taraire, tawa, miro, pūriri and thus they play a central role in the dispersal of these trees. *Karanga-Mo-Nga-Manu* become smaller circular excisions in Anthropocenic asphalt with posts (bird-houses) and signage.



Puna

Smaller circles, paved porously, locate drinking-fountains. These signal the presence of the springs and now underground rivers that once flowed through the neighbourhood. The *Puna* make a claim and hold a space for these puna and awa, standing for them and the hope that they may be returned to Te Ao Marama, the world of light. The drinking fountains aim to convert the agency and mobility of single-use plastic bottles through an act of urban manaakitanga or generous care.

Pou-Ara-Ora

Timber pou located adjacent to these parklets signal a potential path out of the Anthropocene as they voice (write) ancestral knowledge for wellbeing. In an analogue register the pou list local native bird species, reference the lost awa and puna, describe the mobilities and agencies of single-use plastic water bottles. In a digital re-register they link to websites hosting local ecological knowledge. These are *Araora*, path to life, wellbeing.

Yellow road-marking paint highlights a further Anthropocenic era concern: Widespread use of toxic materials. Fluorescent yellow signals an intent to explore more geo-biologically sensitive materials. The use of the material is uncomfortable, subject to debate and discord. It speaks the language of asphalt-surfacing and motorway-ribbons that have terra-reformed the earth and acts as precipitate and reminder. *In the interim*, perhaps a more apt name for these projects, in a meeting with Auckland Council and AUT, Council noted that Auckland Transport, the statutory authority for Auckland roads, will only allow temporary interventions on roads and pavements as there are multiple underground service pipes running through the precinct. Planters are an alternative response to this, in place of the cuts into asphalt. A futher compromise, reterritorialising, negotiating the hegemonies of strategic authorities with tactical connivances, smooth spaces entangling the striated. We sense raupapa's anxious turns and returns as nurture becomes enframing.

Qualitative intensities

Perhaps doctoral research *should* manifest ongoing complexity as it develops during candidature, especially when there is a practice-led component to design research for the Anthropocene. On reflection, this seems to have happened for me. My initial *Urban Research Lab* interventions commenced something new for me, something at a scale a little at odds with the kinds of client-based architectural projects I had been doing previously. Budgets were now small and project deployments speedy. The first installations in this series were a pair of pop-up gardens sited in Wellington's city centre, in 2010. *Pop-Up Garden Kilbirnie* tested a concept for a linear garden running through an inner urban service easement. The second garden, *Pop-up Mara Iti*, was an intervention in Wellington's Civic Square. Subsequent establishing of the Tāmaki Makaurau-based Puna Waipapaora / Emergent Ecologies Lab at AUT university in 2012 and the 2013 staging of the first *Oceanic Performance Biennial* at the Wynyard Quarter in Auckland, brought together a community of life-minded thinkers, and an urban-ecologies landscape installation for *Tuna Mau*, a performance walk by *Map* (Carol Brown,

Dorita Hannah, Russell Scoones). The second 2015 *Biennial*, in Rarotonga, again linked a community of artists, designers, thinkers, activists focused around issues of futurity, mauri-ora – the wellbeing of Oceanic ecologies. My project, *See-Level*, was installed for this Biennale. It developed as landscape markings or inscriptions indicative of future sea-level rise, making it visible, material. The work was installed on a beachfront site also engaged by other Biennial artists.

The third 2017 Biennial, at Te Uru Contemporary Gallery in Titirangi Auckland, brought together earlier Biennale contributors along with new artists and researchers. *Revolution Cycle* installed at Te Uru, was important for the PhD. The two installations, with two large-scale wall diagrams, interacted as paired structures in the exhibition space. They also provided a platform for a durational drawing work by artist, Monique Jansen, and for associated workshops. *Arawhenua Land Bridge* developed a large-scale walking infrastructure enmeshed with papa-toi-ako, learning landscapes, with an aim that the intervention overall becomes a situated urban locale for dense research and teaching clusters. Over the course of the PhD, complexity as imbrications of connectivity, of mauri and whakapapa, have developed in the work. *Whakapapa – Becoming Earth* cycle of works are speculative, situated nodes within wider urban networks. They are composed with a view to further collaborate with artists who have presented works within the Biennial events, as well as becoming open invitations for others to engage.

Connectivity happens only in the materialisations of works, their actualising. Human-driven levels of Carbon in the air and sea-level rise manifest in *See-Level*. Tapping into immanent energy flows happens with *Solar Revolutions*, but also in actualising the overall exhibition event, in working with communities of artists and designers. And immanent energy happens in terms of the temporality or phasing of works. Over the course of my doctoral research it became apparent that another modality of engagement is needed, another temporalising or phasing of works. This is other to what I have been doing for the past six years: Undertaking a series of individuated design-led approaches to Anthropocenic crisis, along with the two-yearly communities of practice that constituted research developed from out of the performance Biennials. What has emerged, as this doctoral research comes to a conclusion is a third register, or way of activating and actualising.

As this PhD comes to conclusion, I am developing projects that have sustained and ongoing urban engagements, affording the growing of connections that are enabling for project agency and implementation. In collaboration with an eco-design colleague, I am developing a forum whose focus is on urban civics, ethics and futurity. This new research entity is to be piloted in the upcoming 2019 Biennial.

Its methods focus on embodied learning, following an urban pedagogy whereby cities become activated fields of discovery and spaces for sensing and imagining collective futures. Invited artists will contribute to the practicing of mauri-ora. They will be asked to consider how their works operate independently *and* dependently, relationally to others. This programme is being developed in collaboration with a regional Auckland City entity and with schools. In time we hope to offer an ongoing programme of creative, urban-focused interventions and explorations that activate ora in urbanism as counter practice to the UrbAnthropocene.

