

Cracking Open Pedagogy: Learning 'in' Intense Environments

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Abstract

What if a purpose of pedagogy was to create environments where intense experiences of learning can occur? This research is an inquiry into how affect-intense pedagogies work and the work that they do. It focuses on *pedagogic affect* as produced in the situated, sociomaterial practices of three more-than-human environments that create the conditions for intense learning to occur—an outdoor sculpture event in the Hauraki Gulf (Aotearoa New Zealand), a Zombie Apocalypse Survival Course at a human pathology museum (Sydney, Australia), and a fight squad at a Taekwondo club (Melbourne, Australia). What transpires is a *multi-site ethnographic case study of pedagogic affect* in which I engage with empirical material through a combination of conventional and experimental approaches, whereby arts-based practices act to enliven research(er) thinking-doing.

In this space between convention and invention, a Deleuzian inspired rhizocartography unfolds. Pedagogic practices are ‘found’ to occupy in-between spaces or ‘cracks’ that produce affect-intensive learning encounters. These practices and encounters are recast as constituting a *minor pedagogy* which is, in turn, imbricated in a Spinozist ethics of affirmation as taken up by Deleuze and Braidotti. Pedagogy that enacts an affirmative ethics is conceptualised as being inextricably connected to practices that increase the affective capacity of learner-bodies. In *this* inquiry, pedagogies that cultivate the capacity to affect and be affected involve stepping into a crack, where tinkering, experimenting, (un)knowing and caring take place through an approach that blends critique and creativity. I propose that creating the conditions for minor pedagogies to flourish in everyday learning encounters can generate affirmative change in all kinds of ordinary, localised contexts – schools, community sites and elsewhere – that create the conditions to learn intensely.

Declaration

I declare that this thesis comprises my original work towards the Doctor of Philosophy degree except where indicated in the front matter or acknowledged in the text. The thesis is fewer than 100,000 words, exclusive of tables, figures, and references. The research was conducted with the approval of the University of Melbourne's Human Research Ethics Committee (HREC Project ID:1646371).

Sarah Maree Healy

Note on Published Material

Throughout my doctoral study I have been actively involved in presenting papers relating to this research project at conferences, then preparing a selection of these for publication. Some of these presentations and publications were collaborative. I have also exhibited two collaboratively produced artefacts of arts-based datawork. These creative works were accompanied by a double-page spread in the exhibition catalogues where our artist statements and images of the creative work were published. In addition, I have produced one single-authored book chapter, 'Evaluating spaces of pedagogic affect' (Healy, 2016b) and one dual-authored book chapter, 'The gadfly: A collaborative approach to doing data differently' (Healy & Morrison, in press).

This thesis contains material that was included in the following papers and publications:

Healy, S. (2016a). *A brief foray into the field of light: Possibilities for generating affective data*.

Paper presented at the What's working? Informing education theory, design and practice through learning environment evaluation, International Graduate & ECR Research Symposium. Published in the 2016 LEARN International Graduate & ECR Research Symposium Proceedings, University of Melbourne.

<http://hdl.handle.net/11343/191864>

Healy, S. (2016b). Evaluating spaces of pedagogic affect. In W. Imms, B. Cleveland, & K. Fisher (Eds.), *Evaluating learning environments: Snapshots of emerging issues, methods and knowledge* (pp. 235-250). Melbourne: Sense Publishers.

Healy, S. (2018). *Assembling a pedagogy of the undead*. Paper presented at the Transitions18: Continuing the conversation, International Graduate & ECR Research Symposium.

Forum Theatre, University of Melbourne. <http://www.iletc.com.au/melbourne-event/video-transitions18-melbourne/>

Healy, S., Grant, G., Villafrance, E., & Yang, P. (2015). *Beyond the bounded notion of the classroom: A theoretical orientation for evaluating the geographies of new generation learning environments*. Paper presented at the Terrains: Mapping learning environment evaluation across the design and education landscape, International Graduate & ECR Research Symposium. Published in the 2015 LEARN International Graduate & ECR Research Symposium Proceedings, University of Melbourne.

<http://hdl.handle.net/11343/191815>

Healy, S., & Morrison, C. (2017). *The gadfly: Doing data differently*. Paper presented at the Transitions: Inhabiting Innovative Learning Environments, International Graduate & ECR Research Symposium. Published in the Australasia Symposium Proceedings, ILETc, University of Melbourne. https://minerva-access.unimelb.edu.au/bitstream/handle/11343/198087/Transitions_Melb.indb.pdf?sequence=1&isAllowed=y

Healy, S., & Morrison, C. (in press). The gadfly: A collaborative approach to doing data differently. In W. Imms & T. Kvan (Eds.), *Teacher transition into innovative learning environments - a global perspective*. Singapore: Springer.

This thesis contains material exhibited in the following exhibitions and exhibition catalogues. The creative works were carried out in collaboration with other artists as stated. My co-labourers primarily contributed the technical knowhow necessary to produce the digital artefacts. However, as is the nature of artful collaborations, their 'aesthetic touch' is also present in the works.

Healy, S., & Dockerty, H. (2018a). Folding apart I, II [Artist statement]. In K. Coleman, M. Mallos, & W. Imms (Eds.), *Community: Becoming with. Research catalogue of the seventh annual Teacher As Practitioner Project exhibition* (p. 25). Melbourne: Melbourne Graduate School of Education, University of Melbourne.

Healy, S., & Dockerty, H. (2018b). Folding apart I, II [Digital media]. Teacher As Practitioner Seventh Annual Exhibition 'Community: Becoming with': Studiofive, Melbourne Graduate School of Education, University of Melbourne.

Healy, S., & Frencham, M. (2016a). Red t-shirt [Artist statement]. In G. Grant & W. Imms (Eds.), *Resolutions: Creating liminal spaces. Research catalogue of the fifth annual Teacher Artmaker Project exhibition* (p. 36). Melbourne: Melbourne Graduate School of Education, University of Melbourne.

Healy, S., & Frencham, M. (2016b). Red t-shirt [Soundscape and material objects]. Teacher As Practitioner Fifth Annual Exhibition 'Resolutions: Creating liminal spaces': Studiofive, Melbourne Graduate School of Education, University of Melbourne.

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A PhD is not a solo accomplishment. It might be better thought of as a community project than an individual's research. The community that made this project possible is comprised of a range of people whom I'd like to thank. First is my university supervision team, comprised of Dr Di Mulcahy, Associate Professor Wes Imms and Dr Marnee Watkins. Together you have provided the perfect balance of robust critique and sustained belief in both the project and my capacity to do it. You also provided me with invaluable opportunities to connect with 'fellow travellers' and critical friends who not only 'kept it real' but also kept me laughing. I would also like to thank Kerrie Le Lievre for her thorough proof reading of the final document at a time when I had all but run out of steam. Your eye for detail is astounding. Beyond the university, I'd like to thank family and friends who patiently endured my absence while I retreated to the writing cave for what seemed like forever. I'd also like to acknowledge each and every body that participated in the research in some way. Most of you cannot be named individually due to ethics protocols but I want you to know that I appreciate every contribution no matter how small. In particular I want to say to the practitioners who took part, keep doing what you do. I sincerely hope this thesis might somehow contribute something new to your community and your practice.

Table of Contents

<i>Note on Published Material</i>	iii
<i>Acknowledgements</i>	v
<i>Table of Contents</i>	vi
<i>List of Tables</i>	xi
<i>List of Figures</i>	xi
<i>Note on Third Party Copyright Material</i>	xii
Prelude: Why Are You Crying?	1
Map Fragment I: Legend	3
<i>Situating the Research: On a Post-Constructivist Line</i>	4
Why affect?	6
Learning environments	7
What is a learning environment capable of doing?	8
<i>Geopolitical Backstory</i>	9
<i>Research Questions</i>	13
<i>Key Terms Redux: Mapping Definitional Territory</i>	14
Learning.....	14
Intraactivity.....	14
Intense learning environment.....	14
Intense pedagogic affect.	15
Pedagogy.	15
<i>Methodological Decision-making: Attuning to Relationality</i>	16
Foregrounding practice.....	17
<i>Doing a Rhizo-Cartography</i>	18
<i>What Does this Research Do?</i>	18
<i>Topology of Thesis</i>	19
Map Fragment II: Pedagogic Affect in Education	22
<i>Encountering an Established Territory in Education</i>	23
<i>Encountering a Borderland in Education</i>	24

Dissolving boundaries.....	25
Queering pedagogic affect.....	27
<i>Encountering Emergent Territories in Education</i>	28
Affective registers of learning.....	30
Differentiating affect and emotion.....	31
Trans-individual and bodily affect.....	33
Pedagogic affect ‘in’ practice.....	35
<i>Encountering Pedagogic Affect and Affective Pedagogy</i>	37
Pedagogic affect with/in schools.....	37
‘Affective pedagogy’, art and art practice.....	39
<i>Encountering Affectively Intense Material Environments</i>	41
‘Affective events’ and the learning assemblage.....	43
<i>Encountering the Politics of Pedagogic Affect</i>	45
An ethics of vulnerable bodies.....	46
An ethics of affirmation.....	46
An ethics of response-ability.....	47
A politics of hope.....	48
Map Fragment III: Into a Field of Light	50
<i>Doing a Rhizo-cartography</i>	53
<i>Onto-methodology</i>	54
An affective orientation.....	56
<i>Multi-sited Case Study</i>	59
What is my case a case of?.....	60
What is the stuff my case is constituted by?.....	60
What does my case do?.....	60
Site selection.....	61
Participants.....	63
Method.....	64
Limitations of the approach.....	67
Gaining access.....	68
<i>My legs are shaking!</i>	70
Ethical research practice.....	72
<i>Doing Data</i>	74
Cartographic datawork.....	74
Affect ‘in’ datawork.....	76

Topology of lines.	77
Map Fragment IV: Cartography of Sculpture on the Gulf	81
<i>Context</i>	81
The natural environment.....	82
The artist-practitioners.	84
Participants in pedagogic practice.....	85
Assembling a pedagogy of Sculpture on the Gulf.	86
<i>The Journey of a Million Miles Begins with One Step – Tiffany Singh</i>	87
Material practices: learning to be affected.....	89
Multiple materialities.....	92
Sticking points.	95
Collaborative practices.....	99
<i>Kinetic Fungi Tower – Chris Booth</i>	103
Collaborating with more-than-humans.	105
Time and movement.	106
Inventive encounters, delirious affects.	107
Seeding pedagogic relations.....	108
<i>Untitled: Whakanoa – Martin Awa Clarke Langdon</i>	111
<i>Buried Gemstone – Dane Mitchell</i>	115
<i>Summary</i>	118
Map Fragment V: Cartography of a Human Pathology Museum	119
<i>Context</i>	120
Museum practitioners, pedagogic intention.	121
Know Your Enemy.....	122
Ethical relations.	125
Becoming an archive of affects.....	128
<i>Assembling a Pedagogy of the (Un)dead in an Archive of Affects</i>	131
Pedagogic devices.	133
Staging atmosphere, activating bodyminds.....	137
The enticement of dread.....	140
Zombie performances.	141
Zombie narratives.....	146
Humour and hypochondria.....	148
<i>A Rupture: Museum as a Space of Mourning</i>	150

<i>Summary</i>	152
Interlude: Red T-shirt	153
Map Fragment VI: Cartography of a Fight Club	154
<i>Context</i>	156
Cultural practices, pedagogic devices.	158
Collaborative coach practice, process-orientated pedagogy.....	160
Parents' fears and hopes.	165
Ethical practice, affirmative relations.	167
<i>Assembling a Pedagogy of Fighting</i>	174
Contingent agencies.....	174
Coachwork as carework.	176
Building resilience, learning to take a beating.	177
Body-events, embodied minds.....	179
Intuition.....	184
<i>Summary</i>	185
Map Fragment VII: What Happened to Data and Me?	188
<i>Data as Agentic Maps</i>	188
<i>A Rupture</i>	189
<i>Becoming Arts-Based Researcher</i>	190
Interlude: Folding Apart	192
Map Fragment VIII: What Intense Pedagogic Affects Do	193
<i>Bodies</i>	194
Vulnerability.	195
Cracks.	196
<i>Pedagogy in a minor Key</i>	198
Pedagogic devices.	202
Crackwork.	204
Drifting.	215
Carework.	218
Map Fragment IX: Cracking Open Pedagogy	220
<i>Critical and Ethical Thinking-Doing</i>	222

CONTENTS

<i>Ethics of Radical Openness</i>	225
<i>Minoritarian Work</i>	225
<i>Summary of Map Fragments VIII and IX</i>	228
Map Fragment X: Activating a Line of Hope	230
<i>Research in a minor Key</i>	231
<i>Propositions for minor Pedagogy</i>	232
Proposition I: minor pedagogy as creating conditions for learning intensely.	232
Proposition II: minor pedagogy as crackwork.	233
Proposition III: minor pedagogy as ethical practice.	233
Proposition IV: minor pedagogy as a site of radical collaboration.	234
Proposition V: minor pedagogy as response-able and response-abling.	234
<i>Implications for Educational Practice</i>	235
<i>Encountering a Climate Activism Learning Assemblage</i>	236
References	238

List of Tables

TABLE 1. ATTRIBUTES OF SELECTED SITES.....	62
TABLE 2. DATA SOURCES.....	67
TABLE 3. TOPOLOGY OF LINES USED TO ANCHOR THE CROSS-SITE RHIZO-ANALYSIS.....	79

List of Figures

FIGURE 1. TOPOLOGY OF THESIS.....	21
FIGURE 2. WALKING AMONGST THE 50,000 IRIDESCENT GLOBES	50
FIGURE 3. THE LIGHTS GO DOWN AS THE SUN COMES UP, REVEALING ULURU IN THE DISTANCE.....	52
FIGURE 4. MY LEGS ARE SHAKING!.....	70
FIGURE 5. DATA MAPPING – CYCLONE WILMA, A ONCE IN TWENTY YEARS WEATHER EVENT, ENTERS THE HSOTG ASSEMBLAGE.	74
FIGURE 6. DATA MAPPING – AFFECTIVE FLOWS (LINES) AT THE HUMAN PATHOLOGY MUSEUM.	77
FIGURE 7. DATA MAPPING AT HSOTG.....	81
FIGURE 8. PHOTOGRAPH DEPICTING PŌHUTUKAWA PARTICIPATING IN VIRGINIA KING’S INSTALLATION, PHANTOM FLEET.	83
FIGURE 9. PEOPLE’S CHOICE AWARD?.....	84
FIGURE 10. THE JOURNEY OF A MILLION MILES BEGINS WITH ONE STEP – STORIES OF BEYOND REFUGE 2016-17	87
FIGURE 11. A WAKE OF ORIGAMI WASHI BOATS WITH “LITTLE RED THINGS IN THEM”	88
FIGURE 12. TAKING REFUGE	93
FIGURE 13. A GOLDEN RIVER OF BOATS: A COLLABORATIVE ARTMAKING SESSION WITH ARTIST AND AUDIENCE. ..	99
FIGURE 14. LOOKING BACK AT THE KINETIC FUNGI TOWER.....	103
FIGURE 15. THE STRUCTURE MADE OF GNARLED VINE TRUNKS PROVIDES HABITAT FOR SPIDERS, BIRDS AND FUNGI.	105
FIGURE 16. PART ONE OF THE SCULPTURE: A FORMAL ASSEMBLAGE, UNTITLED – WHAKANOVA, MARTIN AWA CLARKE LANGDON.	111
FIGURE 17. PARTS TWO AND THREE OF THE SCULPTURE.....	112
FIGURE 18. DANE MITCHELL, BURIED GEMSTONE.	115
FIGURE 19. BURIED GEMSTONE ARTWORK LABEL.....	117
FIGURE 20. ONE OF FOUR PHOTOS SUPPLIED BY THE MUSEUM TO ACCOMPANY THE TIMEOUT SYDNEY REVIEW.	119
FIGURE 21. GANGRENOUS FOOT.....	123
FIGURE 22. BLACK LUNG.....	123
FIGURE 23. TERATOMA WITH HAIR AND TOOTH.....	124
FIGURE 24. KEEP CALM AND KILL MORE ZOMBIES SIGNAGE AND BLOODY CHILD-SIZED HAND PRINTS.	131
FIGURE 25. A MONTAGE SHOWING A SELECTION OF THE CONSTITUENT PARTS OF THE ZOMBIE PEDAGOGIC ASSEMBLAGE	136
FIGURE 26. EMERGENCY BROADCAST STILLS.....	137
FIGURE 27. STILLS FROM EMERGENCY BROADCAST SHOWING THE SPREAD OF THE ZOMBIE EPIDEMIC	138
FIGURE 28. MATT AS ZOMBIE, ABOUT TO EAT LUNCH. PHOTO SHARED BY MATT’S PARENT.....	145

FIGURE 29. RED T-SHIRT SOUND INSTALLATION (HEALY & FRENCHAM, 2016B) EXHIBITED IN 'CREATING LIMINAL SPACES' AT THE FIFTH ANNUAL TEACHER AS PRACTITIONER EXHIBITION, STUDIOFIVE.....	153
FIGURE 30. A YOUNG 'MANIAC' (BEGINNER FIGHTER) WEARING FIGHT GEAR OVER HIS PAJAMAS	155
FIGURE 31. A SCREEN SHOT OF A POST MADE BY THE CLUB COMMENTING ON THE PICTURES OF COACH AND ATHLETE.	156
FIGURE 32. COACH AND ATHLETE 'OFF THE COURT' AFTER A HARD LOSS.....	169
FIGURE 33. ATHLETES AND COACH 'ON THE COURT' (BOTTOM LEFT AND RIGHT) AND WAITING TO GO ON THE COURT (TOP LEFT)	169
FIGURE 34. MONTAGE OF THE TRAINING ASSEMBLAGE. TRAINING TOGETHER, SWEATING TOGETHER,	171
FIGURE 35. FOLDING APART (HEALY & DOCKERTY, 2018B). ANIMATED MAP EXHIBITED IN 'COMMUNITY: BECOMING WITH' AT THE SEVENTH ANNUAL TEACHER AS PRACTITIONER EXHIBITION, STUDIOFIVE.	192

Note on Third Party Copyright Material

There is third party copyright material featured in the figures listed above. Permissions have *not* yet been obtained to include all content in an open access version of the thesis. Third party copyright permissions apply to figures that include images of:

- artworks attributed to artists other than myself
- human tissue specimens
- educational materials at the human pathology museum
- taekwondo images featuring Channel Seven screen shots and Olympic taekwondo athletes in Australian team uniform.

Prelude: Why Are You Crying?

Topological coordinates: Di

As I enter into this PhD adventure, my attention turns to spaces of learning that have a magnetism, a sense of pull. I notice that while some spaces repel, others have an intensity that draws people in and captivates them. Around this time, I find myself in London with my nine-year-old son, Cohen. Having declared a strong dislike of museums, Cohen is nonetheless keen to visit a number of famous built structures, including St. Paul's Cathedral and Tower Bridge. These sites are, for all intents and purposes, museums. However, according to Cohen, they cannot possibly be museums, "because, they're not boring". Tower Bridge Museum is a highlight, with hours spent combing through a material history of London. We become intimate with all the engineering marvels enshrined within, along with the lives spent (and tragically lost) devoted to the long-lived bridge. The bridge is a living heritage site and is very active in its city's daily life. It does things. It even captures the imagination of a self-professed museum-hater and engages him in a series of memorable learning encounters that extend well beyond the day we visited. I ponder. What is it that makes this space, and others like it feel the way it does, and do what it does? How does it capture an audience? How does its pedagogy come about? What has the site's particular intensity got to do with it? How does this affective intensity participate in the production of pedagogy and space?

Back in Melbourne, Australia, I have another, very different, yet equally formative experience of what I will come to think of as an intense learning space – or better, an environment that sets the conditions for intense learning.

I am an official at a taekwondo sparring competition at an indoor sports stadium. The court I am on today is dedicated to novice and developing players – many of whom have little or no experience of taekwondo sparring in a competitive environment. The referee calls "Chung! Hong!" (Red, Blue). Two players in the 15–17 year old male division step onto the court for their match. The referee starts the fight, I start the clock, and it's all on. Forty-five seconds into the first round there is an exchange of kicks, and the player in the blue shield hits the floor holding his leg, moaning in pain. He is down by several points, he has sustained an impact to his thigh, and he looks like he doesn't want to go on. The player's coach comes over, instructs him to give it a rub and to get up. The player doesn't respond to his coach, so we call a medic who administers some ice spray. There are twenty seconds left of injury time, and the player must get up or face disqualification. In this moment the coach must decide what is in the best interests of her athlete and act. She shouts "Twenty seconds, Will! Get up!" She connects. Suddenly, with no time to

spare, Will converts pain into resolve. In an instant, he is on his feet, in fighting stance, ready to finish the match. Will regains his composure and goes on to win the fight in its closing seconds. As he walks off the court with his coach, he breaks down into tears. She asks, "Why are you crying?" and Will replies, "I won!" The tears are an expression of joy. He didn't know he had it in himself until the moment he did it. He didn't know he could dig that deep and turn such an adverse situation around. He didn't know what his body was capable of doing. He has amazed himself, and a flow of raw emotion follows. The coach is also touched. It has been an intensely affective encounter – even I, as a court official, am touched.

This experience sticks with me. I slowly make sense of it, gradually becoming aware of the full complexity of the scenario which surges with fear and hope, pain and triumph. These affective flows bear an uncanny resemblance to those activated in the Tower Bridge Museum. There is a connection here, but it is not yet thinkable. There are micropolitics at work here too, and an ethical dimension to account for. I wonder how this all fits together. What can an encounter with the likes of a living bridge and a full contact sparring match teach us about the relations of affects, pedagogy, and the learning environment?

Map Fragment I: Legend

Topological coordinates: C2

Museums and sporting competitions generate swarms of affects that can, and do, act in pedagogic ways. When this occurs, the site and event may be regarded as an affectively *intense* learning environment, or an environment that creates the conditions for learning intensely. The premise of this project is: learning environments of an intense kind are fertile ground for empirical research seeking to understand the pedagogic potentials of affect – or how affects act pedagogically to enhance or diminish the bodily capacities of learners.

The broad aim is to study pedagogic affect in situated practice so as to produce a situated knowing of pedagogic affect and the work that it does. To achieve this, the research is configured as a *multi-site ethnographic case study of pedagogic affect* as generated in three affectively intense learning environments: a human pathology museum, a taekwondo fight club, and a large-scale outdoor sculpture event. The focus of this study is on how a range of social and material entities *intraact* in situated practices to create what Ellsworth (2005) refers to as ‘the force of pedagogy’ (p. 35) and what I refer to in this research as pedagogic affect.¹ It seeks to develop knowledge about how more-than-human practices produce pedagogic affects – and their effects.

The research design presumes that studying pedagogic affect as it emerges, circulates and disperses *in situ* will make it possible to develop an empirically based, theoretically engaged analysis of the ethico-political effects of pedagogic affect. In this research, neither pedagogy nor the learning environment is conceptualised as a pre-existing phenomenon, but instead as “an ongoing occurrence, a happening in the here-and-now, something that does not sit still but changes moment by moment, group by group” (Taylor, 2018, p. 157). This involves releasing and redirecting the forces locked up in mind/body, cognition/emotion, knower/known, social/material, school/non-school binaries, addressing them instead “as complex, moving webs of inter-relationalities” (Ellsworth, 2005, p. 3). This approach offers possibilities for dynamic re-imaginings of educational practices that move beyond dominant approaches that tend to essentialise and instrumentalise pedagogy and the learning environment.

¹ Pedagogic affect as a concept was conceived of by Watkins (2006) and then developed further in subsequent publications (see Watkins 2010, 2011, 2016).

Throughout this research, affect acts as a powerful conceptual tool that enables a critical attunement to the affective flows that emerge as the research, researched and researcher are enfolded (Semetsky, 2009), becoming research assemblage (Fox & Alldred, 2015). The research assemblage is produced in a range of theoretical, methodological, and arts-based practices that invoke a rhizomic image of thought (Deleuze & Guattari, 2013; Lenz Taguchi, 2013). These inform an emergent rhizo-methodology² that underpins the cartography that unfolds. By way of mapping the accumulation, circulation and dispersal of pedagogic affects ‘in’ intense learning environments, this research seeks to further explore what (more) a learning environment can *do*. The hope is that this will expose their educational, ethical and political potential, which, to paraphrase Massumi (2002a, p. 31), is defined by their connectedness: the way they are connected and how intensely.

Situating the Research: On a Post-Constructivist Line

This research takes up what is currently “an evolving post-constructivist account of learning” (Roth, 2015, p. 40). A post-constructivist approach characteristically leads with practice, acknowledges multiplicity, attributes agency to nonhuman actors, and seeks more-than-linguistic approaches to sensing the world. The intention of taking up a post-constructivist line is not to leave the work of social constructivist scholars behind, nor to replace the intellectual with the affective. Instead, it is more about adding the conjunction ‘and’ (Deleuze, 1995; Deleuze & Guattari, 2013) to make ‘social constructivist *and*’ – acknowledging the work that has gone before as well as an intention to add to this in affirmative ways. “AND, ‘and ... and ... and ...’ is precisely a creative stammering” (Deleuze, 1995, p. 44) that generatively disrupts assumed ways of thinking-doing in the world.

The move to simultaneously envelop and challenge a social constructivist worldview is important because while social constructivist approaches have made valuable contributions to

² See Chapter 3 for a detailed explanation of how these resources are combined to produce the specific rhizo-methodology of this research (also see Henderson, 2014; Hetherington, 1997; Honan 2007; Masny, 2014, 2016; Sellers, 2013, 2015; Sellers & Honan, 2007).

educational theory and practice, they also have critical limitations.³ Many of these limitations stem from the proposal of a reality that occurs in an *exclusively social world* that is made up of distinct components that *interact* “rather than a complex field of material-discursive practice” (Rouse, 2002, p. 14). Research that takes a social constructivist worldview may adopt a ‘perspectivist’ approach which involves seeking multiple perspectives on phenomena, but does not seek to understand the multiplicity of lived reality (Law & Mol, 2002). This can lead to a neglect of the complex material, spatial, affective and more-than-human dimensions of lived experience (Asdal, 2005).

An implication of this is that a social constructivist approach cannot explain every type of learning experience, particularly experiences of learning that are knotted up in non-conscious corporeality (Massumi, 2002b), becoming aware (Roth, 2015), hope, fear and contingency (Spinoza in Gatens & Lloyd, 1999), discomfort (Zembylas, 2015), accumulation of affect (Watkins, 2010), desire (Albrecht-Crane & Daryl Slack, 2003; Watkins, 2010; Zembylas, 2007b), aesthetics (Hickey-Moody, 2013a, 2016), and unthought thoughts or intuition (Semetsky, 2013). As Mulcahy (2016) claims, social constructivist approaches are underwritten by representationalist knowledge practices which make a clear cut “between matter and meaning with the latter being the privileged term and practice. Knowledge is treated as something that is both independent of, and contained within, singular entities precluding a view of learning as affective flow” (p. 211). Through its focus on affect, this research presents an alternative to the social constructivist approaches to teaching and learning which have historically privileged the cognitive, linguistic and representational while neglecting affective ways of knowing and ‘affective knowledge’ (Semetsky, 2009). This, in an interesting turn of events, connects with the lesser known, end-of-life works of Lev Vygotsky,⁴ who had begun to theorise the affective and the intellectual as indivisible (Roth, 2017; Watkins, 2010).

³ The limitations of social constructivism are becoming increasingly prominent in educational literature and are discussed more fully elsewhere (see Asdal, 2005; Lenz Taguchi, 2010; Mulcahy, 2019; Roth 2013, 2015, 2017; Rouse, 2002; Semetsky, 2009). It is argued that the limitations of the social constructivist approach stem from an over-emphasis on social, rational, cognitive and linguistic ways of knowing and coming to know at the expense of material, affective and embodied ways. This is linked with an epistemological separation of human from environment, subject from object, knower from known, and has ethical, ontological and epistemic implications. The associated act of elevating *human cognition* above other ways of knowing is a humanist enterprise that has been contested by posthuman, (new) material, and socio material scholars (see for example: Fenwick, Edwards & Sawchuck, 2011; Mulcahy, 2019; Snaza, Sonu, Truman & Zaliwska, 2017; Taylor & Hughes, 2016). They counter-argue that humans and non-human matter are co-implicated (more-than-human) and that the human subject is “already part of the substances, systems, and becomings of the world” (Alaimo, as cited in Davies, 2018, p. 114).

⁴ Russian-born Lev Vygotsky’s (1896–1934) contribution to educational theory underpins the contemporary social constructivist learning theories that influence much contemporary Western educational policy and practice. Vygotsky’s untimely death at the age of 37 meant that his later work remains unfinished.

Setting the study in learning environments of an *intense* kind is a deliberate move to foreground the pedagogic role of bodily *and* trans-individual affectivity in a range of learning experiences, with experience being what “provides us with the capacity to affect and be affected” (Semetsky, 2009, p. 443) and the experience of learning intensely involving an encounter (or series of encounters) with “a population or swarm of potential ways of affecting or being affected” (Massumi, 2002a, p. 5). Since affects are forces that connect bodies and things and ideas and spaces, experiencing intensified affect is about experiencing intensified potential for connectedness, which in turn becomes the source of a body’s power (Semetsky, 2012). And it is precisely this that implicates pedagogic affect in ethics and politics – and makes it a consequential pedagogic force worthy of attention.

Why affect? While the significance of the affective domain has been well established in education, it is generally framed by psychological, cognitivist, representational and constructivist traditions that tend to value the rational and treat affect as a separate (lesser, irrational) consideration. However, affect’s central role in embodied learning (Hickey-Moody, 2013a, 2013b, 2016; Mulcahy, 2012, 2019; Mulcahy & Witcomb, 2018; Niccolini, 2016; Semetsky, 2013; Zembylas, 2007c, 2017) means that by *not* adequately attending to affect in education, we may actually be performing harm (neglect). We know that “Affect is as material and impactful to teaching and learning as books, paper, or the melamine of desks” and “Affect moves knowledge” (Niccolini, 2016, p. 230). We also know that affect has the power to attract attention, excite, connect and provoke new ‘socially just’ ways of relating to others (Mulcahy & Witcomb, 2018). Pedagogy that attends to affect also has the power to astonish, surprise and incite admiration (Roth, 2017) as well as stick, slide and disgust (Ahmed, 2014). These things combine to provide a warrant for further research into how affect acts pedagogically to not only enhance or diminish the potential for learning, but also nudge open the door to exploring the ethical and political implications of pedagogic affect.

Attending to affect also prompts a consideration of how pedagogy might do more, and how learners might experience more. This links to what Whitehead (1959) identifies as an aim of education – which is to bring the emotional currents made up of feelings, hopes and desires together with the intellectual activities which form an individual’s “understanding of that stream of events which pours through his life, which is his life” (p. 194). Developing this affective knowing involves a creative process that cannot be reduced to static recognition or construction of ready-made concepts (Semetsky, 2009). Rather, affective ways of coming to know are lively (moving, even). Creating the conditions for affective knowledge to occur involves animating the affective dimension of teaching (Albrecht-Crane & Daryl Slack, 2003).

Arguably, the “spark of vitality” (Whitehead, 1959, p. 193) required to animate pedagogic affect has the potential to enliven learning and protect against ‘dead knowledge’ and ‘inert ideas’ (ibid, p. 192) while creating the conditions for more meaningful learning experiences by transforming pedagogy into something “that engages students’ and teachers’ bodies and affects in a ‘love affair’ with bodies of knowledge” (Zembylas, 2007c, p. 28).

Learning environments. Historically, learning environments have been perceived as the built environments operating as a physical backdrop to the teaching and learning that takes place within. As such they were treated as “a material location in which education research is located” (Leander, Phillips, Taylor, Nespor, & Lewis, 2010, p. 331). However, following the identification of what Fisher (2004, p. 36) describes as “a deep spatial silence” at work in schools, there have been moves to rethink learning environments as “a dynamic multiplicity that is constantly being enacted by simultaneous practices-so-far” (Fenwick et al., 2011, p. 11). Sites of learning have increasingly become understood as physical, conceptual and/or virtual spaces of learning that can be seen as networks, systems or ecologies, hence the related term ‘learning environment’.

Space is an active participant in the learning environment thus conceived, garnering agency (and also power) through affect (Watkins, 2017). Considering the affective forces that space produces in relation to one or more entities is a mechanism for transforming how the learning environment is commonly understood. What has been thought of as an inert, passive, backdrop that serves to ‘contain’ mostly human activity (space as container) turns into an active participant in the ongoing (re)production of all kinds of environments, including learning environments. Lefebvre’s (1991) idea of the social production of space can be credited with making an early move towards a more recent understanding of space as a participant in its own production, as well as being productive of other entities – including pedagogy. Achieving this understanding has taken decades and the input of many scholars, often from the human geography traditions.⁵

Combining Lefebvre’s understanding with a sociomaterial sensibility and a Deleuzian ontology of becoming – a continually emergent condition – I conceptualise learning environments not as pre-existing or fixed entities, but as continuously assembling and reassembling in a range of pedagogic practices that involve not only space but also bodies and things and ideas, all of which perform a learning environment into existence in ongoing practices of becoming-with the world. So a learning environment can also be understood as a

⁵ For example: Massey (2005), Soja (1996), and Thrift (2008).

learning assemblage,⁶ so much so that in the specific context of this study these terms are more or less interchangeable. The learning environment pulses with affectivity which constitutes its capacities to act, or its potential. Its potential is defined by its connectedness – the ways in which it connects and is connected – and the intensity of that connectedness (Massumi, 2002a, p. 31). What is significant to this research is not so much what a learning environment is, but what it can do – in particular, what an *intense* learning environment can do.