Mauri-ora, Urban Wellbeing & Transformation

Currently I am research leader for a funded urban transdisciplinary research project, "Mauriora & Urban Wellbeing: A Holistic Approach To Neighbourhood Transformation." The project is funded by the New Zealand government's *National Science Challenges* programme. National Science Challenges are cross-disciplinary mission-led research projects funded by the New Zealand government's Ministry of Business, Innovation and Employment. There are eleven Challenges, with foci ranging from starting life well, to ageing well, to healthier lives, New Zealand's biological heritage, sustainable seas, a deep South focus, and the building of better homes, towns and cities. The *Mauri-ora* project sits within the last Challenge as it investigates how holistic transversal urban ethics for mauri-ora activates neighbourhood transformations. Its transversality moves across an urban field, addressing wellbeing in the contexts of local food networks, local energy systems, biodiverse environments, mobility environments, and tactics for collective housing. Its trans-disciplinarity draws together a range of researchers, including artists, social scientists, energy and climate change specialists, and citizen researchers.¹⁷

There is bleak irony in undertaking urban transformation research in the Anthropocene. As I discussed in Chapter Five, when considering my 'Carbon Phantasm', multiple anthropogenic forces have been set into motion: Carbon dioxide atmospheric emissions at Pliocene levels (410.61 ppm today); consequent carbon dioxide acidifying of oceans; heating of oceans and air with consequent ice melting and sea-levels rising with storm energies increasing; plasticising of the planet along with loss of biodiverse environments and biodiversity. These all ensure that urban transformation is – uncontrollably – already in process. Other forces, as well, drive contemporary globalised practices of disconnection, at scales that are diverse: from planetary circular periodicities that affect and drive our

17 Current contributors include: Monique Jansen, Erica Hinckson, Nirmal Nair.

cellular metabolisms. This research addresses transformations in processes, where mauri as life-vitality is being lost, and transformative potentials to enhance urban living-wellbeing. The key terrains I am working on with respect to transformative potentials are:

Local fresh food

Questions include how do urban environments become productive food-landscapes and carbon-farms that sequester into carbon within the earth? How does a degree of food sovereignty affect the wellbeing of the chronically food insecure?

Energy

Questions include what forms of energy-systems change most benefit wellbeing of life-as-field? How does a measure of energy security benefit the chronically energy-poor?

Biodiverse urban landscapes

Questions include how does biodiversity enhance human wellbeing? How does urban environment wellbeing become enhanced through increases in biodiversity?

Walkable landscapes

Questions include how does urban walkability improve social and biophilic connection and health?

Urban papa-kainga (clustering housing in whanau or community groupings)

Questions include how do housing typologies address contemporary problems of disconnection from people and place? How do tactical housing interventions increase resilience and sovereignty?

Earth-Oriented Ontologies

A fundamental or first transformation recognises the importance of ontology in registering (urban) living in the Anthropocene. As discussed initially in the thesis, the *temporality* of the Anthropocene is registered not so much empirically but ontologically in that globalised and diversified failing in life vitality. This research is predicated on *decolonising* movements from a dualism understood as transcendent subject-object, a subjectivity standing over and against things-objects. That movement moves to Indigenous-Māori immanence: Life is relational field of diverse existents. In Aotearoa New Zealand, Indigenous relational thinking attends to this earth (papa) this moana (sea), this awa (river), ngahere entities

(trees, plants, birds, insects, microbes), nga tangata whenua (people of the land). Transformation's register in the research is mauri-ora as first tūāpapa – ground – of the work, activated in the 'methodology' of mauri-ora and coming to appearance with emphases on the inhering agency and radical abundance of a living-world. This coming to appearance is acknowledged and celebrated through the design of urban systems that work with resource and energy flows immanent to their milieu. The *Mauri-ora, Urban Wellbeing & Transformation* project researches papa-mauri-ora or taone-mauri-ora as vital urbanism wherein urban landscapes are alive, activated, biodiverse, generative of food, energy, and social relations. They are attuned to energy and resource flows. This attends to an inherent, immanent, processual *being* of the earth.

Decolonising and Democratising Research Practices

If we aim for research-led urban transformations, research processes themselves necessarily require critical transformation. This methodology activates a mauri that is binding geospatial force and ora that is life understood through *wellbeing* and *not* through the dualism Life/Nonlife. Concepts of connectivity and lifebeing drive my methods. Connectivity happens across multiple differences: Those of ontologies, of cultures, of research practices, silos of all kinds, disciplines, businesses and residents, institutions and demographies. Kaupapa Māori processes, so well described by Linda Tuhiwai Smith in her groundbreaking *Decolonising Methodologies* are deployed.¹⁸ With this project on urban transformations we also explore what it means to have a *democratising* of research such that citizen-researchers are engaged in multiple modalities of research generation, activation and materialisation for 'testing' processes or interventions.

Resurgent Tactics, Tactical Counterpractices

Practice methods that are both creative and engaged, such as urban site activations and installations, aim as well to democratise potential access to this research. In the context of this study, the interventions are gardens that also include additional designed elements such as Pou, as sign-post and garden support structures, that aim to signal Anthropocenic crisis as they reference relations between atmospheric carbon levels and sea-levels, or visualise the sun's energy through interactive solar technologies. These are transversal and connective intervention sites, where multiple conditions play out: They are food gardens but also research sites, and fields that enable social connection, and also sites from which citizen-science

18 See Linda Tuhiwai Smith, *Decolonising Methodologies: Research and Indigenous Peoples*. (London: Zed Books, 1999).

'earth-sensings' are registered. They are part of AUT's estate and therefore subject to institutional oversights and controls while also aiming, within their limitations as micro-installations, to test out urban change tactics and materialisations. The Pou-Ara-Ora, sign-posts, are intended as structures that connect between a lived world and a digital site that presents the research as text and image. While built structures always require *decoding*, and access to smart phones is limited, these methods hope to democratise approaches to research. Tactical urban installations operate as one key method by which counterpractices can be tested out in socio-cultural-ecological and democratic spaces of the urban. In the following, I discuss the first intervention to be realised within the *Mauri-ora* research project addressing food as a transversal medium foregrounding social connection, healthful eating, biodiversity and biophilia as intersecting wellbeing.

Urban Landscape Installations: Whakapapa – Becoming Earth Cycles

2018

AUT

South campus

Ngahere-Kai – Food Forests

Artists/Designers *Monique Jansen, Amanda Yates*





Ngahere-Kai

At the outer reaches of AUT's South Campus is a small circular food forest. The small scale implies that the project's primary agency rests not in the generation of food but rather in exploring how an institution may leverage its infrastructure as research-site, how researchers may *entangle* design and science research practices to support social innovation enquiry, and how communities may (or may not) accrue around local food practices. This small scale intervention is potentially replicated in speculative visualisations for a neighbourhood-wide installation of 'parklets' or 'micro-foodforests'. At neighbourhood scale, as a future-oriented visualisation of urban abundance, the project opens to an ethics for urban manaakitanga (generous care) manifested in these food-landscapes. How do such interventions enhance social and geo-biophilic connectivity and become local interventions for mauri-ora? These are papa-toi-ako, creative learning landscapes, that aim to sense out how urban food gardens contribute to different kinds of wellbeing. These are also interventions for vital urbanism, where the diurnal rhythms of sun, wind, water cycles, bio-geological exchange manifest ongoing life-energies and activities.