The wager of this project is that inquiring into pedagogic affect as it unfolds in a range of environments that create the conditions for learning intensely will produce knowledge of how pedagogic affect works, *in situ*, and better account for the pedagogic practices that produce and are produced by micropolitical forces. Massumi's (1995, 2002a) theorisation of intensity suggests that intense learning environments will intensify the bodily potentials of learners. It also suggests that learning intensely is about being able to access experiential 'depth' – the experience of the unique depth and breadth of an experience (Massumi, 2002a, p. 3). I wanted to know what we might learn by exploring these concepts in an empirical context and how knowledge of the practices that produce intense environments might contribute to existing ways of knowing pedagogy and affect. So the sites of research (learning-environment assemblages) were purposefully selected on account of their capacity to generate intense data related to pedagogic affect, in a research practice referred to as "intensity sampling" (Patton, 1990, p. 171). It was thought that data generated in sites that give rise to intense affectivity would provide a richness of empirical material necessary to better understand the mechanisms involved in mediating pedagogic affects, and their intended or unintended effects, for example by drawing attention to how certain practices (such as injury time in a taekwondo competition) pattern affects in particular ways (capacitating the athlete to fight on – or not) to create the conditions for intense learning encounters to occur (whereby the athlete is able to do something he never thought he could do – or not).

What is a learning environment capable of doing? Spinoza (2018, p. 97) makes the critical observation that "no one has yet determined what a body can do". Subsequently,

⁶ Assemblage is a Deleuzian concept that is regularly coupled with affect. I unpack the idea of the affective assemblage in the methodology chapter of the thesis, providing more theoretical and methodological detail. My use of learning assemblage as a concept is ontologically different from how Dovey and Fisher (2014) use their concept of complex adaptive assemblages. The latter rests on the idea that knowledge and things exist a priori, whereas my conceptualisation of assemblage holds to the idea that *intraactions* are the building blocks of reality and therefore knowledges and things do not exist outside of the (ongoing) events that bring them into being.

according to Deleuze's (1990) account of Spinoza,⁷ the fundamental question becomes, what is a body capable of? A Deleuzian understanding of the assembled body enables a learning-environment assemblage to be conceived of as a body also and so, in an extension of Spinozist thought, *the fundamental question for learning environments research becomes one of what a learning environment can do* – not what its essential attributes or design affordances are. Instead, what a learning environment can do is inextricable from its capacity to affect and be affected, its potentials, its connectedness, and the intensity of its connectedness. Hence the focus on *intense* learning environments, or environments that create the conditions for an intensive way of learning.

There is a link here with the 'sites of pedagogy' selected for Ellsworth's (2005) inquiry into what she calls 'anomalous places of learning', which could also be conceptualised as intense learning environments – particularly the U.S. Holocaust Memorial Museum – with Ellsworth describing them as "highly charged event potentials" (2005, p. 11). Drawing on Rajchman, Ellsworth argues that the value of such 'anomalous sites of pedagogy', which translate into my study as intense learning environments, is in their potential to "diagnose the unknown or unforeseen [pedagogical] forces knocking at the door" (original insertion, Ellsworth, 2005, p. 6). I would add that they also have the potential to extend our conceptions of what a learning environment can do.

Geopolitical Backstory

The impetus for this research is deeply implicated in the context of *this* time and *this* place and *this* researcher. In what follows, I provide you with a (partial) geopolitical backstory to give you a sense of the personal, political and geographical circumstances that flow into this research assemblage. Although this project was predominantly conducted in Australia, there is some seepage across the Tasman Sea to Aotearoa New Zealand. I am fifth generation Pākehā, raised in New Zealand in a family that valued education, the natural environment, artistic endeavours, and local community. In my household, as I grew up, conservationists were valorised, environmental activism celebrated, and memberships of the likes of Forest & Bird and Greenpeace were a source of pride. Decades later, I am a citizen of Australia, living and working on the traditional lands of the Wurundjeri people from the Kulin Nation, to whom I pay my respects. My heart now belongs to two lands and this project bleeds across them, with sites of research in both.

⁷ See *Expressionism in Philosophy: Spinoza* (Deleuze, 1990). See also Albrecht-Crane and Daryl Slack (2003) for a more detailed account of Deleuze's uptake of Spinoza's theorisation of the body.

While Australia and New Zealand are vastly different in many ways, they share certain trends in education, including a dominant discourse of schooling that is underscored by social constructivist accounts of teaching and learning. Among other things, these have led to the privileging of student-centred approaches with teachers acting as learning facilitators, without critical consideration of what is lost in this process (Watkins, 2006, 2012). This shift from teacher as ‘sage on the stage’ to ‘guide by the side’ is accompanied by growing expectations that students will take responsibility for their own learning. Meanwhile, teachers face increased surveillance and accountability measures that are geared towards ensuring teacher quality and productivity (Davies, 2018), placing them precariously in the crosshairs of public debates about the inadequacies of contemporary schooling.

Underscoring these trends in the Australian and New Zealand education systems is the influence of neoliberal politics that promote an essentialised notion of the responsible subject⁸ – a self-determining, rational-thinking, competitive individual who is supposedly free to make choices that will make him a successful learner or an effective teacher. Individual learning plans, personalised curriculum, and student-led inquiries are associated devices that foster ‘intensified individualism’ (Davies, 2018). A problem here is that individuals are not entirely free to make choices, let alone ‘good’ choices,⁹ because they exist within a unique and complex web of social and material forces that act on them in ways that they do not fully know or control.

For example, in the 1980s my child-self was deeply troubled by the environmental degradation and suffering caused first by U.S., then French, nuclear testing in the Pacific. So when two French secret agents bombed Greenpeace’s flagship, the Rainbow Warrior, as she was moored in Auckland’s Waitemata harbour in June 1985 – preparing to sail to Mururoa Atoll to protest France’s nuclear testing program in the Pacific – it was as if New Zealand was under attack. As an outraged teen, ‘I’ refused to learn French at school. In a somewhat futile act of everyday resistance, I would turn up to class, sit at my desk, and simply not engage. I inevitably failed French. The bombing of the Rainbow Warrior was an affectively intense,

⁸ Discourses of responsibilisation have, in recent times, become almost synonymous with neoliberal politics and notions of self-governance; see Rose (1996) for a more detailed account. However, as Trnka and Trundle (2014) argue, responsibilisation and linked concepts of responsibility extend into a wide range of practices that move beyond what they describe as “political rhetoric of neoliberal discourses” (p. 136) and can take on multiple, sometimes conflicting, meanings and enactments. Davies (2018, p. 115) notes that “Critique, and the openness of poststructural thought, are anathema to neoliberal bureaucrats”, providing different (ethical) ways of thinking-doing responsibility.

⁹ See Mol’s (2008) *The Logic of Care: Health and the Problem of Patient Choice* for a comparison between a logic of choice and a logic of care and an analysis of the implications of each logic/system for health practices. Arguably, many of the points Mol makes translate directly into educational practice. Even the title of her book could translate as ‘The Logic of Care: Education and the Problem of Student Choice’.

political and pedagogic event that, when reported by the media, incensed much of the nation, including me. I expressed this by resisting a directive to learn the French language. I did not simply wake up one day and make a ‘rational choice’ to fail French, as if there was another option (my teenaged self would attest that it was the only responsible choice available at the time). Instead, failing French was the materialisation of complex social, material and political forces that cut across the micro and macro levels of my existence over a long time. Arising from this is the question of how responsibility is distributed across other geopolitical actors in this assemblage of failing French. The degree of free, rational, individual choice involved is contestable, as is the distribution of personal and collective responsibility.

Despite the complex, deeply contextualised realities of schooling that are playing out across diverse geographical and cultural landscapes, both Australian and New Zealand governments are engaged in efforts to nationalise curriculum, implement standardised testing, and relieve national anxieties surrounding PISA rankings through systematic, evidence-based school improvement. These approaches are caught up in a parallel drive to meet the so-called future needs of twenty-first century learners, which is partly being achieved through funding policies geared towards greater provision of a particular type of learning environment, an ‘innovative’ learning environment (ILE).¹⁰

While there is no commonly agreed definition in the literature, ILEs¹¹ have been conceptualised as ‘complex adaptive assemblages’ (Dovey & Fisher, 2014) inhabited by teachers and learners who *use* their design attributes in their everyday practice to engage in innovative teaching and learning activities. It has been noted that “A design may be deemed ‘innovative’ but it only becomes an ILE once its inhabitants (teachers and students) teach and learn innovatively within them” (Mahat, Bradbeer, Byers, & Imms, 2018, p. 8).

This definition corresponds with a trend of placing increased emphasis on the importance of practice when conceptualising the learning environment and conducting

¹⁰ This research is not about ILEs. However, it is part of the backstory because ILE-focussed research is progressively carving out territory in the broader learning environments field – a field which this research speaks to. Also, perhaps even more significantly, it was the Innovative Learning Environment research group at my host university that housed and nurtured this project in its early stages before supporting its evolution into a study leading with affect.

¹¹ ILEs take the form of contemporary educational spaces designed to foster ‘21st Century skills’ of creativity, collaboration, communication, and critical thinking (OECD, 2013). ILEs, also referred to in the literature as new generation learning environments (NGLEs), flexible learning spaces (FLSs) and modern learning environments (MLEs), are characterised by their ergonomic furniture, integrated technology, flexible use of space, and moveable walls – sometimes positioned as a solution to the perceived ills of traditional ‘industrial-aged’ school learning environments that are characterised by conventional classrooms with their walls and doors and desks in rows.

learning environments research.¹² Yet the practice component remains relatively under-theorised in relation to the learning environments literature (Ellis & Goodyear, 2018). Additionally, although it is recognised that a practice-based approach to learning environments research holds promise, interdisciplinary developments in theorising and studying practice – such as contributions from Studies of Technology and Science (STS), organisational studies, and arts-based researchers – are yet to be fully explored. Instead, much learning environments research has been focussed on formulating best practice approaches for teachers to make learning environments operate ‘successfully’, and in the case of an ILE, innovatively. Although this move has been motivated by a desire to improve educational outcomes through evidence-based and evidence-informed practices, the realities it enacts are troubling.

Adhering to scripted ‘best practice’ protocols alone does not necessarily improve learning or produce *the* best practice, given the complex specificities and contingencies of any situation (Biesta, 2009, 2010; Fenwick, 2014; Hayes et al., 2017; Mol, 2002; Petersen, Reimer, & Qvortrup, 2014; Zembylas, 2007b). Biesta (2010) argues that ‘what works’ still won’t work because of the politics of what constitutes evidence and how the notion of evidence is problematically wrapped up in issues of power, normativity and complexity reduction, which flows into tendencies to “reduce the complexities of teaching and learning in an increasingly complex and diverse world” (Lenz Taguchi, 2010, p. 4). However, if not an evidence-based approach to ‘best practice’ and ‘what works’ – then what? The recent turns to affect (Clough & Halley, 2007) and practice (Callon, 1986; Feldman & Orlikowski, 2011; Latour, 1987, 2005; Mol, 2002; Theodore R. Schatzki, Knorr-Cetina, & Savigny, 2001) have opened up alternative ways of thinking-doing educational research¹³ that engages with the dynamic, relational and performative. So too has the proliferation of theoretical and methodological contributions of the ‘posts’ (Lather & St. Pierre, 2013) and their (re)newed attention to materiality, affectivity, multiplicity, complexity and the contingent agencies of things.

In education, these lines of inquiry have made it possible to reconsider pedagogy and the learning environment as not fixed entities that exist to replicate a predetermined outcome (e.g., innovation) but living, agentic assemblages that can be understood in terms of their potential to affect and be affected. The implications of this are political (and hopeful). With

¹² See, for example, Ellis and Goodyear’s (2018) practice-focussed edited collection about spaces of teaching and learning. Also refer to the OECD 7+3 framework for an approach to organising a wide range of ILE practices (OECD, 2017).

¹³ See Gherardi, Murgia, Bellè, Miele, and Carreri (2018) for an in-depth exploration of the intersection of the turn to practice and affect.

affect we are not alone (Massumi, 2002b). And with affect there is the ever-present potential for change in capacity, with this ever-present potential being inclined to move in an affirmative direction: “When you affect something, you are at the same time opening yourself up to being affected in turn, and in a *slightly different* way than you might have been the moment before” (emphasis added, Massumi, 2002a, p. 3). The ‘slight difference’ that Massumi refers to is important here because it “it is the process and effects of *differing* and differentiation – that is, *difference in itself* as an ongoing flow of affirmative relations – that is constitutive of existence” (original emphasis, Deleuze, as cited in Lenz Taguchi, 2013, p. 712). That is, attending to affect makes it possible to think-do difference affirmatively (rather than ‘in opposition to’) and thus generate the conditions for invention, creativity and transformation. A radically different approach to thinking-doing innovation in a given learning environment is made possible, one that does not seek to replicate but instead emphasises indeterminacy, openness and ethico-political accountability (Braidotti, 2006b).

Research Questions

The questions used to guide the study continuously evolved in response to the changing conditions of the researcher-researched-research entanglement. There was no seismic shift, but lots of incremental shifts in thinking-doing that led to periodic refinements taking place. The questions that I present here settled in the later stages of the research project. The primary question used to guide this empirical engagement became:

How is pedagogy practised in intense learning environments?

This can be further broken down into two parts, comprising:

- 1) *What do intense pedagogic affects do? and, relatedly,*
- 2) *What are the effects of intense pedagogic affects?*

The discussion sections of this thesis are organised around these sub-questions which, in reality, only solidified in relation to the intense writing-reading-data work necessary for the discussion to reach landfall. What remains constant throughout the study is a sustained interest in how pedagogic affects intensify the experience of learning and what the effects of this intensification might be. I also maintain a critical awareness that educational research that adopts a Deleuzian approach to affect attracts criticism because of its tendency to favour the poetical in lieu of the political, losing its bite in the process (interview with Megan Boler, Boler & Zembylas, 2016). The questions (were) are therefore open-ended but also purposefully

formulated to prompt consideration of the ethical and political implications of pedagogic affect (that is, its effects).

Key Terms Redux: Mapping Definitional Territory

The questions themselves may sound simple but are actually quite complex. Before moving on I formalise some of the concepts that inform these research questions to enable a better understanding of the complexities involved – and how the theoretical resources of the project are combined.

Learning. Learning, in this research, involves ongoing participation in a relational world full of social and material forces. Bringing aspects of Deleuze and Guattari (2013) together with Barad (2007), these forces can be understood as affects or intensities that emerge through ‘*intraactions*’ involving humans and otherwise (Haraway, 2016a). And so learning in this research is understood to stem from “an experiential and experimental encounter that would force us to think and learn” (Semetsky, 2009, p. 444), with bodily affects *and* trans-individual affects being critical factors in this learning encounter. An intense encounter with affect is marked by bodily change – in particular, a change in the body’s power to act (Semetsky, 2012). Thinking with and through affect in relation to learning makes it possible to better understand how the force of pedagogy is involved in the fleshy, bodily, affective processes of *becoming aware* (Roth, 2017) while also existing amongst and between bodies (human and otherwise). This research thus shares the position that “While irreducibly bodily, affect is not exclusively a matter of individual human bodies” (Mulcahy, 2012, p. 11) and also that “while affect can be explained beyond the subject and subjective, it should not be treated in opposition to it” (Dragojlovic, 2015, p. 317).

Intraactivity. *Intraactivity* is a concept introduced by Barad (2007) to convey that the world is not made up of discrete, separate, pre-existing entities that interact: for example, pre-existing learning environments such as classrooms and ILEs within which discrete individuals interact and construct knowledge. Instead, reality emerges through an iterative process of becoming-with, where *intraacting* entities are inseparable from each other.

Intense learning environment. In this research the learning environment is conceptualised as an agentic learning assemblage (Deleuze & Guattari, 2013), or a learning-environment assemblage. Space becomes an active participant with/in it – along with a whole lot of other people, things and ideas. Affects pulse through a learning-environment assemblage, causing it to hold together or fall apart (Müller & Schurr, 2016), and it is understood to produce degrees of intensity that can be thought of as populations or swarms

(Massumi, 2002a). The intensity of the learning-environment can be gauged by the degree to which it creates the conditions for ‘connectedness’ and experiencing the ‘depth of experience’.

Intense pedagogic affect. On a Deleuzian-Spinozist line, affects work to change a bodily capacity to act, or its potentials. Affect can thus be understood as a *constitutive relational dynamic*, a force or intensity that emerges in a wide range of social and material practices, and not just those involving human bodies. When affects act on a body to enhance (or diminish) its capacity to think and do differently, they can be said to do pedagogic work, becoming pedagogic affect. The concept of pedagogic affect accounts for how not only people but also things and ideas and spaces have agency (the power to act) and can act pedagogically, or teach. Intense pedagogic affects, much like intense learning environments, can be gauged by the degree to which they create the conditions for learners to experience ‘connectedness’ and ‘depth of experience’.

Pedagogy. Pedagogy, as a concept, commonly attends to “the *process* through which knowledge is produced” (original emphasis, Lusted, 1986, p. 12), and involves the *intraaction* of human, material and discursive agencies. Thinking of pedagogy as an *intraactive* process that produces knowledge “gives substance to the nature of relations [e.g., affects and agencies] ... It refuses any tendency to instrumentalise the relations ... or give value to one agency over another [e.g., human, material or discursive]” (ibid, p. 13). Moreover, “it recognises the productivity of the relations, and it renders the parties within them as active, changing and changeable agencies” (ibid). This pedagogical orientation “suggests there is no primary separation of teacher or student, or space or knowledge. They remain, at all times, entangled, at their very origin, already co-constituted and co-constitutive” (Hinton & Treusch, 2015, pp. 12-13). As a consequence, the teachers and students and materials and spaces and knowledges involved in a pedagogic process are entangled and “can never, strictly speaking, be *only* human” (original emphasis, ibid, p. 13).

As a pedagogy unfolds, it may act on learner bodies (as well as other bodies involved) to augment or diminish, assist or restrain their powers of action and thought. The correlation between increasing a body’s power to act and increasing a body’s power to think is captured by Spinoza’s (2018) proposition that “The idea of anything [e.g., pedagogy] that augments or diminishes, assists or restrains our body’s power of action, also augments or diminishes, assists or restrains our body’s power of thought” (p. 104).

Approaching pedagogy in this way expands thinking about what pedagogy is and, perhaps more significantly, what it *does*. The way it plays out in this thesis¹⁴ connects with Andrews' (2019) conceptualisation of a minor sociology, which is in turn developed through an engagement with Deleuze and Guattari's writing on minor literature and minor language. As with a minor sociology, pedagogy conceived in this way "embraces the speculative and playful as it takes seriously what sociology [or pedagogy] can be for the 21st century" (Andrews, 2019, p. 386).

Methodological Decision-making: Attuning to Relationality

This research is informed by a relational understanding of the world, inspired by a process-orientated philosophy as taken up by Deleuze and Guattari – but also draws on the work of materialist scholars, such as Karen Barad and Rosi Braidotti. Barad's (2007) concept of *intraaction* is particularly helpful for emphasising that entities, such as learning environments, do not exist prior to the relations through which they emerge – in practice. In a process-orientated world, people and things and words and ideas and spaces are not understood as separate, ready-made entities, "but are intra-active, affecting each other, each with a vital capacity to affect and be affected" (Davies, 2018, p. 116).

This makes way for a broader conception of pedagogy that encompasses the transformative capacities of a 'pedagogy of matter' (Hickey-Moody & Page, 2016). Such pedagogies cannot be understood as a pre-existing thing (or skill) possessed by (human) teachers, but are continually emergent and distributed across the social-and-material. Affect provides a way for material agencies and the distributive nature of more-than-human pedagogies to be conceptualised, sometimes leading to the linked concepts of affect and agency being used interchangeably. The logic here is that since affect designates the change in a bodily capacity to act, an enhancement or diminishment of capacity to act can also be understood as an enhancement or diminishment of agency (Slaby & Mühlhoff, 2018). Material and human *agencies* are mutually formative and emergent (Barad, 2007). Likewise, material and human *pedagogies* are also mutually formative, emergent. And they cannot be assumed to involve encounters between humans. All sorts of things can teach, by enhancing or diminishing what a body (human and nonhuman) has the capacity to do – its power to act or not, or its agency (Healy, 2016b).

¹⁴ This understanding of pedagogy was generated through a sustained engagement with 'pedagogy' over the course of the research project and, significantly, leads to the discussion of a minor pedagogy, affectivity and affirmative ethics in Map Fragments VIII, IX and X. And, while I am hesitant about introducing the concept of minor pedagogy at this early stage of entering the thesis-reading-research assemblage, normative expectations of thesis writing have required me to do so.

This aligns with what Bennett (2016) describes as a collaborative ‘world *with us*’ type of posthumanism. It is not an anti-human or apocalyptic approach but a more-than-human posthumanism, committed to thinking-doing educational research that does not centre around the rational human subject. It involves finding appropriate ways to inquire into “how humans build their competency to know and act in a ‘more than human’ world, while already being in (and part of) that world” (L. Bennett, 2016, p. 73). This has profound ethical implications. This project seeks to address these by embodying what has been dubbed response-able research,¹⁵ whereby the research-researcher-researched remain entangled, so much so that much of the research materialises through what might be described as a radical collaboration with more-than-human others.¹⁶

In this particular project it entails attending to both the ethico-political and performative dimensions of research practice – and the range of bodies involved. As Barad explains, “All bodies, including but not limited to human bodies, come to matter through the world’s iterative intra-activity, its performativity” (interview with Karen Barad, in Dolphijn & van der Tuin, p. 69). This implies an ongoing commitment to generating alternative and affirmative ways of thinking-doing research while maintaining a critical edge (Braidotti, 2013b). I hence embrace the experimental, deploying an arts-based approach to datawork in an effort to resist instrumentalist approaches to ‘extracting data’ and performing an analysis on them as if conducting an autopsy of the dead.

Foregrounding practice. Practice brings the threads of relationality, *intra*activity, affectivity, and performativity together. Social and material realities are made up of practices (Feldman & Orlikowski, 2011). Practices produce multiple and indefinite realities that intersect, overlap and interrupt each other (Law & Mol, 2002; Mol, 2002). They are produced in encounters between people, things, discourses, and spaces – all of which produce affects or, put simply, “a sense of push in the world” (Thrift, 2008, p. 182).

A Spinozist informed, Deleuzian philosophical understanding of affect (as taken up by scholars from a range of disciplines) combines with a sociomaterial sensibility to provide the complex suite of conceptual tools (thinking-doings) required to engage in an empirical study

¹⁵ The term response-able, coined initially by Haraway (2008) then taken up by Barad (2012) and further developed by a range of PhEmaterialist (posthuman feminist and new materialist) scholars (Ringrose, Warfield, & Zarabadi, 2019), refers to the onto-ethico-epistemology of ‘becoming-with’ – and is also closely connected to a Deleuzian ontology of becoming. It denotes how ethical thinking-doing is embedded within a posthuman onto-epistemology that takes seriously the iterative co-becomings of the world (see interview with Karen Barad, Dolphijn & van der Tuin, 2012).

¹⁶ This concept of radical collaboration with more-than-human others emerges in datawork and is elaborated on in some depth in chapters four and eight.

into how pedagogic affect is ‘done’ and the work that it does. The study comprises a practice-led approach to pedagogic affect. I explore theorisations of pedagogic affect in situated practice, where a “situated practice is a site where knowing and doing are not separated” (Gherardi et al., 2018, p. 7). The research performs an empirical inquiry into how people and things and ideas act in intense learning-environment assemblages, the pedagogic affects generated, and the effects of those pedagogic affects. Engaging with data through my arts practice also makes this study partially practice-based. The practice-led and practice-based approaches completely merge when doing data with Map Fragment IV onwards, enacting “the co-constitutive relations between theory and practice” (van der Tuin, 2008, p. 126).¹⁷

Having said this, it must be clarified that in this study theory and practice are not taken as separate pre-existing entities, but as mutually constitutive of each other. As Taylor (2016, p. 209) notes, “concepts are practices, theories are material methods for enacting life”. Any bracketing of theory and practice is best thought of in Baradian terms as an ‘agential cut’ (Barad, 2007).¹⁸ The reality is that these things cannot be separated. Nor can the researcher, research and researched. For example, I-researcher do not stand outside of this study and cannot extract data from sites using methods-as-extraction-tools and then perform an analysis on it to ‘discover’ new knowledge. Instead, researcher, data and analysis emerge in a slow process of ‘becoming aware’ (Roth, 2015), located at the intersection of research and site-specific practices.

Doing a Rhizo-Cartography

A rhizo-cartographic methodology produces what Braidotti describes as a “theoretically based and politically informed reading of the present” (Braidotti, 2013b, p. 164). I adopted a rhizomic practice of thinking-doing research, mapping the study as it spread in all directions: in between, across, through, overground, underground. What emerged was an instantiation of a rhizo-cartography – with cartography being “an approach that aims to map the flows of affects, power and lines of flight (q.v.) in an event or assemblage, recognizing that mapping is itself experimental and a ‘becoming’ (q.v.)” (Fox & Alldred, 2017, p. 196).

What Does this Research Do?

By focussing upon learning-environment event-assemblages of an intense kind, this research emphasises the significance of affect, (re)placing it on equal footing with the social and

¹⁷ See for example Barad’s onto-epistem-ology or onto-ethico-epistemology.

¹⁸ Barad’s (2007) concept of ‘agential cut’ refers to the material-discursive act of drawing boundaries between ideas, people, things and practices which, in reality, cannot be separated. Performing an agential cut *always* involves power relations (What is included? What is not?) and therefore has ethical and political implications.

material as a consequential, relational, dynamic force that needs to be accounted for in educational research. More specifically, this research begins to address a lack of empirical engagement with the affective dimension in the emergent field of learning environments, while also addressing the need for “more theoretically diverse considerations of pedagogy in education” (Hickey-Moody, 2013b, p. 121), including more-than-human pedagogies.

Affect is deployed conceptually to account for the agency of nonhuman things and how affectivity and the materiality of the world teach in a range of more-than-human contexts. This has the potential to extend existing pedagogic knowledge to better account for the ethico-politics of pedagogic practice while creating the possibility of reimagining the material learning environment in ways that move beyond an instrumentalist focus on what works and how teachers can make pedagogies work most effectively. In so doing, the research destabilises anthropocentric (human-centred), logocentric (language centred), and instrumental pedagogical approaches commonly associated with the behaviouralist, cognitivist learning theories that underwrite social constructivist pedagogies (Lenz Taguchi, 2011, p. 210).

The intent is not to create a prototype for intense learning environments, nor to provide a pedagogical model for schools to replicate, but to open up a space for unthought thoughts (Semetsky, 2013) to materialise in our thinking-doing. To do so, this research puts into practice the onto-ethico-epistemology that underscores its emergent rhizo-cartographic methodology. It brings together theorisations of affect with the situated practices of intense learning environments to meld theory-and-practice in an empirical engagement with pedagogic affect. A takeup of arts-based educational research practices as the project unfolds enables a performative engagement with data, producing creative (d)artefacts – melding theory-and-practice still further in an open-ended process of developing knowledge.

Topology of Thesis

The thesis must be understood in terms of the rhizomic processes that generated the book-like artefact you now hold. The whole thesis is an ongoing event, and you, as reader, are now part of that event. Each ‘chapter’ is conceptualised as a map fragment and is an occasion in the event – partially mapped and provided for you here in a topology (Figure 1). The topological coordinates positioned under the heading of each map fragment will allow you to locate the fragment in the broader scheme of the thesis, which is best described as an itinerant process (Ingold, 2017). Conversely, the *Topology of Thesis* will allow you to become wayfarer and engage with the offerings before you in any sequence. The ‘ribbons’ denote the map fragments

and are hyperlinked to take you to that location. Once there, you can return to the topology by clicking on the topological coordinates provided under the heading.

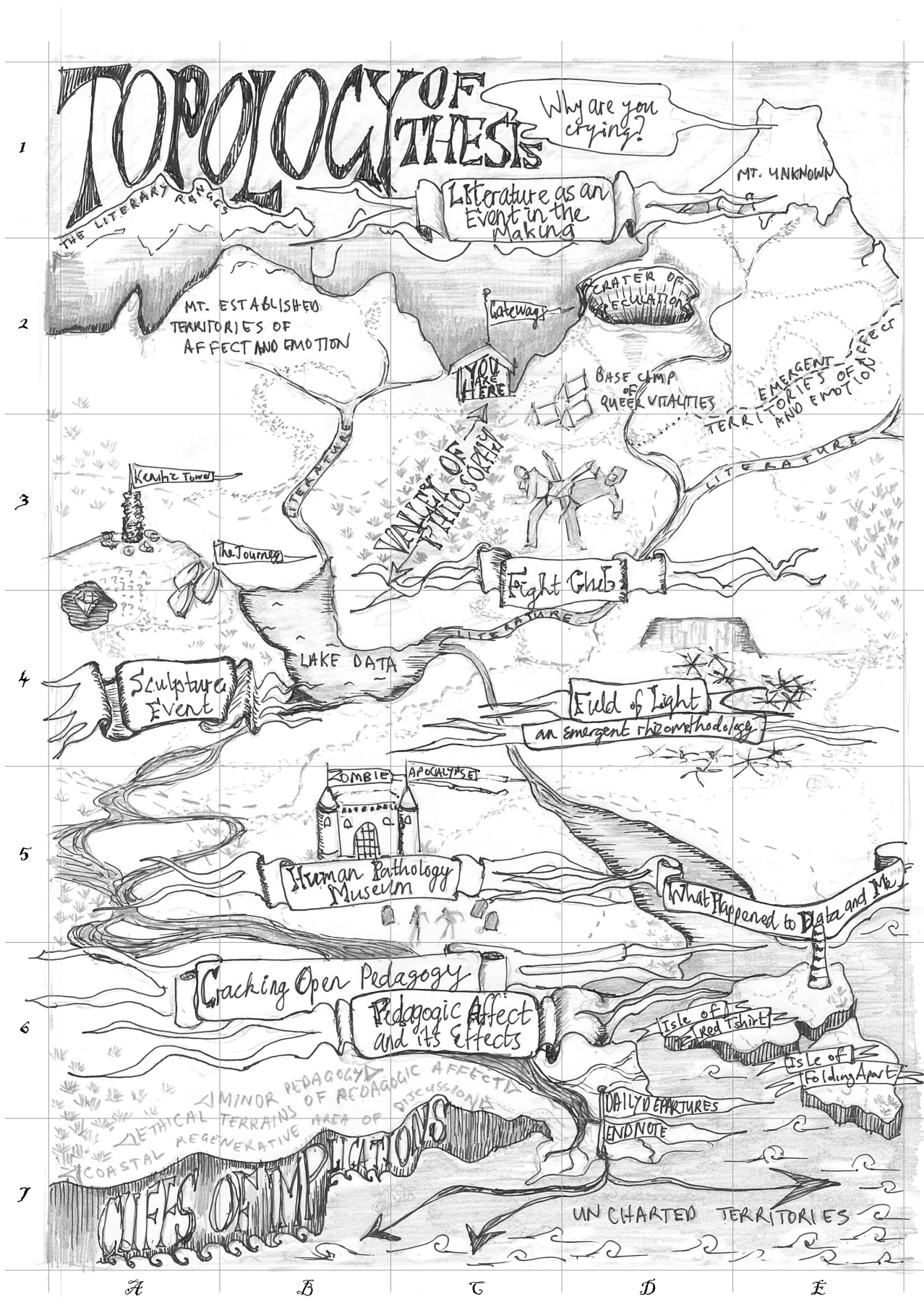


Figure 1. Topology of Thesis.

Map Fragment II: Pedagogic Affect in Education

Topological coordinates A₁-E₁, A₂-E₂, C₃, E₃

A true map doesn't take you where you imagine it will. It's a starting point into the unknown, a nod towards having a plan. It allows you to step out and make it up as you go. A good map is a work in progress (Kim Mahood, Position Doubtful, 2016, p. 195).

This 'chapter' is intended to act as a 'good map' and (is) was a work in progress throughout this study, a becoming-map, or becoming-map-fragment if you will. This was in fact the very last thesis map fragment to be formally 'written up'. It's not that I hadn't read deeply and widely, it's just that every fibre of my body resisted the idea of nailing all that lively literature down and calling it a Literature Review. Literature is not a thing that is attended to at the beginning of a project and then put to one side while the 'real' research takes place. Over the course of the project, literatures enter, leave and re-enter the research assemblage a little differently than before, their authors my becoming-collaborators (St. Pierre, 2014a). I contend that for literature to have any consequence at all, it must remain vital. Hence, I approach the literatures as a set of living entities that change *and* produce changes over time. So throughout the literature-mapping process, I seek to maintain the 'eventness of the event' (Roth, 2013) of the literature by situating myself in the ongoing literature event-assemblage (Fox & Alldred, 2017).