Growing Institutional Connectivity

Proposed as an intervention within AUT campus landholdings, *Ngahere-Kai* aims to activate conversations between AUT researchers and AUT Estates. AUT Estates has



drafted a wide-ranging sustainability strategy. One of the items to which they draw attention is the potential to grow food on site. We are interested in how on-site grown food could be used by university cafes or harvested by students. Relative poverty is linked with food insecurity. University students are one group who can struggle to meet rents, transport costs and university fees, along with food prices.¹⁹

Materialising Research

The garden aims to materialise health and wellbeing teaching and research. It is sited in a large grass field, interspersed with a number of mature, non-fruiting, trees. In the low winter sun we cut a circle into the grass, enrich the soil within, and plant a ngahere-kai, food forest. Food forests are vertical, layered gardens, that incorporate canopy trees, lower trees, shrubs, herbaceous plants, cover crops on soil, and vines that extend transversally across all layers. They are established in 'guilds' as relational assemblages of plants, animals, insects, microbes. These aim to echo the connectivity of forest ecosystems via low maintenance agro-forestry processes.

Social, Civic and Ecological Connection for Wellbeing

Networks of relations – as much as things designed and made – are central to the current proliferation of research around happiness and well-being. Urban happiness or wellbeing can now be studied via local social survey data enabling mapping and spatial modelling to explore wellbeing at different urban registers, from individuated existence, through to the neighbourhood communities, city and regional populations.²⁰ Social connection is shown to be a key determinant of urban wellbeing and the neighbourhood, as a locale that one calls 'home'. This has a key role in establishing a sense of connection as social interactions tend to be denser proximate to home.²¹ Research indicates that wellbeing is high if people feel a sense of belonging and trust in their neighbourhood community.²² There is a

19 Danielle Gallegos et al, "Food Insecurity in Australian Households: From Charity to Entitlement," In *A Sociology of Food and Nutrition: The Social Appetite, 4th Edition*, eds. J. Germov and L. Williams. (South Melbourne: Oxford University Press, 2017) 55-74.

20 Dimitris Ballas, "What makes a 'happy city'?" *Cities*, 32 (2013): 39–50.

21 Joan Frances Kelly, *Social Cities*. (Melbourne: Grattan Institute, 2012); John Helliwell and Shun Wang, "Trust and Well-Being," *International Journal of Wellbeing* 1 (1, 2011): 42-78.

22 Helliwell and Wang, "Trust and Well-Being."

wealth of research that now establishes how green space and communal gardens improve social connection and wellbeing.²³ Studies show that urban gardens can be effective sites within which to grow civic awareness and understandings of ecological processes.²⁴

The neighbourhood-scaled *Ngahere-Kai* proposal references urban landscapes that afford food sovereignty as they give access to the productive capacities of a living-world. Such reorientation towards vital generative urbanism inflects on a transforming of petro-carbon capitalism as limited structures – availability of supply, consequent demand – are destabilised. Urban landscape may now be defined as democratised and productive fields of relations that disrupt or, at least, foreground the most egregious effects of current political-economic structures. Underpinning the *Mauri-ora* project is the activating of connected, relational thinking for vital urbanism in the Anthropocene. As *minimal ethics*, mauri-ora is holistic orientation and fundamental attunement to life-as-field, a field in constant movement: Whakapapa-becoming-earth, geo-biology. *Our living is the city*. Thus counterpractices for the Anthropocene question how local food networks build wellbeing: Through social connection, through individual wellbeing, through access to fresh food, through increased carbon-sequestration in soil, through increases in bio-diverse urban landscapes. Further stages of the project aim to focus on energy sovereignty, as well as housing, biodiversity and mobility strategies for wellbeing.

23 Viniece Jennings et al, “Emerging Issues in Urban Ecology: Implications for Research, Social Justice, Human Health, and Well-Being,” *Population and Environment* 39, (1, September 2017) DOI 10.1007/s11111-017-0276-0; Laura Mumaw et al, “Strengthening Wellbeing in Urban Communities Through Wildlife Gardening,” *Cities and the Environment* 10, (1, 2017): 1-20; Kathleen L. Wolf and Alicia S. T. Robbins, “Metro Nature, Environmental Health, and Economic Value,” *Environmentsl Health Perspectives* 123, (May 2015): 390-398; Gregory N. Bratman et al, “The Impacts of Nature Experience on Human Cognitive Function and Mental Health,” *Annals of the New York Academy of Sciences* (2012): 118-136.

24 Jamie Andersen et al, “Lively Social Space, Well-Being Activity, and Urban Design: Findings from a Low-Cost Community-Led Public Space Intervention,” *Environment and Behaviour* 49, (6, 2017): 685-716; 709.

Fundamental transformations capable of (en)countering Anthropocenic harm are *before* the political constituencies of petro-billionaires funding oil-oligarchies. They are *before* an enmeshed, publicly funded petro-economy. They are *before* the infrastructural meshes of cities built for cars, of globe-spanning petro-supply networks. Those *befores* are qualitative intensities, spacings as trace-structuring of what is essentially *yet-to-be* but necessarily and pre-ontologically *there*. *Before* is ontological, Papatūānuku. Coming to understand that we are geotic (geobiological) and constantly becoming-earth, becoming-urban, becoming-air-borne-particulates, is central to the futures of our cities and ourselves. 'Selves' are supra-organism: Microbes composing us, others that become us as we eat, or drink, or breathe, other lives that seemingly have nothing to do with us and no interest in us but together with us and the earth, sea, and sky form a global supra-organism as immanent life-field. Attuning to immanent oscillations and the sun's energising force attunes us to whakapapa as life-becoming-life. Here is radical abundance, immanent agency of this living-world, of whakapapa, as life-temporalising. Designing for this *abundance*, renewal of the day with planetary rotation, is radical countering to the Anthropocene, countering to Anthropos-assemblage, to Anthropos-as-isolate-ascendant.