Writing with/in the literature is a dynamic, rhizomic process, replete with offshoots and dead ends. One cannot foresee what bits of literature will become significant and what will fade. So I did not conduct a systematic review of the literature or feed carefully formulated search strings into multiple databases. Rather, as I explored the relevant philosophy, theory and literature, certain resonances and dissonances would cause rabbit-holes to appear. Like Alice in Wonderland, I would stumble or dive into a rabbit-hole to be transported to a new world. Once there, I engaged deeply with whatever had captured my attention (and then some), chasing down the genealogy of an idea, working forensically through footnotes and reference lists, following up references of references of references, and occasionally enlisting the help of a research librarian. Some things stuck, others slipped away.

When data entered the research event-assemblage, it challenged what I thought I knew. I re-turned to the literature, slowly becoming able to think differently and do different things. I followed up ideas that had not resonated with me initially but had become increasingly pertinent – urgent even. Conversations over coffee, reading groups, visiting

academics, PhD supervision meetings, peer supervision, conference presentations, social media posts and even the odd ‘gift’ from my digital algorithm all informed my growing understanding of the terrain, and while not specifically referenced, must be acknowledged as an integral part of forming a relationship with the literature. This map fragment becomes a ‘collaborative reading-writing assemblage’ (St Pierre, 2014a), written with the words of others as I remake myself, my researcher subjectivity, in the act of writing a map of my encounters with pedagogic affect in education. What unfolds has “nothing to do with signifying. It has to do with surveying, mapping, even realms that are yet to come” (Deleuze & Guattari, 2013, pp. 4–5).

Encountering an Established Territory in Education

The established territories of affect and emotion in education are generally framed by social constructivist learning theories which are in turn informed by cognitivist, behaviouralist and psychological domains. These tend to position affect and emotion as contained, individual affairs and often emphasise subjective experiences and expressions of emotion (Wetherell, Smith, & Campbell, 2018). This comes about through an understanding of reality that prioritises human will, intent and agency while endorsing predetermined, ‘normative’ views of the learner (O'Donnell, 2013), a human subject who possesses individual emotions, for which he or she is responsible. Human emotion is thus prioritised and cultivated in practices that are simultaneously caught up in a neoliberal¹⁹ politics of the self and criticised because of the way they produce “prescriptive formulations of character education that seek to impose universalized, reductive and/or dehistoricized ideas of what counts as ‘correct’ and ‘proper’ or suitable emotions” (Boler & Zembylas, 2016, p. 27).

In Australia, this is increasingly playing out in schools through enactments of a type of Social and Emotional Learning (SEL) curriculum. For instance, the Victorian curriculum²⁰ aims to develop students' personal/emotional and social/relational capacities through one of four cross-curricular capabilities, ‘The Personal and Social Capability’ (VCAA, n.d.). Students are expected to reach normative ‘achievement standards’, categorised under either ‘self-awareness and management’ or ‘social awareness and management’. That is, the individual is expected to *achieve* a predetermined standard of emotional self-management and social

¹⁹ Fox and Alldred (2017) define neoliberalism as “a set of market-orientated practices, and a philosophical and policy orientation towards individualized self-interest and the market as the foundation for most if not all human interaction” (p. 199). Neoliberal politics currently prevail in both Australia and New Zealand.

²⁰ Victoria is a state of Australia, where the host university of this PhD research is located. The Victorian curriculum is overseen by the Victorian Curriculum and Assessment Authority (VCAA).

responsibility via processes of responsibilisation,²¹ promoted as enabling individual choice, autonomy, independence and empowerment. As SEL is rolled out into schools, emotion becomes increasingly linked with literacy or intelligence – a coupling which somewhat ironically works “not to invite emotion into education, but to corral and contain it, to subdue and correct it within the rationality which it might otherwise exceed” (Kenway & Youdell, 2011, p. 132).

A question this raises is who decides what counts as an appropriate emotion for whom? Boler (1997) notes that what is not accounted for when affect and emotion are framed by discourses of emotional literacy (e.g., SEL) is how it positions “emotions as a site of social control” (Boler, 1997, p. 211), for example by acting as a pedagogic mechanism that adapts individuals to the social inequalities of an existing education system rather than acting to alter the system (*ibid*), or, as Wetherell et al. (2018), point out, by overlooking how individual and collective emotion are assembled and neglecting how “emotion is also historically and culturally contingent, and bound up in power relations and politics” (p. 2). Instead, students are made personally responsible (liable?) for the appropriate development and containment of their emotions and emotional intelligence. An implication is that those who fail to develop emotional intelligence or fail to appropriately contain their emotions do so because of an internal deficit, a social and emotional pathology (Boler, 1997; O’Donnell, 2013). This is linked to an assumption that emotion is located inside (human) minds, and *not* bodies, nor the range of social and material practices in which all kinds of bodies engage – as individuals and collectives.

Encountering a Borderland in Education

The neuroscience of emotions has also been gaining prominence in educational circles, being co-opted to support dominant educational discourses of affect and emotion including SEL, cognitive theories, embodied learning theories and progressivist ‘learning by doing’. Curiously, neuroscience is also being co-opted to support counter-discourses, including those which align with a Deleuze-Guattarian philosophy of affect.²² Leys (2011) identifies the common ground between what might otherwise be seen as irreconcilable paradigms – such as positivism, the ‘basic human emotions’ paradigm²³ and philosophically inspired approaches of

²¹ I argue that dominant pedagogies concerned with affect, such as the teaching of Social and Emotional Learning (SEL), are limited by their alignment with an agenda of neoliberal individualism. They tend to promote the notion of the responsibilised learner (Trundle & Trnka, 2014).

²² See for example, Massumi’s (1995) engagement with the snowman experiment and also the mystery of the missing half-second, which would become the focus of Leys’ (2011) critical essay on the turn to affect.

²³ As developed by Darwin, Tomkins, then Ekman, see Ekman (1992) for a detailed account. Also see Sedgwick (2003).

contemporary affect theory – as the rejection of human intentionality: that is, the point where these different paradigmatic logics coincide is ‘shared anti-intentionalism’ (Leys, 2011), or more specifically the idea that affect moves through precognitive, autonomous, and corporeal processes.

Leys (2011) is critical of this anti-intentionalism, seeing it as a re-enactment of the mind-body binary – the very binary that affect theorists and neuroscientists alike have challenged. However, what her critique misses is more recent developments in neuroscience and affect theory, which indicate the inextricable nature of intellectual-affective-material processes and support the development of pedagogies that account for the intellectual-affective-material processes of learning. Immordino-Yang (2016) states, “Neuroscientific evidence suggests that we can no longer justify learning theories that dissociate the mind from the body, the self from the social context” (p. 73). Further, Immordino-Yang’s research shows the body can *only* think deeply about things that engage its emotions. The mind/body Cartesian split is no longer – the body thinks (Elmore, 2018).

In a move that could be seen to map directly onto scholarship of those whose research sits with/in a tri-partite of affectivity, cognition and materiality (such as Dragojlovic, 2015; Mulcahy & Witcomb, 2018; Roth, 2015; Watkins, 2006; Witcomb, 2013), Immordino-Yang states, “Emotions are not add-ons that are distinct from cognitive skills. Instead emotions, such as interest, anxiety, frustration, excitement, or a sense of awe in beholding beauty, become a dimension of the skill itself” (Immordino-Yang, 2016, p. 21). Consciously or not, students’ emotional reactions (feelings) direct thoughts and behaviour, directly influencing learning (ibid). Therefore, Immordino-Yang argues, desirable emotional states need to be cultivated to facilitate effective learning. As should the development of ‘skilled intuition’, with intuition being understood by neuroscientists as “the incorporation of the nonconscious emotional signal into the knowledge being acquired” (Immordino-Yang, 2016, p. 102).²⁴

Dissolving boundaries. As the boundaries between environment, affectivity, the body and cognition are dissolved, the science of the neuro(n) and associated neuro(n) ontologies (Lenz Taguchi, 2016) edges towards a new frontier. Working in proximity to educational neuro-scientists,²⁵ Elmore (2018) declares, “there are no hard boundaries between brain, body and environment, but rather cognition occurs, not as a set of discrete tasks performed by the brain, but as an integrated set of processes distributed throughout the

²⁴ Intuition, understood thus, is a concept not dissimilar to Semetsky’s notions of unthought thoughts (2013) and affective knowledge (2009).

²⁵ Richard Elmore coordinates HarvardX Course ‘Leaders of Learning’, which integrates contributions from educational neuroscientists to better understand the conditions required for student learning.

human organism and its interactions with the environment” (Elmore, 2018, p. 58). What were once thought of as exclusively human cognitive functions have been reconceptualised as becoming-learning-brains-environments (Lenz Taguchi, 2016) “‘codetermined’ through brain, body, environment interactions” (Elmore, 2018, p. 58). “The taste of an apple [...] lies in the contact of the fruit with the palate, not in the fruit in itself” (Jorge Luis Borges as cited in Pallasmaa, 2013, p. 17), nor a human mind for that matter.

However, there is still an unresolved tension here, which is a result of onto-epistemological differences between fields of research – with the neuroscience of emotions still largely subscribing to dominant understandings of affect and emotions as interchangeable and contained by individual human bodyminds²⁶, which in turn remain the primary locus of intentionality and agency. This (in)tension (Springgay & Truman, 2018) can be explored through an examination of the neuro-ontologies at work. Lenz Taguchi (2016) helpfully maps these neuro-ontologies, drawing on Claire Colebrook’s conceptualisation of vitalism as active, passive or queer, whereby an *active force of vitalism* is born of human intentionality; a *passive force of vitalism* is a “differentiating field of powers [affects] without a preconceived image of the living body” (p. 218); and *queer vitalism* exists in a space between which, to paraphrase Lenz Taguchi, acts to transgress binary thinking by foregrounding the complex interdependence between active and passive forces (ibid, p. 221).

The human intentionality of ‘active vitalism’ involves political processes that are subject to the intention and agency of individual human subjects (Lenz Taguchi, 2016). It is in the space of active vitalism that dominant approaches to affect and emotion in education (such as SEL) are primarily located – as are phenomenological studies of human emotion. It is a realm that is produced by the human subject for the human subject. In contrast, a ‘passive force of vitalism’ involves the micropolitical processes that produce *difference* that is unintentional and exists “without a preconceived image of the living body” (Lenz Taguchi, 2016, p. 218). It is the space of passive vitalism that gives rise to thingly power (J. Bennett, 2010), a space “where the mind or the self is taken to emerge from life” (Lenz Taguchi, 2016, p. 219), a space of a posthuman ‘world without us’ (L. Bennett, 2016).

Queer vitalism involves an interplay of both active and passive vitalist forces that have varying combinations of intentionality and non-intentionality. Rather than choosing between a world that privileges human intention or a world devoid of human intention, queer vitalism enacts a reality where “human thought and reason is born out of looping interactions with

²⁶ Like Semetsky (2013), I use the term bodymind to trouble educational practices that split bodies and minds into dualistic categories and problematically assume that an a priori self-consciousness exists.

material brains, material bodies and complex cultural and technological environments” (Clark as cited in Colebrook, as cited in Lenz Taguchi, 2019, p. 219). It is in the queer space between active and passive vitalist forces that Deleuze-Guattarian approaches to educational research work locate themselves, as does much of the work on affect being undertaken in the new materialist and ‘world with us’ posthumanism (L. Bennett, 2016). These approaches are central to this project.

Arguably, there is little benefit in separating the notion of intentionality from affectivity in educational contexts. Rather, I suggest that it is more productive to consider the potential interplays of intentionality *and* unintentionality (un/intentionality) when working with affect, especially pedagogic affect. This accounts for how affects may be purposefully generated (e.g., staging an atmosphere of intrigue to grab attention) but never with a guarantee that the intended effects of the affects will come to pass (e.g., that the attention of an audience member will be grabbed, and a learning encounter will occur). I adopt the position that affects do not exist somewhere out there ‘in’ Euclidian space or linear time (Anderson, 2006), waiting to pounce. Nor do they reside in a body. Instead, corporeal and trans-individual affects materialise as *bodily capacities* to affect and be affected in ongoing, situated, sociomaterial practices.

Queering pedagogic affect. Positioning the force of pedagogy in a queer space of un/intentionality is helpful for developing an understanding of how pedagogic affect works as an un/intentional pedagogic force with un/intentional consequences for learning in a world that is both more-than *and* less-than-rational (Anderson, 2006), or, in other words, how pedagogical mandates of museum exhibits and certain heritage sites produce both intended and unintended affects and affect audiences in intended and unintended ways. Trofanenko (2014) explains, “Such a stance is key in realizing how war, as represented in a history museum, remains an often-unquestioned pedagogical event that intentionally and unintentionally provoke [*sic*] emotions and affect that at once may support and belie individual understanding” (p. 23). Or as Zembylas (2018c) puts it, “emotional engagement with difficult heritage might have unintended consequences, even when the intentions are ‘good’, such as invoking reconciliation” (p. 198).

Writing in the context of museum studies, Baker (2008, 2010) explains how the knowing that unfolds in the act of experiencing a museum exhibit does not necessarily comply with curatorial intention. There is a more-than-rational excess to the *didactic* pedagogy of

what Baker calls ‘the rational museum’,²⁷ which operates along a *delirious* line. This excess may be thought of as provoking less-than-rational expression, or unintended affective responses. As Baker notes, “withered hands and dinosaur bones embody meaning that may affect day-dream and play, irrelevant to any didactic intent” (Baker, 2008, p. 25). Baker thus brings our attention to the simultaneous existence of the rational museum that produces pedagogic affect with a didactic tone, and the delirious museum²⁸ that produces pedagogic affect with a more delirious tone. Critically, the delirious museum “does not replace the museums that we know ... the delirious museum exists in *parallel* to the traditional museum as it has evolved” (original emphasis, Baker, 2008, p. 27). In other words, the delirious and rational museum is a multiplicity, not a duality. Likewise, in the queer vitalist space that the delirious museum exists with/in, the passive and active vitalist forces of pedagogy exist simultaneously as a multiplicity.

In this queer borderland of the un/intended and more-than-rational, I wonder how thinking-doing pedagogic affect in intense environments might create alternatives to normative and responsibilising approaches of ‘emotional intelligence’ and ‘emotional management’? It is possible (and hoped) that this will produce the grounds for more affectively attuned pedagogic practices that attend to affect as a site of transversal educational practice.

Encountering Emergent Territories in Education

The proliferation of interest in the relations between affect and the material environment in education is underscored by a move towards posthuman (or more-than-human) research approaches drawing on sociomateriality (Fenwick et al., 2011; Gherardi, 2017), new materialisms (Coole & Frost, 2010; Fox & Alldred, 2015), and material feminisms (Alaimo & Hekman, 2008). This ‘turn to affect’ in social theory (Clough & Halley, 2007) has been marked by increased attention to the affective registers of learning environments and the bodies that assemble with/in them. The educational research that has subsequently emerged draws on a wide range of interdisciplinary resources that are informed by a variety of traditions, disciplines and paradigms. These include continental philosophy traditions (such as Spinoza, taken up by Deleuze and Guattari, 2013, and various post-Deleuzian scholars), PheMaterial and new material traditions (such as Barad, 2007, and Braidotti, 2013b), and practice traditions (inclusive of social practice stemming from Schatzki, 2002; Schatzki, Knorr-Cetina, and von

²⁷ Baker (2008) uses the concept of the rational museum to convey museum practices that categorise and control, normalising the ‘rational order’ of things, working to reproduce historical dominant narratives.

²⁸ Baker (2008) leverages off Calum Storrie’s work on the delirious museum to make this point.