Chapter 7

Small Change

Hau-ora

Winds of change can blow fair or foul. National elections bring weather vanes to a head. In 2017 Aotearoa New Zealand had a change of national government, from a committed neo-liberal coalition to a Labour-party led coalition aiming at massive redress to social issues of inequity. One of its electoral platforms was climate change. Its *tag* was that climate change has become the nuclear power agenda for millennials. During the 1980s Aotearoa made international news by banning all nuclear-powered vessels from New Zealand waters and abandoning any government or industry plans for establishing nuclear power. That, too, was a Labour government.¹ This country established itself as internationally responsible for bringing closer, if only by small changes, nuclear non-proliferation. In 2018 the new Labour government ceased granting permits for oil exploration and extraction from New Zealand waters. Climate change is this government's new

1 From the 1970s New Zealand began to develop anti-nuclear policies under successive Labour governments (Kirk in the 1970s and Lange in the 1980): “When New Zealand and Australia aligned themselves with the United States via the ANZUS agreement in 1951, they effectively accepted the protection of what some described as the nuclear umbrella. Nuclear weapons played a major part in the United States’ military arrangements, and possible use of nuclear weapons or nuclear-powered vessels was implicit in any United States response to an attack on New Zealand. While from the 1960s New Zealand consistently protested against nuclear testing in the Pacific, its defence arrangements meant that it engaged with nuclear weaponry in other forms. From the early 1970s to the mid-1980s two key issues emerged: opposition to French nuclear tests at Mururoa and American warships’ visits to New Zealand. The sinking of the *Rainbow Warrior* in Auckland in July 1985 was a defining moment in this period.” See: <https://nzhistory.govt.nz/politics/nuclear-free-nz> Accessed 27 May 2018.

non-proliferation policy and petro-currency is its target. While this action will hardly close down the oil industry giants' ongoing global search for new reservoirs of untapped crude, it does signal internationally that governments are able to act responsibly for the planet, at a short-term revenue cost to their electorates, but perhaps, long-term, enabling survival itself. In opening this conclusion to my thesis, I want to give further consideration to this notion of climate change becoming for millennials what the threat of nuclear holocaust was to an earlier generation during the second half of the twentieth century. The comparison is enlightening. In doing so I briefly return to Heidegger.

The Heidegger scholar, Andrew Mitchell, has written one of the most comprehensive books on the work of the late Heidegger, focusing on the emergence in Heidegger's thinking of the 'Fourfold' which I have previously introduced in relation to the work of Carl Mika.² By 'late', we refer to some 'new' thinking developed by Heidegger in the aftermath of the second world war, commencing with a series of public lectures in 1949.³ I have briefly mentioned aspects of this earlier in the thesis, concerning Heidegger's ontological disclosure of the essencing of technology in 'positionality' and the essencing of positioning in 'danger'. Mitchell notes:

The most devastating consequence of positionality is the advent of the atomic bomb. With this, destruction is available on command and the attendant threat of destruction hangs over all that is. Its achievement requires an advanced physics operating at the atomic level. It also requires a peculiar brand of energy. For Heidegger, the equation is simple: atomic energy is atomic destruction. This is the consummation of the circulative replacement of positionality. Energy is the ultimate standing reserve, all that is converts to it. The world of energy reserves is no world at all, but an unworld. In the deployment

2 Andrew Mitchell, *The Fourfold: Reading the Late Heidegger*, (Evanston, Ill: Northwestern University Press, 2015). Carl Mika addresses Heidegger's fourfold directly in thinking its inter-relationality of *earth, sky, divinities and mortals* as resonant with whakapapa's relationality of Papa, Rangi, Atua and tangata whenua. For an especially insightful Māori engagement with Heidegger's 'Fourfold', see Mika, "Enowning of Thought and Whakapapa: Heidegger's Fourfold," *Review of Contemporary Philosophy* 13 (2014): 48-60.

3 See Heidegger, "Insight Into That Which Is: Bremen Lectures, 1949," in *Bremen and Freiburg Lectures*, trans. A. Mitchell. (Bloomington and Indianapolis: Indiana University Press, 2012) 3-73.

of atomic energy, the world becomes a 'desert'. In the desert, all that exists is threatened. Nature becomes energy becomes threatened becomes desert."⁴

As I briefly outlined back in Chapter Four, Heidegger moved from an ontological disclosure of 'world picturing' as the representational standing over and against what is as object for a subject as *cogito*. That was his understanding during the 1930s, and his "Age of the World Picture" is exemplary of this, as is his discussion of 'machination' in *Contributions to Philosophy*.⁵ As Mitchell outlines, that understanding of a world of objects subordinated to a subject-substance gives way by the late 1940s to a more radical disclosing of the being of entities in 'positionality' (*ge-stell*). All beings are disclosed as 'pieces' of inventory, as standing reserve for demands of consumption in production. Hence, no longer does the human hold sway as predominant being, as all entities become entirely disclosive as availability. For Heidegger, then, the atomic bomb discloses something more profound than the empirical factuality of destruction in detonations. Detonation does not have to happen. As Mitchell emphasises "The transformation of the bomb lies in the transformation of the world into immediate (distanceless) standing reserve. The horrifying is thus ontological."⁶ By 'distanceless', Mitchell does not mean that things are brought empirically close. Rather in disclosure, the 'bringing near' of things refers to their present-at-handness, their presence as available, brought entirely out of concealment, annihilating concealment as such, the mystery of things, the being of beings as that which essentially withdraws in things coming to appearance. *Presence* becomes the essential bearing of things, their entire availability and disclosure. As Heidegger says: "Ordering the standing reserve, positionality allows unconcealment and its essence to lapse into full forgetting."⁷ The implication here, for Heidegger, is that modern Science has already destroyed the world prior even to the splitting of the atom: "The atomic bomb exploded long ago; namely at the moment that the human stood in insurrection against being

4 Mitchell, *The Fourfold*, 63.

5 Heidegger, "Age of the World Picture," in *The Question Concerning Technology and Other Essays*, trans. W. Lovitt. (New York: Harper Torchbook, 1977) 115-154; *Contribution to Philosophy (From Enowning)*, trans. P. Emad & K. Maly. (Bloomington & Indianapolis: Indiana University Press, 1999).