Savigny, 2001; Reckwitz, 2002; Reckwitz, 2017; and also sociomaterial practice in education as traced by Fenwick et al., 2011). Educational research on affect and emotions is also informed by a range of disciplines (including anthropology, such as Navaro-Yashin, 2009, and Stewart, 2007; cultural studies, such as Ahmed, 2014; Berlant, 2011; Hochschild, 2012; Probyn, 2005; human/cultural geography, such as Anderson, 2006; Anderson and Ash, 2015; Massey, 2005; Thrift, 2008; and feminist studies such as Boler, 1999, and Cvetovich, 2003). Educational research also draws on paradigms from within disciplines such as ‘basic emotions’ in psychology developed by Silvan Tomkins (Ekman, 1992), and taken up by Sedgwick (2003).²⁹

These traditions, disciplines and paradigms are not mutually exclusive. Yet, despite different emphases (such as the gendered politics of emotions or atmospheric affects or the embodied experience of affective moments), they have been productively brought together in all sorts of combinations to develop different ways of thinking-doing affect. For example, Probyn (2004) brings Tomkins together with Spinoza and Deleuze to produce a pioneering analysis of affect in the embodied classroom – as does Watkins (2006). Differently, Wetherell (2012, 2013, 2015) develops her affective practice approach by bringing together Reckwitz’s social practice theory and a *critical* engagement with a variety of scholarship on affect and emotion. The targets of her critical engagement include Thrift’s ‘social psychology of affect’ (see Wetherell, 2015, p. 148), Hochschild’s (2012) feeling rules, and Anderson’s work on affective atmospheres (2006, 2009).

Similarly (but differently again), this particular mapping of the literature event-assemblage includes a range of sometimes competing contributions to the emergent territories of affect and emotion in education. The criteria for inclusion are that they have in some way been pivotal in developing my knowledge-practice of pedagogies that attend to affect in a range of broadly conceived learning environments. In short, the literature that has entered this mapping event has done so because it has stuck to me or moved my thinking-doing in some notable way,³⁰ not because of the scholarly tradition or discipline it represents. These contributions have predominantly emerged in a queer vitalist space, engaging a wide

²⁹ See Wetherell (2015) for a more detailed description and critique of Sedgwick and Frank’s social psychological take-up of Silvan Tomkins’ psychology of affect, which in turn is informed by a Darwinian biological determinism.

³⁰ As this was the last chapter of the research project to formulate, it is uniquely positioned on the threshold of hindsight and foresight. I have knowingly produced a partial account of the emergent territories of affect in education – it is not possible to include everything that has ever been written on affect in education – so I must make a cut, an agential cut. Rather than including the most cited work from the most established scholars in the field, I have focussed on that which has enlivened or enhanced my research, in the hope that others may find it enlivening or enhancing too. I would also argue that it would diminish the pedagogic affect of my own work to include contributions that did not in some way ignite, clarify, challenge, or further my capacity to think-do this research project.

variety of theories and research practices that think-do affect in an equally wide variety of contexts, ranging from philosophy to classrooms to arts practices to heritage sites. What becomes increasingly obvious as you read on is, as Gregg and Seigworth (2010) write, “There is no single, generalizable theory of affect: not yet, and (thankfully) there never will be” (p. 3). However, although there are countless variations, the literatures featured in this map fragment characteristically “dispute separations between mind and body; and between the individual, their communities and political contexts” (Skattebol, 2010, p. 78). They also share varying degrees of focus on how affect, defined as an intensity or force, might act pedagogically to produce new (affirmative) connections in and amongst learner-bodies.

Having now provided a broad map of the terrains of affect and emotion in education, I am able to take you deeper into queer vitalist territory, offering up a selection of more detailed engagements with the issues that captured my attention or got under my skin over the course of the project. In so doing, I introduce my understanding of the affective registers of learning. Then I dig into some dilemmas that are of particular concern to this study of pedagogic affect ‘in’ intense learning environments, namely: the difference between affect and emotion; the co-existence of trans-individual and bodily affect; and the difference between affective practice and affect ‘in’ practice. This leads into a brief discussion of pedagogic affect and affective pedagogy, which I go on to contextualise in relation to classrooms, art and art practice. This brings me to the intersection of pedagogic affect and intense learning environments. It is here that I take a sharp left-hand turn into the ethics and politics of pedagogic affect, touching on the ethical concepts that flow through the research event-assemblage.

Affective registers of learning. While the affective (and emotional) in education remains unsettled territory, there is a general agreement amongst affect theory scholars that the experience of learning necessarily involves *an encounter with affect*, in which one is forced to think (Deleuze, 1994). As Hickey-Moody (2013b) notes, “The lived experience of learning is always affective; whether learning how to conjugate a verb in a classroom (Watkins 2012) or how to dance in a nightclub (Henriques 2010), our bodies and their affective registers are the flesh of pedagogy” (p. 126). Learning can thus be “understood as an intensive process of affective and material production in which forces, sensations and intensities are transmitted between bodies in ways that transform their distinctive capacities” (Duff, 2016b, p. 179). Approaching learning in this way has direct implications for pedagogy – even in everyday classroom contexts. For example, as a point of departure for an undergraduate class engaging in textual analysis, Probyn (2004) asks her students to attend to what she calls the ‘goose bump effect’, describing it as occurring in the moment “when a text sets off a frisson of

feelings, remembrances, thoughts, and the bodily actions that accompany them” (p. 29). The learning that occurs as a result of becoming attuned to the bodily affectivity produced in an encounter with a text “provides a means of ascribing meaning to experience by establishing a basis for explaining how and why bodies affect one another in their encounters” (Duff, 2016b, p. 179). Probyn, like others who have come after her, puts into pedagogic practice her sense of how material practices, affective interplays, and practices of meaning-making are entangled in affective processes of wording and worlding (Taylor, 2016), which in turn “enable a body to increase the array of objects, bodies and entities it may affect and be affected by” (Duff, 2016b, p. 179).

Not only is an encounter with affect a critical part of intellectual and embodied learning processes, it can also make learning ‘stick’ to learners and transfer from one context to another (Mulcahy, 2016). This connects to Watkins’ (2010) research, which helps to explain how affective intensities may accumulate and “leave a lasting impression that produces particular kinds of bodily capacities ... to form dispositions and thus shape subjectivities” (Watkins, 2010, p. 269). Part of this may be, as Probyn (2004) argues, because “affect amplification makes us care about things” (p. 26). It increases our capacity to connect with multiple others – although the caring made possible through affect is not always easy. In classrooms, museums, heritage sites and beyond, learning encounters provoke unsettling responses such as dissonance, discomfort and even pain – raising issues “to do with the *pedagogical* treatment of our affective dissonance and loss” (original emphasis, Zembylas, 2018b, p. 199). Attending to these affective registers of learning involves an attunement to the way pedagogy may act, with a view to empowering learners and teachers to think-do more.

Differentiating affect and emotion. Theorisations of affect and emotion are contingent on whether a distinction between the two entities is drawn – or, in Baradian terms, an agential cut is performed. The arm of scholarship that rarely separates affect from emotion includes cultural theorists such as Ahmed (2014) and Berlant (2011), affective practice folk such as Wetherell (2013), feminist theorists such as Boler (1997, 1999), and queer theorists such as Cvetkovich (2003). In these accounts, affect tends to subsume emotions and feelings, and “includes impulses, desires, and feelings that get historically constructed in a range of ways” (Cvetkovich, as cited in Zembylas, 2018b, p. 200).

In contrast, scholarship taking up a Spinozist-Deleuze-Massumi line on affect holds the position that affect is a material force or intensity that is linked to, but different from, emotion. The reasoning is that, according to Massumi (1995), emotion and affect belong to different systems of logic. Emotions, Massumi (2002a) argues, are partial, bodily expressions of

affect. “Emotion is the way the depth of that ongoing experience [of affecting and being affected] registers personally at a given moment” (Massumi, 2002a, p. 4), that is, affects are relational and operate as transitive forces and bodily capacities to affect and be affected. Significantly, affect is understood “in physical terms – affect as movement or modification, meaning that the Spinozist concept of affect ... does not necessitate a human body; it is a physical rather than a psychological principle” (Dawney, 2011, p. 600).

However, Zembylas (2018b), who himself has engaged extensively with a Deleuzian theory of affect, makes a convincing case for *not* differentiating affect from emotion. He argues that deploying the concept of affect (and emotion) in a generic sense, as opposed to the specific sense theorised by Spinoza-Deleuze-Massumi, avoids a potential pitfall that may occur from separating affectivity from emotion. This pitfall consists of misattributing the affective *only* to the unintended or precognitive (e.g., passive vitalism) and the emotional *only* to the intended or socially determined (e.g., active vitalism) when both materialise in un/intended ways (e.g., queer vitalism). By using the concepts of affect and emotion more or less interchangeably, the bodily, historical, social and political specificity of affect and emotion is not lost (Zembylas, 2018b) and a queer vitalist space may be generatively entered. It could therefore be argued that blurring psychological and philosophical traditions by conflating emotion with affect produces thinking-doing from a productive space of (in)tension. This said, this ‘blurring’ needs to be accomplished in a knowing way.

The question that may be of importance here is not so much whether or not to make an *analytic distinction* between affect and emotion, but what might the practice of differentiating affect from emotion enable us to think-do differently? Distinguishing affect and emotion as separate but linked processes (or systems) is useful because it provides the ground for more nuanced understandings of the pedagogic work of affect³¹. It also allows for fine-grained analysis of the micropolitics of affect while still accounting for the macro-politics of the event-assemblage at hand. For example, Albrecht-Crane and Daryl Slack (2003) adopt a Deleuze-Guattarian language of lines (molar, molecular and lines of flight) to produce a noteworthy analysis of how affective lines that pulse through a ‘socius’ variously code, decode and recode the ‘socius’ (e.g., the classroom), and act on becoming-teacher- and becoming-learner-bodies to produce “moments of energetic and resonant connection, which indicate something significant is at work” (p. 191). They demonstrate how a “micro-analysis of movement, gesture and behaviour draws us down from the heights of abstraction to an

³¹ This explains why I differentiate between affect and emotion in Map Fragments III, IV, V, VI, VIII, and IX.

awareness of how bits of bodies connect (or don't)" (Probyn, 2004, p. 37). Critically, Albrecht-Crane and Daryl Slack's analysis provides an example of how a focus on pedagogic affect might simultaneously account for processes of individuation *and* the formation of the collective, normative structuring forces *and* intense break-outs of desire, pedagogic intention *and* pedagogic impulse.

Albrecht-Crane and Daryl Slack (2003) also connect encounters which increase the affective capacities of teaching-learning bodies with empowerment. This foreshadows a recent proliferation of interest amongst post-Deleuzian and (new) materialist scholars in the connection between affect, ethics and pedagogy (Bignall, 2010; Ringrose et al., 2019). What an affectively attuned pedagogy can do, according to Albrecht-Crane and Daryl Slack (2003, p. 211), is "explain and critique agency and action in relational and affirmative terms", and, I would add, in more-than-human terms. This ties in with what could be the most profound thing that uncoupling affect from emotion enables – *the uncoupling of affect from human intention and agency* – and the adoption of an onto-ethico-epistemological stance where affect is understood to account for the agency of things. Uncoupling the concept of agency from the human is an ethical and political act that allows us to better account for the agentic nature of things and ultimately "these nonhuman becomings of man" (Deleuze & Guattari, 1994, p. 169).

With this approach, we are better equipped to account for how "we may affect matter [and] matter ... affects us in profound, although often subtle or hidden and inescapable ways" (Hickey-Moody & Page, 2016, p. 15). This is arguably a crucial move that not only helps develop an understanding of how posthuman pedagogies emerge, but also affords making sense of their "ethical accountabilities to human, more-than-human and other-than-human actors" (Taylor & Hughes, 2016, p. 3). Uncoupled from emotion, intense affectivity becomes "a creative force that constructs possible futures" (Braidotti, 2013, p. 343), making it possible to actualise more-than-human pedagogies that generate and circulate affirmative flows of affectivity "which are not yet sustained by the current conditions" (Braidotti, 2013, p. 342). Researching (pedagogic) affect becomes a matter of addressing the questions *what does it do?* and *what does it make possible?*

Trans-individual and bodily affect. Wetherell (2012, 2013) is highly critical of approaches to thinking-doing with affect that stem from Spinozist and Deleuze-Guattarian philosophy, because they risk rendering affect 'subjectless'. Wetherell argues that accounts taking up affect as a trans-individual, precognitive intensity have a propensity for the 'spooky' and 'uncanny', so she questions how fit for purpose these approaches are in social research, e.g., heritage studies and education. She and her co-authors say that "what is missing here is

any account of the practical human work and meaning-making involved” (Wetherell et al., 2018, p. 4), suggesting that affect could more productively be framed as a social practice, or ‘affective practice’ (an important point which I return to).

Part of the problem with Wetherell’s³² critique of a trans-individual, or ‘subjectless’ affect can be attributed to a misinterpretation of Spinoza’s theorisation of affect as psychological (therefore necessitating a human body) rather than physical and therefore not necessitating a human body (Dawney, 2011). This leads to the notion that trans-individual affect acts as a system that is split from a body and its cognitive processes, when, as Dawney (2011) argues, “Spinoza says no such thing” (p. 601). In a monist reality of Spinoza, affects do not exist as mysterious and isolated forces that evade practices of meaning-making as Wetherell (2012, 2015) seems to be suggesting. Instead, Spinoza (2018) proposes that the mind becomes conscious of itself “through ideas of affections [powers] of the body” and that “an idea that excludes the existence of our body cannot be in our mind, but is contrary to it” (p. 103). As Watkins (2010) explains, “affect as a force or the processual aspect of affect is in fact embedded in a discussion of affective [bodily] capacity” (p. 270).

If treated *only* as a fleeting trans-individual intensity, affect could be said to fall under the umbrella of passive vitalism, a dimension of affect that “attends to those differences that we neither intend, nor perceive, nor command” (Colebrook, as cited in Lenz Taguchi, 2016, p. 219). Adopting a passive vitalist focus alone is unlikely to provide all the conceptual resources required for research concerned with pedagogy, since pedagogic practice (in Western educational systems) usually involves human bodies that do intentional, intellectual work. Therefore, it is necessary to consider the active and passive together by attending to affect in terms of trans-individual force *and* change in bodily capacity *and* integral to the materialisation of thought, queering the passive and active forces of vitalism. This consideration underwrites the idea of learning as a process of differing – or “a creative process of individuation that might exceed any norm, normality, or majoritarian form of existence” (Lenz Taguchi drawing on Colebrook, 2016, p. 221). This is an important element of an anti-essentialist, a-subjective approach to pedagogy that seeks to move “beyond received notions of individuality” (Braidotti, 2013a, p. 346) and towards “more humane and sustainable social systems” (ibid, p. 347).

³² I say Wetherell here because she is first author and this is a line of argument that she has developed over many years (see for example Wetherell, 2012, 2013); I therefore attribute it to her rather than her and her co-authors.

It is important to note here that while pedagogies that attend to trans-individual forces involve nonhuman matter, they are also very much concerned with bodies and human embodiment (Albrecht-Crane & Daryl Slack, 2003; Hickey-Moody, 2013, Mulcahy, 2016; Niccolini, 2016; Taylor, 2018). What a body can do, or what a body is capable of affecting and becoming affected by, becomes the preeminent question for any research taking up a Spinozist or Deleuze-Guattarian theorisation of affect (Albrecht-Crane & Daryl Slack, 2003). Bodies matter, not just because “bodies are a chief site of securing the circulation of affects” (Mulcahy, 2016, p. 207), but also for the reason that both learner-bodies and pedagogic bodies are “vital players in classroom pedagogic practices” (Taylor, 2018, p. 1). Further, because bodies have affective responses to the environments they inhabit, they simultaneously *affect* and are *affected* by those environments. That is, affects are involved in an iterative process of becoming-learners and becoming-learning-environments. When affect is not considered as a transitive pedagogic force, the significant micropolitical work and ethical potential of pedagogic affect remains hidden.

Pedagogic affect ‘in’ practice. I now return to the earlier point about Wetherell’s (2012, 2013) case for adopting an affective practice approach for researching affect and emotion in educational contexts such as museums and heritage sites in order to sidestep the perceived flaws of the phenomenological, Western psychology of emotion, and ‘subjectless’ understandings of affect (Wetherell et al., 2018). Wetherell’s idea of affective practice is developed from social practice theory (Reckwitz, 2002; Schatzki, 2002) and is defined as a “*human activity* where emotion is a specific and principal focus of the practice” (emphasis added, Wetherell et al., 2018, p. 5). Research that adopts an affective practice approach “takes as its focus and units of analysis patterns and cycles of activity that at a particular historical moment have become ‘emotionalised’” (Wetherell, 2013, p. 235). In so doing, it involves a generic conceptualisation of affect and emotion, considering them predominantly as human affairs.