6 Mitchell, *The Fourfold*, 65.

7 Heidegger, "Insight Into That Which Is," 50.

and posited being from out of himself and made it the object of its representing. This since Descartes.”⁸

Heidegger died in 1976 without having to witness nuclear war. Though he did witness the 1969 moon landing by Neil Armstrong, with that small though memorable aphorism: A small step for man; a giant leap for mankind. Heidegger’s comment was profound: “This is no longer earth on which man lives.”⁹ In the sense by which Heidegger understands modern technology as disclosive of an ontological and essential danger, the Anthropocene is a further disclosive encounter, not simply of the empirical understanding of the series of destructive spirals underway, as pressing as these are. It goes further, to the disclosive recognition that atomic carbon as fundamental constituent to all biotic and geotic exchange, is peril itself, essential danger as that by which energy is extractable. When (or *if*) atomic energy and carbon-based fossil extractions are superseded by ‘renewable’ solar or wind or tidal energy sources, this is not a saving of the planet at all, but rather the total consummation of turning what is – *physis* – to energy supply. Though already, this is no longer earth on which we dwell. Two pressing points need to be made. Firstly, Heidegger pointedly draws from Western science and Western metaphysics as that which universalises. Its corollary is my second point: non-Western Indigenous cosmo-ontologies do not have human beings ‘standing in insurrection against being’. That ‘insurrection’ is something that privileges the West, defines the West, though destroys us all.¹⁰ We could say the

8 Heidegger, Seminar (GA 15), ed. C. Ochwadt, 1986; cited in Mitchell, *The Fourfold*, 66.

9 Heidegger, “Only a god can save us,” Der Spiegel Interview, in Richard Wolin, ed. *The Heidegger Controversy: A Critical Reader* (New York, NY: Columbia University Press, 1991) 106.

10 I need to emphasise when using this expression, the ‘West’, that it exists as a social imaginary, though one that is real *and* global. There is no monolith we call the ‘West’. It does not comprise the self-identities of nation states we associate with Europe, the United Kingdom, North America and other ‘first world’ nations such as Australia and New Zealand. There are heterogeneities, struggles of first nations colonized peoples, struggles against inequities of all kinds, struggles against late capitalism, late liberalism and neo-liberalism. The ‘West’ is a geo-ontological inscription, a geo-metaphysical marker of colonisations that are now planetary. That geo-Science names an epoch of recent origins ‘Anthropo-cene’ is disclosive of this geo-metaphysics of planetary scale.

Anthropocene, too, has been happening since that atomic bomb was ‘detonated’ some 300 years ago, that the anxiety of living with ‘the bomb’ especially during the 1950s to 1980s – though also with us still¹¹ – coincides with the launching of planetary anxiety, coinciding with the planetary as such being *produced* with the first satellite launch, with that culminating in what for Heidegger was the most devastating day in the history of being: the day ‘man’ stood somewhere and looked back at the ‘earth’. That ‘giant leap’ for ‘mankind’ is an abyssal leap to planetary destruction. Rocket propulsion now becomes the *hau*, living breath, the winds of change, in planetary destiny. In 2018, NASA announced its programme for building a permanent lunar station.¹² Meanwhile, the planet ‘burns’. Today, the sixteenth of May 2018, the United States opened its embassy in Jerusalem two days ago, another ‘permanent’ station in ‘deep space’. This coincides with the killing by Israel soldiers of fifty-nine Palestinian protestors on the Gaza border, and the wounding of more than two thousand protestors. This further imperial colonising of the colonising of Palestine, this making room by force, this insurrection of being by the human and usurpation of a Palestinian capital, is repeated everywhere now as the human becomes inventory piece in a planetary standing reserve.

This is the *Anthropocene*, all of it. It cannot be confined simply to ‘climate change’ or ‘species extinction’. These are way-findings, symptomatic markers of crises so fundamentally deep within Western understandings of what is, that we are more than simply curious to look to decolonising metaphysics or Indigenous ‘methodologies’. We are obliged to begin to think otherwise. But, as I have earlier asked, what can *Anthropos* name if it is not a universal category that subsumes a panoply of crises, of critical dangers? Is it not a universal, and for all that a *concept* that transcends the multiple milieus within which life is? The legacies of *Anthropos*, of the human, are of that entity considered as rational animal, animal with *logos*, with language, that being understood as measure, transcendence at the very heart

11 In 2018 the Doomsday Clock has nuclear catastrophe at two minutes to 12.00, the closest it has been since the 1953 *and that was the closest it has ever been*. The ‘clock’ is measured by an international body of scientists and political analysts, The Bulletin of Atomic Scientists, who have been recording the likelihood of nuclear war yearly since 1947. See <https://thebulletin.org/2018-doomsday-clock-statement> Accessed 17 May 2018.

12 “NASA’s Lunar Outpost will extend Human Presence in Deep Space”: <https://www.nasa.gov/feature/nasa-s-lunar-outpost-will-extend-human-presence-in-deep-space> Accessed 16 May 2018.

of life thought as immanent field. The task of this thesis has been to dislodge the hegemony of an essentially un-thought Anthropos and in doing so to encounter that obligation to think otherwise. *It obligates me*. But what is 'it'?

It obligates me

In Chapter Four of the thesis I broached the question of ethics, of thinking of the relation between design and ethics. I mentioned that Tony Fry considered that question has never been sufficiently encountered in the West. My trajectory was to address the work of Joanna Zylińska on climate change philosophy, broaching the notion of a 'minimal' ethics, which I am hoping resonates with the very title to this conclusion. Zylińska herself addresses the ethics philosophy of Emmanuel Levinas. And it is to Levinas I turn in order to ask again what is the 'it' that obliges me to not only make an eco-ontological turn, but to engage a decolonising metaphysics, an Indigenous-Māori whakaaro that aims to unconceal something un-thought in Anthropos. In turning to Levinas, I want to begin with a question of obligation: "– He will have obligated (*il aura oblige*)."¹³ Levinasian obligation is intimately discussed by Jacques Derrida, in an essay that establishes his 'response' to Levinas's second book publication, *Otherwise than Being*.¹⁴ Derrida opens his text, "At This Very Moment In This Work Here I Am," with all the attendant mystery I have *felt* in another philosophical scene (or *séance*) with Deleuze's Stoic thinking of Chronos we have earlier discussed: Encounter *at this very moment* with sensation that obligates me:

At this very instant, you hear me, I have just said it. He will have obligated. If you hear me, already you are sensible to the strange event. Not that you have been visited, but after the passing by of

13 This is the opening epigraph to an essay by Jacques Derrida, addressing Levinas's *Otherwise than Being*. See "At this Very Moment in this Work Here I Am," trans. Ruben Berezdivin, in *Re-Reading Levinas*, eds. R. Bernasconi & S. Critchley. (Bloomington & Indianapolis: Indiana University Press, 1981) 11-48, 11. See Levinas, *Otherwise than Being or Beyond Essence*, trans. A. Lingis. (Pittsburgh, PA: Duquesne University Press, 1998).

14 This book by Levinas was itself a response to an earlier essay by Derrida, "Violence and Metaphysics," as a response to Levinas's first book, *Totality and Infinity: An Essay on Exteriority*, trans. A. Lingis. (Pittsburgh, PA: Duquesne University Press, 1969). See Derrida, "Violence and Metaphysics," in *Writing and Difference*, trans. A. Bass. (London & New York: Routledge, 1978) 97-192.

some singular visitor, you are no longer familiar with the places, those very places where nonetheless the little phrase – Where does it come from? Who pronounced it? – still leaves the resonance lingering.¹⁵

For Levinas, obligation is primordial ethics, encounter by an existent *before* its self-same identity 'is', as this being here (*Dasein*), with what is otherwise than being, what is infinitely strange and unknowable, what in knowing, itself, remains unfathomable. It obliges me to welcome it. This obligation is asymmetrical. I cannot in reciprocal fashion oblige back to this stranger to be like me, to become known. Ethics is radically unconditional. I am radically passive to any sense of reciprocity. I unconditionally welcome, turn myself out of my dwelling in making room for this stranger to whom I am infinitely obliged. I am unconditionally colonised, it obligates me to welcome without the slightest expectation for reciprocity. Derrida comments:

According to which he will have immemorally obligated even before calling himself by any name whatsoever or belonging to any genre whatsoever. The conformity of *conformance* is no longer thinkable within that logic of truth which dominates – without being able to command it – our language and the language of philosophy.¹⁶

Derrida draws out the lacunae within Levinas's thinking: I must respond to Levinas, reciprocate but what I am responding to cannot itself be Levinas. It must at once be older than and infinitely removed from what I know to be the work of Levinas. I must at once retribute and not retribute, respond and not respond, at once recognise the intractable difficulty of what it is that obligates. Derrida's text is a long and involved deconstruction of the *aporias* in Levinas's *Otherwise than Being*. My intention is not to work through these but to draw out or draw on the strange conclusion to Derrida's essay, strange in its reference to earth, strange in its resonance with Papatūānuku. It is strange in how it opens obligation to an ethics unthinkable within Western metaphysics:

– Here at this very moment I roll up the body of our interlaced voices
consonants vowels accents faulty in this manuscript ~ I must place it
in the earth for you ~ Come lean down our gestures will have had the
inconsolable slowness the gift requires as if it were necessary to delay

15 Derrida, "At this Very Moment," 11.

16 Derrida, "At this Very Moment," 14.

the endless falling due of a repetition ~ It's our mute infant a girl perhaps stillborn of an incest will one ever know promise to the incest ~ fault or lacking in her body she will have let herself be destroyed one day without remainder one must hope one must guard oneself from hope even that thus always more and no more jealousy the better she will be kept guarded ~ More and no more than enough difference there among them (*Elles*) between the inhumed or the ashes of a burn-all ~ Now here even the thing of this liturgy keeps or guards itself like a trace otherwise said loses itself beyond play and expense all in all and all accounting for others done already she lets herself be eaten ~ By the other by you who will have given her to me ~ You always knew her to be the proper body of the fault she will only have been called by her legible name by you and thereby disappeared in advance ~ But in the bottomless crypt the indecipherable still gives reading for a lapse above her body which slowly decomposes in analysis ~ We must have a new body another without any more jealousy the most ancient still to come ~ She doesn't speak the unnameable yet you hear her better than me ahead of me at this very moment where nonetheless on the other side of the monumental work I weave my voice so as to be effaced this take it here I am eat ~ Get nearer ~ In order to give him/her ~ drink.¹⁷

Becoming earth becoming death becoming life: *es gibt* – it gives (obligates). She lets herself be eaten. Something neither Life nor Nonlife, neither biotics nor geotics, something exceeding ge-ontology, ge-onto-power. This *liturgy* is something other than requiem. This liturgy is recitation, whakapapa – becoming earth, becoming Papatūānuku. I want to encounter this *il aura oblige* – always already obligated – in relation to Povinelli's geontopower of late liberalism, her requiem to late liberalism. What does geontopower now name, beyond late liberalism? I am reminded of a short aphorism from Nietzsche that Derrida cites and discusses in *Cinders*:

There is also Nietzsche's paradox – which makes him something else perhaps than a thinker of the totality of entities – when he no longer normalises the relation of the cinder to the whole by treating it as part of the whole, or by introducing some tranquilising metonymic logos:

17 Derrida, "At this Very Moment," 46-47. Note that this concluding, exceedingly enigmatic, paragraph is entirely in CAPITAL LETTERS in the published version (construing its textual economy as a kind of memorial stone work, perhaps). I have altered this here so as to assist in legibility, in readability.

'Our entire world is the *cinder* of innumerable *living* beings; and what is living is so little in relation to the whole, it must be that, once already, *everything* was transformed into life and it will continue to be so.' Or else (*Gay Science*): 'Let us guard against saying that death is opposed to life. The living being is only a species of what is dead, and a very rare species.'¹⁸

Would Derrida be encountering something different here, in this Nietzschean guarding against an opposing of death to life than he is saying in Levinasian unconditional obligation? Would this not also be what Povinelli infers when she points out that geontology and meterontology are devouring biology? "Life from Nonlife? Life is not the miracle ... Nonlife is what holds, or should hold for us, the more radical potential ... Life is merely a moment in the greater dynamic unfolding of Nonlife."¹⁹ But, then, Povinelli does oppose Nonlife to Death. But, eventually that distinction, that difference dissolves in the social imaginary of extinction as such. What eclipses, extinguishes late liberalism is simply liberalism's supposed legacy, genealogy of a normative preservation of life. Geontology knows of extinction. Its tactics will not particularly differ from those of late liberalism though it will not be encumbered to a concern for, or appearance of concern for, façade or pretence at concern for the living. Its tactics indifferently shuttle between Life and Nonlife as geotic security simply requires inventories of the positionalities of whatever beings for the sake of power's exercise, where *power* is disclosed as energy extraction as essential danger. Those two minutes to midnight are there not only because of reckless global politics concerning nuclear weapons developments and deployments. The two minutes happen because of climate change crises and inaction or refusals to act by those whose nuclear arsenals are the largest.