One problem, Watkins (2016) notes, is that a category such as ‘affective practice’ suggests there is some practice that is not affective, and as Wetherell and her co-authors tell us, all practices produce affects (Wetherell et al., 2018). Perhaps more problematic, though, is that Wetherell’s objection to differentiating between affect and emotion risks ‘theoretical slippage’ in her account of affective practice. Watkins explains further, “as affectus, it [affect] possesses a transitive quality crucial for understanding the affective dimension of practice, which emotion – lodged in the body – does not” (Watkins, 2016, p. 73). Add to this the effect of placing human activity at the centre of an affective practice approach, and the possibility

for more-than-human pedagogies to take place is diminished. This is problematic for a study like this which locates itself ‘in’ the situated practices of intense learning environments (e.g., a human pathology museum), where matter may produce an intensive pedagogical force (Ellsworth, 2005) because it shuts down the pedagogic potential of the more-than-human world.

Hickey-Moody (2013a, 2013b, 2016) and Hickey-Moody and Page (2016) provide an alternative to Wetherell’s ‘affective practice’ framing of affect and emotion that has the capacity to account for more-than-human pedagogy – and that arguably involves practice. So it was Hickey-Moody’s interpretation of Spinoza-Deleuzian philosophy of affect that I took as a point of departure for this research project. However, as the field and datawork unfolded, I found my Spinozist-Deleuzian-Hickey-Moody informed approach to thinking-doing pedagogic affect was not enough to account for everything that was happening at each learning-environment event-assemblage. Her analysis does not (and was never intended to) drill into the complexities and contingencies of how the affective intensities of a site’s given pedagogy produce and are produced *in practice*. I needed to understand what site-specific devices (recurring patterns of practice) give rise to the different pedagogic affects in my research sites. While Hickey-Moody proposes art and art practice as mechanisms of pedagogic affect that forms an ‘affective pedagogy’ that works spatially, temporally and aesthetically in her specific youth arts research contexts, my research sites were different and therefore required different conceptual resources.

A subsequent re-engagement with a third, less explored avenue – that of affect as emergent in *all* social and material practices – provided another path. That is, I had ‘become aware’ of affect *in* sociomaterial practice as established by Fenwick (2014), Gherardi et al. (2018), Kraftl (2015), Slaby and Mühlhoff (2018), and Mulcahy (2012, 2015, 2016, 2018), who all draw on after-ANT traditions to varying degrees. Affect (re)conceived in this way could be (re)worked into my emergent understanding of pedagogic affect ‘in’ practice, and would lead me to a pivotal engagement with Law (2004), Singleton and Law (2013), and Mol (1999, 2002). Affect as produced in diverse social and material practices proved to be compatible with a Deleuzian philosophy of affect, making way for a more distributed understanding of affect, pedagogy and learning and creating possibilities for more-than-human pedagogies to emerge. This rendering of affect is commensurate with the assemblage thinking that shapes my understanding of the learning environment.

Encountering Pedagogic Affect and Affective Pedagogy

Pedagogy and affect have been brought together in different ways in the literature. Loosely speaking, there are two camps: those that tend to work with a concept of pedagogic affect to investigate pedagogic relations in educative practices (for instance, Watkins 2006, 2010, 2016) and those that apply the concept of affect to re-theorise pedagogy, for instance Hickey-Moody's (2013a, 2013b, 2016) theorisation of 'affective pedagogy' in an art education context. I use Watkins and Hickey-Moody as examples here because they each put a stake in the ground, so to speak, elaborating extensively on their conceptualisation of pedagogic affect and affective pedagogy. Also, the (in)tensions of their respective contributions to the field of affect and emotion in education are good to think with.

A comparison between Watkins' conceptualisation of pedagogic affect and Hickey-Moody's affective pedagogy reveals a common point of departure. They both base their conceptualisations on Spinoza's theorisation of affect (as interpreted by Deleuze or Deleuze and Guattari) and explicitly distinguish affect from emotion. Affect is understood as transitive force (*affectus*) and bodily capacity (*affectio*) – which may leave material residues of experience in thought and body, and also produce more affects (Watkins, 2016; Hickey-Moody, 2013a). What they do next is quite different, which is to be expected since each researcher occupies different fields of interest, with Watkins focussing more on the micropolitics³³ of school-based pedagogy and teacher practice while Hickey-Moody aligns more with the cultural pedagogies in learning environments of her case studies, described as “informal educational sites” (2013b, p. 121). In the section that follows, I will first discuss Watkins' trajectory in relation to other school-based literature on pedagogic affect, before returning to a discussion of Hickey-Moody's trajectory.

Pedagogic affect with/in schools. Most of Watkins' research related to pedagogic affect is centred around embodied experiences of classroom pedagogy, or, as in the case of a study focussing on 'nonhuman didactics' (Watkins, 2017), the pedagogies of the broader school environment. Watkins (2010) frames pedagogic affect as a relational force with productive potential that can, and does, operate non-cognitively – though certainly not always. She draws attention to the contagious, disciplinary and accumulative potential of pedagogic affect and how it works to produce both desire (for example, a desire to learn) and power relations in and amongst individuals in schools. As Hickey-Moody and Crowley (2010)

³³ Like Fox and Alldred (2017, p. 198), Watkins uses 'micropolitics' “to describe the internal movements of power and resistance within assemblages”. It can be contrasted with the macropolitics of larger social structures and movements.

note, much of Watkins' focus is "orientated towards capturing embodied affect" (p. 402) and so she produces an analysis that emphasises the effects of the micropolitics of pedagogic affect. This is not to say that Watkins' contributions are apolitical, though. Like Probyn (2004), who notes that "students want to be taught, in interesting ways, by teachers" (p. 23), Watkins' (2010) research challenges educational practices that have uncritically centralised the learner while decentralising the teacher, despite indications that teacher-bodies play a significant role in pedagogic practices in classrooms: for example, how pedagogic affect as "a force with productive potential" (Watkins, 2010, p. 284) is mediated by the teacher to generate excitement and interest that becomes contagious to other students and accumulates in learner-bodies as a desire to learn (ibid, p. 283).

A useful aspect of Watkins' theorisation of affect is that it explains how bodily affect is retained, becoming bodily knowledge or 'muscle memory' (Watkins, 2010). This connects with a number of similar ideas including Rinne, Gregory, Yarmolinskaya and Hardiman's (2011), concept of 'elaborate rehearsal' in the arts and Brennan's (2004) concept of 'entrainment' (borrowed in turn from psychoanalysis). These intersections are indicative of how Watkins' research on pedagogic affect can be understood in conjunction with a growing body of research that foregrounds the micropolitical work of affect in educational contexts. This work variously focusses on different aspects of affect – such as its transmission (Brennan, 2004), circulation, dispersal and even its disrupting effects (see for example, Stengal's *After the Laughter*, 2014). Sometimes researchers weave all these elements into their account of pedagogic affect (see Niccolini, 2016). Other times bodily affect is referred to indirectly – for example as "'material moments' of stillness, movement and flow" (Taylor, 2018, p. 156) that arise in 'materially dense' bodily encounters in the classroom (ibid). Similarly, Verran (1999) refers indirectly to affect as 'moments of disconcertment', which she notes "sometimes spontaneously expressed themselves in an up-welling laughter" (p. 136).

While not always the case, much educational research on 'pedagogic affect' is inspired by a Spinozist and/or Deleuzian philosophy. A few inquiries, such as that of Albrecht-Crane and Daryl Slack (2003), reach more deeply than others into the philosophy of Deleuze and Guattari to generate models suitable for performing an ethico-political analysis of pedagogic affect at macro *and* micro levels in the classroom. This particular contribution has previously been identified as formative scholarship in the field of affect in education (Hickey-Moody & Crowley, 2010). I would add that it also has the potential to translate into a wide range of broadly conceived learning environments – although there are few scholars to date that have explicitly built on this work, excepting Hickey-Moody. Albrecht-Crane and Daryl Slack's

analytical model is drawn from Deleuze and Guattari's 'project of rhizomatics' (Albrecht-Crane & Daryl Slack, 2003). It maps three types of lines that are central to understanding the work of the learning-environment event-assemblage: molar lines, molecular lines, and lines of flight. The molar lines refer to disciplined lines that act to overcode, territorialise and impose a rigid structure on the social; the molecular lines are undisciplined cracks that act to deterritorialise and fracture a rigid structure; and the lines of flight are commonly referred to as ruptures or lines of creative possibility. This analytic approach is particularly useful for producing an analysis of affect in educational contexts that has the potential to move between the macro and micropolitical work of affect, cutting across relations amongst individual bodies and the larger social body which they co-constitute. It is precisely because of this potential that I adapt Albrecht-Crane and Daryl Slack's line analytic for use in the later cartographic work performed in this research.

'Affective pedagogy', art and art practice. Possibly as a result of her connection with cultural and public pedagogies, Hickey-Moody (2016) moves beyond theorising affect in terms of how it acts as a force of pedagogy, becoming concerned with how affect as a concept might reconfigure theories of pedagogy altogether. Building on Albrecht-Crane and Daryl Slack, Hickey-Moody notes, "One of these ways is through rendering the teaching object [art] as a non-human body" (Hickey-Moody, 2016, p. 260). Affect thus becomes imbricated in her idea of 'affective pedagogy' – the concept that aesthetics can teach us "by changing how we feel" (2013a, p. 79) and by "seeing this change as a kind of learning" (2016, p. 265).

Art, Hickey-Moody writes, "can re-adjust what a person is or is not able to understand, produce and connect to" (2016, p. 261). More specifically, she suggests that the pedagogy of art (or aesthetics) can be understood in terms of how specific bodies experience the material affects made in and through art, which simultaneously act to propel a political agenda *and* create a sensory landscape. Hickey-Moody thus accounts for a given body's specific re-adjustment of its capacity to act, connect and ultimately affect and be affected (differently) when experiencing a 'materially powerful' work of art. Matter can become pedagogical because it has the capacity to affect and be affected. This gives it the power to act, or agency, and makes an opening for theorisations of more-than-human pedagogies where matter (such as art) "is no longer understood as a reflection of reality, but as intensities and dynamic flows" (Springgay & Rotas, 2014, p. 2).

Thinking with the concept of affect enables pedagogical matter to be accounted for in terms of its potential to capacitate, empower, connect and increase a learner's depth of experience. Pedagogy, as both entity and process, is about the capacitation (or incapacitation)

of the bodies involved – albeit teacher, learner, artwork or knowledge. As Spinoza (2018, p. 94) has it, “lines, planes or bodies” can be considered in exactly the same way as actions. In this sense, pedagogy, as an entity (e.g., pedagogic body) and/or action (e.g., pedagogic act), is not characterised by its attributes but by its motion and rest, swiftness and slowness – or intensities and flows (e.g., lines) – and the ways in which it augments or diminishes, assists or restrains a body’s power to act (and think). This has particular significance for certain learning environments such as the art museum, where there is a perceived need to move past ‘pedagogies of mere appreciation’ and “pedagogically engage new audiences with the very materiality of modern and contemporary art” (Sayers, 2016, p. 134).

Arts practice can itself be understood as a philosophy in action, with the act of making producing new thought. Moreover, material artefacts generated in artistic practice can be understood as philosophy in their own right, without the need for an interpretive text or explanation to sit alongside them³⁴ (doctoral writing workshop with Springgay, 2019). Instead of representing the knowable or intelligible, art, conceptualised as an *affective event*, may be understood as a group of relational folds imbued with an ethico-aesthetics (Springgay & Rotas, 2014). Springgay and Rotas (2014) extend this Deleuzian conception of ‘art as affective event’ to ask, what if the classroom is similarly re-imagined as an *affective event* – “irreducible to form, function and technique” (ibid, p. 3)? Adopting a speculative approach, they then inquire how the classroom-as-work-of-art might be enacted pedagogically by social practice artists in schools through a research-creation project: ‘The Pedagogical Impulse’ (<https://thepedagogicalimpulse.com>). They put affect into action, showing how it might work as a pedagogic force that “undoes bodies and spaces as individualised entities and shows them to emerge as durational, relational processes through which intensities course” (Dawney, 2011, p. 601).

Philosophy and philosophical practice can also be understood as affective events produced through creative practices (see <http://senselab.ca>). And in a further extension of this idea, learning environments might also be understood as affective events or, as conceptualised in this research project, intensely affective event-assemblages, with the potential for providing materially powerful pedagogies that also operate like a work of art. What is especially relevant here is how approaching the classroom from a speculative position of ‘what if?’ shifts bodies, spaces and pedagogies away from predetermined forms and functions into a series of

³⁴ This doesn’t mean interpretive texts are not useful, however; it means that to write about or in response to art is to create another material-discursive entanglement with the artwork at hand.

encounters where learners, learning environments and pedagogy are co-composed in ongoing practices of becoming.

Encountering Affectively Intense Material Environments

While sometimes overlooked in ‘mainstream’ educational discourses of the day (e.g., present-day social constructivist discourse), the material practices of the school environment have long been considered an important part of pedagogy and curriculum by a range of educational movements. For example, the learning environment has been acknowledged as a significant actor in the pedagogy of the Reggio Emilia movement, materialising as the third teacher. The Montessori movement too places an emphasis on the material affects of the learning environment, for instance by providing ‘little libraries’, child-sized equipment and furniture, and hide-away ‘retreat areas’ (Burke, 2016). Yet despite “incorporating opportunities for both creativity and participation in learning, the approach still basically focuses on conceptual creativity and [stages of] development” (Lenz Taguchi, 2011, p. 211). Even the most materially engaged educational practices still privilege the rational and intentional, while regarding learners as discrete individuals who inhabit a pre-existing environment – carefully constructed to serve human needs. Nevertheless, Kraftl’s (2015) study on the geographies of alternative education shows how messy-ordered materialities and temporalities of learning can be negotiated to generate “affective ‘atmospheres’ from which non-linear, creative forms of learning may flow” (p. 19).

In this way, Kraftl’s (2015) study begins to enter the realm of a lesser researched aspect of the materialities of the learning environment: its situated material affects, and the ethico-political effects of these affects, which are always relational, contingent, and continually emergent in diverse sociomaterial practices. And this is what is particularly relevant to my research project, which is located at the intersection of the material environment, trans-individual affectivity, bodily affects and pedagogy. I have therefore limited the following discussion to selected literature that somehow informed my developing understanding of intense learning environments, or environments that create the conditions for learning intensely – whereby thinking is recast “as a ‘compound of forces’ that ‘invests’ the body, causing it to compose novel relations with other bodies, provoking a kind of *intensive learning*” (emphasis added, Deleuze cited by Duff, 2016b, p. 179). In saying this, it is important to note that intensity does not necessarily equate to busy, loud, or otherwise exaggerated spaces where learner-bodies are subjected to prolonged periods of high intensity. Rather, returning to Massumi’s (2002a) definition, intensity can be thought of as a population or swarm of *potentials* for connectedness – and very much involves what Kraftl (2015) describes

as messy materialities and affective atmospheres (i.e., trans-individual affects) through which bodies learn to compose themselves with other bodies, human and otherwise (Duff, 2016b).

While not theorised as such, Burke's (2016) quiet spaces of Western postwar schools could also be said to produce pedagogic intensities as defined by Massumi, by creating the conditions for "quiet and concentrated practice" (Burke, 2016, p. 202), and therefore, I would argue, for learning intensely. Interestingly, in Burke's historical account of such spaces, quietness is understood not as an absence of sound but in terms of *what quiet spaces do*, politically, as part of an intentional curriculum design, to "strengthen individual citizenship and collective democracy in the postwar decades" (Burke, 2016, p. 193). Again, Burke does not theorise this further, but still I see a link with Spinoza's all-important question 'what can a body do?', shifting her 'unit of analysis' from the essence of quiet spaces to how they act as situated phenomena that "are always, already a function of many different things acting together" (Duff, 2016a, p. 16)

Burke's contribution is significant on (at least) three counts. Firstly, she (re)activates an engagement with historical spatial practices to challenge dominant narratives of childhood and contemporary schooling by tracing the multiple and contingent practices of quiet spaces, enacting a renewed attention to the material environment in the process. Secondly, she considers quiet spaces in terms of what they once did and therefore, by extension, creates the possibility for future scholars to consider what they can do (differently). Thirdly, by considering quiet spaces in terms of what they do as opposed to what they are, Burke maps the political forces of schooling onto her historical tracing of quiet space practices – showing quiet spaces to be variously linked to discourses of domesticity, social justice, power, freedom of choice, creativity and, perhaps most pervasively, withdrawal (with withdrawal framed as an affirmative act of retreat, not as an exclusionary practice). I argue that Burke has produced a historical-material-discursive-political tracing of educational practices of quiet spaces.