Though, Povinelli has her finger on that pulse: "This focus [on biopower understood as a late-liberal tactic] has obscured the systematic re-orientation of biosecurity around geo-security and metro-security: the social and ecological effects of climate change."²⁰ Geontopower emerges with late liberalism, though as I have suggested, eclipses it. Its tactics aim at defining relations between life and nonlife. Povinelli's work goes to an essential concern I have with Indigenous-Māori

18 Derrida, *Cinders*, trans. N. Lukacher. (Lincoln & London: University of Nebraska Press) 67, 69.

19 Elizabeth Povinelli, *Geontologies: A Requiem to Late Liberalism*, (Durham, NC & London, UK: Duke University Press, 2016) 176.

20 Povinelli, *Geontologies*, 19.

understandings of mauri and whakapapa within which there is no life-nonlife differentiations. There is a 'univocity' in all existence, an immanent ontology of ora, life, for which ethics equals mauri-ora, force of life's connectivity or relationality as well-being. To reiterate what I have earlier emphasised in the thesis, bio-geological life is life-field as earth's release *and* welcome of bio-assemblages, to be reformed again from geo-biological matter – Papatūānuku – in eternal differentiations of the whakapapa of life: As part of a frog; molecules within a river, evaporating up into the atmosphere, falling as rain or snow as part of a hydrological cycle; as molecules within a microbe within a human being; or as part of a concrete form or the timber element within a building. In the temporality of the everyday we become atmospheric with each breath we take; we become hydrological with each immersion in the ocean or each swallow of water; we become geological as we sink our fingers into the earth, pulling carrots or digging in compost. As our bodies shed skin cells, excrete wastes, or exhale, we *are* the iterations of becoming-earth, becoming bio-geological. Mauri *is* this imbricated interweaving that is life. Whakapapa is life becoming earth (whaka papa) and world is living-world movement, process as spatial and temporal field. Thinking life-as-field in the Anthropocene requires us to think self as worlding becoming-earth rather than as an ego-identity whose ground as subject-substance finds itself in a transcendent relation to extensity, or object-world as that to be surveyed and known, as that which yields its self for human-centered production. That world equally is illusion, if not sheer madness. But, is this saying something different simply because I invoke decolonising metaphysical thinking? Why would this not simply be recouped as component part of geontology's requiem? What is so different in what I am saying inasmuch as all molecules, human or otherwise become inventory in a calculative energetics of this planet, prior to extinction? Is Papatūānuku still not a geontology?

Small changes

My argument is that decolonising metaphysics defines a difference that commences with an understanding of obligation. Hence, within this research it is important that the term 'ethics' finds its *appropriate* voice to explain Māori and eco-relational thinking. Again, to reiterate what has been said earlier, mauri-ora is a step towards finding an ethos, 'concept' and strategy for this ethics *before* human being, as radical immanence. *With whakapapa mauri is primordial, before the being of the world. In animal ethics, mauri is awareness before being a self.* Mauri is life-field *before* us, cosmic-nativity, a new earth of whakapapa as a multi-entity becoming within which the human is teina, junior relative, offspring. We come from, live amongst and, with an ethos of care, may maintain mauri *if* we attend to the vitality of ora, in mauri-ora, life-field. Thinking mauri, life-force, as

field situation and as correlative condition, questions how we take action in a living-world. This implicates acts of designing, given the degree to which human-designed artefacts and habitats have now formed and reformed the geosphere. This is not a resuscitation of a power of life over death we find in the biopolitical. It is not a geontological power that tactically works between life and nonlife. If the question of power is addressed here, then it is, in a Western philosophical sense, Spinozist, as capacity to maximise one's potentials to affect how existents are on Earth and to be affected by those existents. It is ethics.²¹ Mika expresses this ethos of existence in the following terms highly resonant with Heidegger's 'Fourfold' which I earlier discussed:

Māori may describe the dwelling process through the verbal form of *whakapapa*, in which 'to layer' [papa] is also to depict an appropriation by the earth, the sky (through [Rangi] the sky father's separation from, yet connection with, the earth mother [Papatūānuku]), the divinities ([atua – a-tua – that which is beyond] those entities that both fought against and sustained the earth/sky relationship), and mortality (the eventual and final connection of the human self with all those entities through the appropriation, most immediately, by the earth mother). More precisely, *ira* suggests that the self becomes what it is – in Edwards' words, our 'human whakapapa' is 'rekindled' and 'connected' by *ira* – through the emergence of things. This manifestation can be said to engage with the aforementioned definition of *ira* as 'life principle', whereby things indicate themselves to the self and to other things by virtue of their own autonomy. The sort of essence that is augured here is not a solid ground of permanence, as already noted, but is predicated on the self-organisation of things and their reliance on each other.²²

21 See Benedict de Spinoza, "The Ethics," in *A Spinoza Reader: The Ethics and Other Works*, ed. & trans. E. Curley. (Princeton, NJ: Princeton University Press, 1994). Deleuze and Guattari note, concerning Spinozist affect, in *A Thousand Plateaus*: "A body is not defined by the form that determines it nor as a determinate substance of subject ... a body is defined only by (...) the sum total of the material elements belonging to it under given relations of movement and rest, speed and slowness (...); the sum total of the intensive affects it is capable of at a given power or degree of potential (...). Nothing but affects and local movements." 142.

22 Mika, "The Co-Existence of Self and Thing Through Ira," *Journal of Aesthetics and Phenomenology* 2 (1, 2015): 93-112. DOI: 10.1080/20539320.2015.11428461

Each of us is diversified life-assemblage. If *ira* is 'life principle' and it is also the coming to appearance of whatever is, emergence from out of being's concealment in the appearing of beings, then that coming to appearance, that *life principle*, must be the fundamental attunement for thinking design as an ethos radically non-instrumental, radically encountering 'power' as immanent capacity for emergence of affect. That coming to appearance is thus not a scopic survey or purview. It is not 'enlightening' but rather that which maintains the mystery of withdrawal, that 'blindness' I discussed with de Certeau's walking in the city. From Benjamin, I inherit a model of the non-totalising fragment, a mosaic-writing by which I survey, as 'blind' walker, the city of Auckland [Tāmaki Makaurau as a montage of carbon-fragments, phantasms or social-imaginary of Anthropocenic crisis.²³ This crisis is that of dark-earth nonlife-geontological indwelling as its larger (un)grounding ground for decolonizing metaphysics – whakapapa – *whakaaro papa*.

Only an atua can save us now

Is it appropriate, in these final moments of my thesis to quote, or parody or appropriate that famously misunderstood sentence by Heidegger in his *Der Spiegel* interview, referenced earlier when discussing astronautic tele-technologies – *only a god can save us now?* The misunderstanding could not have been graver. Heidegger was not suddenly, at the end, returning to onto-theology, invoking a Christian God at the dismal end of Western (now planetary) metaphysics. Heidegger was done with that Christian God long ago (notwithstanding his request for a Catholic Requiem Mass at his burial. But, then, Povinelli also mentioned a Requiem 'Mass' to Late Liberalism). His god is broached initially in *Contributions to Philosophy*. God is a verb – godding! – something closer to the Greek understanding of gods, and closer to how Mika explains Māori divinities, *atua*:

23 Benjamin's fragment-thinking, his mosaic-assemblages are for the most part developed in his early writing on German tragic drama. See *The Origin of German Tragic Drama*, (London & New York: Verso, 1998) esp. "allegory and Trauerspiel," 159-235. See also Buck-Morss, *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*, (Cambridge, MA: MIT Press, 1989) 73-77. This discussion by Buck-Morss engages what is most important for Benjamin in the notion of montage for the making of mosaic works. She cites Benjamin on his plan for the *Pas-sagen-Werk*: "[...] to erect the largest constructions out of the smallest architectural segments that have been sharply and cuttingly manufactured." 74. My own design works, made from out of a 'minimal ethics' and 'small changes' are equally to be thought of as large constructions from out of the smallest segments.

Atua can mean 'divinities' but the term carries with it the additional sense of 'of the beyond' (a-tua). Gods for Māori are actually those that do not reveal themselves, in their totality, as solid entities but remain beyond the senses even when they are present. That is, they are considered to be 'there' (in the sense of 'ira', which can refer to 'essence', a surprised 'over-thereness!', or even 'genetic inheritance') but in their presence there is concealedness, or 'beyondness' to their nature. To think in the presence of divinities is simply to acknowledge their mystery, along with that of the earth [papa] and the sky [rangī].²⁴

Atua are not transcendent and authoritative powers. Atua are immanent capacities. Can 'design' save us, then, when design is thought from out of non-mastery, non-instrumental ira, letting come to appearance of what is? We need to think 'design' as something other than a master-discourse of mastery (end of the story of human progress). The question to then asked is perhaps: How might an ethical design for wellbeing, a geo-logical design, perhaps, compose the Anthropocene as some other 'thing'? My questioning-imblicating of design and Indigenous worlding profoundly opens to dis-closure of ontological horizons that inaugurated the Anthropocene and that permeate our everyday. As Chris Bonneuil asserts: "[The] various Anthropocene narratives we tell are performative; they preclude or promote some kinds of collective action rather than others, and so they make a difference to the becoming of the Earth."²⁵ These narratives, in their heterogeneity, are stratifications in the sense that Deleuze and Guattari think a geology of morals, a geotics of survival. But things get more complicated than this, as Deleuze and Guattari explain, for there are also strata and layers, a certain forming of matter: "imprisoning of intensities or locking singularities into systems of resonance and redundancy ... organising into molar aggregates."²⁶ But what interests Deleuze and Guattari here is not a wholesale destratification, a privileging of flows and

24 Mika, "The Enowning of Thought and Whakapapa," 56. Heidegger discusses the Greek understanding of *theos* or *thea* in his lecture course on Parmenides's poem to the goddess, *Alētheia*. See Heidegger, *Parmenides*, trans. A. Schuwer and R. Rojcewicz. (Bloomington & Indianapolis: Indiana University Press, 1998) esp. §6 88-117.

25 Chris Bonneuil, "The Geological Turn: Narratives of the Anthropocene," in Clive Hamilton et al, *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch*, (London, Routledge, 2015) 17-31, 30.

26 Deleuze & Guattari, *A Thousand Plateaus*, 40.

free intensities, but a thinking of stratification itself as composed assemblage of surfaces. As we indicated back in Chapter Two, minimally strata come in pairs. Each strata pair is an assemblage of two surfaces. One surface is 'interstratum'. Yet the other surface faces something different. They call it 'metastratum'. This open surface is the body without organs, or plane of consistency. The relation life/non-life is an assemblage along these lines, a double-articulation of surfaces rather than a negating binary. Non-life is that body without organs, a seismic disturbance that cracks open strata without destratifying.

Dark Earth

When dark-earth is atomised as small-scale molecules of precious geo-biological matrix – tumbling through the upper atmosphere, precipitating down, making red-Mars landscapes out of Siberian snow-scapes or coursing in a river made brown with ancient living topsoil – it is separated from itself, losing mauri or the force of life-connection. Earth, papa, is not singular, it is aggregate, processing as a concerted collective. Plant life is bio-geological, the dermal layer of earth's chthonic matter that protects and connects: The fibrous network of above-earth vegetation layers over papa, enabling the mauri or connectivity of the earth-assemblage. Beneath-ground, subterranean roots further build connectivity while black-carbon structures in soil life, support a host of micro-organisms. Animal life too comes from and becomes-earth or sea, but has a different relationship to the geo-sphere rendered by its mobility through earth, sea or sky. Plant-life's direct connection to the chthonic renders a symbiotic relationality with earth, as earth. Earth, then, is *both* the bio-geology of plant-life and the geo-biology of a dark-earth. Dark-earth is the decaying, de-composing, de-forming of biological life into the geo-biology of the humus-sphere. Re-composed, new iterations of bio-geological life-forms arise (whakapapa) anew out of the geo-biological matrix. Earth practices for wellbeing attend to this fundamental connectivity of the biological and the geological, to enable Earth-wellbeing and life-futuring. Dark earth is tactical decomposing of strategy's perspectivalism. It is the withdrawal of being, of Papatūānuku, as mystery and whakapapa as recitation of that mystery. It is the refusal of the present-at-handness of bringing all things to totalising exposure as stockpiling resource. It is design on small scales, small change tactics where some things matter.

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