In so doing, Burke redraws attention to a sensory history of schooling, noting that "Scholars interested in school design and the nature of the relationship between materialities and ideology have started to chart histories of schooling via the senses" (2016, p. 192). That is, she brings materiality, discursivity and bodily senses together into histories of schooling. Interestingly, there is also a related movement in architectural practice – one that similarly delves into the sensory – which might also be understood as correlating with affect. First published in 1996, Pallasmaa's (2013) *Through the Eyes of the Skin* makes an early foray into how memorable experiences of architecture fuse space, matter and time "into the basic substance of being, that penetrates our consciousness" (p. 77). Pallasmaa proposes a sensory

architecture – one that accounts for the powerful bodily affects that may be generated in an encounter with the material environment – saying “there is no body separate from its domicile space” (Pallasmaa, 2013, p. 44). He adds, “Architecture strengthens the existential experience, one’s sense of being in the world, and this is essentially a strengthened experience of self” (ibid, p. 45). Interestingly, this resonates with a Spinozist ethics of affirmation, whereby it could be understood as indicating that an intensity of connection to the world is the stuff of our existence.

Sensory architectural practices play a role in not only constituting the material environment, but also producing architectural structures that purposefully act to materialise pedagogical forces in “frissons of physical encounter” (de Bolla, as cited in Ellsworth, 2005, p. 23). For example, an encounter with the Libeskind Jewish Museum in Berlin, named ‘Between the Lines’ by Libeskind to indicate the space between organisational thinking and relationship thinking in German-Jewish history, activates an in-between space by evoking a range of feelings – including disorientation and insecurity – through a combination of sensory features such as architectural voids, a lack of heating/air conditioning, and dramatic natural lighting (<https://www.jmberlin.de/en/architecture-buildings>).

In a sense the Libeskind Jewish Museum can also be understood to “operate like a work of art” (Springgay & Rotas, 2014) or an affective event, or even better, an affective event-assemblage. So can Cvetkovich’s (2003) queer archives of feeling, which in stark contrast to the grandeur of the Libeskind Jewish Museum offer up everyday ‘scenes of pedagogical address’ (Ellsworth, 2005). Aligning more with Stewart’s (2007) assemblages of ordinary affects, Cvetkovich’s (2003) ‘queer archives of feeling’ attend to ordinary objects that have feelings attached to them, particularly feelings that also get attached to what gets named trauma, in an effort to “depathologize those forms of loss, or mourning, as well as the impulse to hang onto things” (Carland & Cvetkovich, 2013, p. 73). These archives are constituted by objects and photographs that might seem inconsequential but do significant pedagogic work, connecting people “with the deeply sedimented histories of violence and survival” (Carland & Cvetkovich, 2013, p. 77). Cvetkovich explains in an interview that documenting losses, such as disappearing neighbourhoods in the wake of the AIDS epidemic in New York, produces an archive that speaks “to the problem of absent archives, by cultivating a capacity to see things that don’t seem to be there ... and enable us to glimpse ghostly presences” (Carland & Cvetkovich, 2013, p. 76).

‘Affective events’ and the learning assemblage. Burke’s quiet spaces, Cvetkovich’s archives of feeling and the Libeskind Jewish Museum are examples of what might also be

understood as very different event-assemblages that create the conditions for learning intensely. Thinking with the concept of assemblage and processes of re-assembling is well established in philosophical, theoretical and methodological literature (such as, but certainly not limited to, J. Bennett, 2009; Callon, Law, & Rip, 1986; Deleuze & Guattari, 2013; Duff, 2014, 2016a; Fox & Alldred, 2015; Jackson & Mazzei, 2016; Latour, 2005; Mulcahy, 2012; Müller, 2015; Müller & Schurr, 2016), and is something I return to in the following map fragment where I discuss the emergent rhizo-methodology of this project.

It must suffice to say at this point that the literature that is of particular relevance to this project in methodological terms includes Albrecht-Crane and Daryl Slack's (2003) analysis of the territorialising, deterritorialising and rupturing effects of affectivities flowing through the classroom, McCoy (2010) and Henderson's (2014) mobilisation of the notion of the crack to work into and out of the molecular line, and Youdell and Armstrong's (2011) deployment of a language of lines to map the affective choreographies of two unsettling/confrontational events while attending to the constitution of subjectivities and collectivities.

Altogether, these studies underpin my understanding that the work that pedagogic affect does emerges with/in distributed networks and assemblages, relocating pedagogy from human individuals to a relational space in and between moving bodies and things and ideas. They also set a precedent for the generativity afforded by an uptake of a Deleuzian language of lines to unravel the ethico-politics of pedagogic affect. Each in its own way produces an analysis of how the micropolitics of lived experience is consequential in un/intended ways, reverberating across different levels of the 'socius' and producing lines of creative potential (or death) at unexpected moments. In so doing, these studies also show that affect is not always about the grand gesture – it is just as much about the minor gesture (Manning, 2016b) that works its way through the cracks, creating the conditions for transformative potentials to be actualised.

Any study that focusses on affect must remember that "Affect cannot be brought to bear on a lived situation – it is the lived reality of the situation" (Hickey-Moody & Page, 2016, p. 9). Understanding the learning environment as an assemblage that courses with affectivities enables research that does not impose affect onto an event but starts from its situated practices. Mulcahy (2012, 2015, 2016, 2019)³⁵ has produced an extensive body of work that explicitly brings affect and learning environments fields of research together. Her contributions to the field show how a sociomaterial sensibility combined with a practice-led

³⁵ See also co-authored publications (Mulcahy, Cleveland, & Aberton, 2015; Mulcahy & Morrison, 2017; Mulcahy & Witcomb, 2018).

approach can generate ways of accounting for the mutually constitutive activities of a broad range of actors (or actants), including space, bodies and affects, as integral participants in the learning assemblage. What Mulcahy's contribution to the field also does is to persistently thread her accounts of teaching and learning with the ethico-political implications of affect. She produces empirically informed accounts of the ethics and politics of pedagogic affect (and affective practice) with/in the learning event-assemblage, creating an interesting connection to Bignall's (2010) consideration of "Deleuze's work on affectivity and assemblage as suggestive of an ethics beyond enjoyment, potentially encompassing the sociable principles of 'human warmth', care and joy" (p. 83).

Encountering the Politics of Pedagogic Affect

In a world that is experiencing ongoing trauma of colonisation, first contact, forced immigration, environmental degradation, and climate heating, the "circuits of affect continually open connections, and often connect to the very stuff of fear and terror" (Probyn, 2004, p. 38). Research that focusses on affect has consequence precisely because "Affect maps the micro political relations that constitute the beginnings of social change" (Hickey-Moody & Page, 2016, p. 6).³⁶ These micropolitics (or powers) of affect are imbued with an ethical dimension which is in no way concerned with separate individuals adhering to a moral code – ethics eschews any link with coded morality (e.g., adherence to stated principles or rules). Rather, "ethical practice requires thinking beyond the already known, being open in the moment of the encounter, pausing at thresholds and crossing over" (Davies, 2018, p. 121).

While still an emergent area of empirical research, the ethics of affect have been relatively well theorised by (new) materialist, posthumanist and Deleuzian scholars. As a result, there are a number of approaches that can help conceptualise and/or analyse the ethics (and politics) of affect.³⁷ The position I adopt is a Spinozist-Deleuzian inspired ethics of "radical openness to the emergent, multiple being of the other, where that other is both human and non-human, organic and inorganic" (Davies, 2018, p. 119). This position is further informed by the following three different theoretical lines of inquiry which, while having distinctly different philosophical genealogies, still share varying degrees of alignment and

³⁶ Despite the inherently ethical and political nature of affect (as I go on to explain), Deleuzian-inspired studies of affect are criticised because of their tendency to be apolitical (Boler & Zembylas, 2016). I am of the view that any study that attends to affect is always already political; however, as researchers of affect, there is still much work to be done to make the ethical and political dimensions of affect theory more discernible in our research thinking-doing.

³⁷ While theorists such as Barad do not explicitly write about affect, I still understand their work to implicitly work with concepts that can be mapped onto the notion of affect. For example, '*intraaction*' can be taken as another way to talk about the work that affect does (Davies, 2018). Likewise, Butler's idea of "being vulnerable implies the capacity to affect and be affected" (Zembylas, 2019, p. 6).

generative (in)tensions. They are M. Lloyd's (2015) takeup of Butler to conceptualise vulnerable bodies, Spinoza's (2018) ethics of joy or affirmation as taken up by Deleuze (1990), Deleuze and Guattari (2013) and Braidotti (2011, 2013b), and Barad's (2007, 2012) ethics of response-ability. To show how these ideas may fit together, I will first introduce the concept of vulnerable bodies, then 'nest' this concept within a brief discussion of an ethics of affirmation. This leads me to lightly map a Baradian ethics of responsibility onto a Spinozist affirmative ethics, before locating them with/in a politics of hope.

An ethics of vulnerable bodies. An ethics of radical openness involves being receptive to the other – or becoming vulnerable. “[T]o be vulnerable for Butler is to be exposed to what is beyond or outside the body” (M. Lloyd, 2015, p. 172); this vulnerability may also be understood as being exposed to being affected by other bodies, and in turn affecting those bodies. Vulnerability then, in a pedagogical sense, is significant to learning – likely a condition of learning – especially if we accept that invulnerable bodies have a lesser capacity to affect and be affected. Vulnerability is also a condition of possibility and responsiveness “including ‘all the various ways in which we are moved, entered, touched, or ways that ideas and others make an impression on us” (Butler, as cited in M. Lloyd, 2015, p. 172). Attending to vulnerable bodies draws attention to the ethical implications of bodily affects while prompting an attentiveness to the interdependency of bodies and their common vulnerability, eliciting “a rethinking of our very relationality with others” (Zembylas, 2019, p. 4).

An ethics of affirmation. The concept of vulnerable bodies is useful for thinking about bodily affect, but is not (and nor was it intended to be) a comprehensive approach to the ethico-politics of affect. It can, however, be nested with/in a Spinozist ethics of affirmation or joy. Specifically, Spinoza (2018, p. 144) defines joy as “the *passing* of a person from lesser to greater perfection”, and sadness is conversely defined as “the *passing* of a person from greater to lesser perfection” (emphasis added). Conceived in this way, joy and sadness refer to changes (e.g., augmentation or diminishment) in a body's capacities. Creating the conditions for individuals to engage in joyful relations is an enactment of an affirmative ethics (or ethics of joy) because it affirms, augments or assists their capacity to act.

Affirmative affects enhance or augment a body's power to act (and think), affirming a body's existence, and performing ‘ethical good’. Affect is integral to an affirmative ethics because “Affectivity is the power that activates your body and makes it want to act” (Braidotti, 2011, p. 312). To perform ethical good is to enhance a body's power to act, connect with multiple others and affirmatively express itself. When translated into an educational context, a pedagogy that adopts an affirmative ethics is concerned with creating the conditions for

learning intensely by cultivating the capacity to form multiple connections with multiple others, and not just other humans.

Affirmative ethics cultivates “positive interconnections and relations that can sustain a web of mutual dependence” (Braidotti, 2006a, p. 250). The strong sense of collectivity that this produces positions the individual subject quite differently from the individualistic, contained, and self-determining ‘neoliberal’ subject. Instead, it promotes a non-unitary, assembled, fluctuating, decentred sense of the self. While a ‘self’ *may* be affected by ‘negative passions’ such as pain and discomfort, an ethics of affirmation puts an “emphasis on moving across the pain and transforming it into activity” (Braidotti, 2006a, p. 244).

There is potential for bringing this thinking into pedagogies that operate through difficult heritage and may cause some students a degree of pain, thereby enacting what Zembylas (2018a) refers to as ethical violence in order to achieve individual and social transformation in social justice education (Zembylas, 2018a). This situation could be negotiated within an affirmative ethical practice that does not seek to eliminate pain and suffering but acts to build capacity to displace pain by reworking negative or discomforting relations in the direction of the affirmative. This shifts the question from whether or not pain can become pedagogical to “how to organise the learning experience in such a way that it creates new openings from which individuals can reclaim trauma from the past in productive (e.g., reconciliatory) ways” (Zembylas, 2018c, p. 199).

Attending to the affirmative ethics of pedagogic affect activates the potential for making what could be, as Skattebol (2010) notes, “substantial shifts in the way we engage children in meaningful but difficult issues in our community and in the way we [think] about pedagogical practice” (Skattebol, 2010, p. 81) – and, I would add, how we think about what counts as learning. Instead of depending on narrow measures of literacy and numeracy, learning might be alternatively regarded in ethical terms, with learning being accounted for in terms of “what bodies ‘can do’ in their encounters with one another – and not as an effect of the observance of particular principles or rules” (Duff, 2014, p. 153) or predetermined knowledge acquisition.

An ethics of response-ability. Pedagogic affect borne out of ethical practice is also a matter of response-ability to the other (which is never truly separate from ourselves). It “requires recognizing and facing our responsibility to the infinitude of the other ... who gifts us both with the ability to respond and the longing for justice-to-come” (Barad, 2012, p. 219). Response-able practice might be thought of as engaging in an ongoing collaboration with the world, being ‘in touch’ (ibid). The linked concept of *intraaction* is a key to understanding the

Baradian ethical sensibility referred to as onto-ethico-epistemology. It also intersects with a Spinozist-Deleuzian notion of affectivity. As Davies (2018, p. 120) claims, “awareness of that intra-activity, the capacity to affect and be affected, lies at the heart of Barad’s ethics”. It is in iterative processes of *intraaction* (affecting and being affected) that the world is configured – always with a level of indeterminacy (or differing) which, in Deleuzian terminology, might be understood as the molecular line – or the crack.

The indeterminacy of *intraactivity* (affecting and being affected) makes it possible to think-do difference affirmatively (rather than ‘in opposition to’) and thus generate the conditions for invention, creativity and transformation. Barad explains further that “indeterminacy is not a lack, a loss, but an affirmation, a celebration of the plentitude of nothingness” (2012, p. 218). According to Barad (2012), indeterminacy is what makes our radical responsibility to the other possible. Indeterminacy is critical to the ethical pedagogical experience because it is that which puts learners into affirmative relation with moments of unknowing, moments in which language fails, and moments when the self is forgotten (O’Donnell, 2018). As an educator this means “one must seek to ‘programme chance and surprise’ or *tuché*” (original emphasis, O’Donnell, 2018, p. 40).

A politics of hope. The politics of this ethical undertaking is one of hope (Massumi, 2002b). Hope resides in the idea that with affect there is the ever-present potential for affirmative change in capacity: “When you affect something, you are at the same time opening yourself up to being affected in turn, and in a slightly different way than you might have been the moment before” (emphasis added, Massumi, 2002a, p. 3). Difference in itself, like indeterminacy, is made possible in ongoing flows of affirmative relations (Deleuze, 1994), or the world’s iterative becomings.

Attending to affective intensity creates openings in which researchers and educators can “enact new possibilities about how attending *to* and *through* affects ... extend(s) rather than diminish(es) the ethical and political field in which educators move” (original emphasis, (Zembylas, 2017, p. 2). This creates the conditions for the emergence of pedagogies and learning environments that emphasise indeterminacy, openness and an ethical accountability to the other (Braidotti, 2006b). The ethical and political task for educators is to cultivate the capacities of learning environments to create potentials for “ephemeral shifts in sensibility, ideas and perceptions where the world opens, and the student or child or teacher opens to the world” (O’Donnell, 2018, p. 44), perhaps by creating a classroom that operates like a work of art, or perhaps by arranging an encounter with an affective event-assemblage such as an archive of feelings, whereby the conditions for learning intensely, aesthetically and more-

than-rationally are fostered. This is because “What you can do, your potential, is defined by your connectedness, the way you’re connected and how intensely” (Massumi, 2002a, p. 31).

Map Fragment III: Into a Field of Light

Topological coordinates: C₄-E₄



Figure 2. Walking amongst the 50,000 iridescent globes that constitute Bruce Munro's (2016-2020) Field of Light, Uluru.

Artist Bruce Munro is noted for “his immersive site-specific installations that employ light to evoke an emotional response, often in an outdoor context and on a monumental scale” (<http://online.pubhtml5.com/ecvv/jezv/#p=4>). His Uluru-based installation, *Field of Light* (2016–present), has been said to move some people to tears, with the affective qualities of the artwork working in tandem with the affective resonance of Uluru itself. Affect is a vital component of the art installation, with the artist applying the emotive qualities of light on a vast, environmental scale to entice visitors into an ephemeral experience that promotes a shared connection with the world at large. In this way, *Field of Light* becomes an example of an intense environment, with the affective flows becoming co-constitutive of a pedagogic assemblage that invites the audience to immerse themselves in a collective engagement with things like the landscape, astronomy, weather, transitions through sunset and sunrise, seasons, and cultural histories embedded in the land.

I came to *Field of Light* to inquire into its suitability as a site for this research project. It was an act of getting in amongst it all in order to formulate a proto-methodology, *in situ*. Initially, I conducted a series of informal observations at *Field of Light*, immersing myself in the complete experience from hotel pick-up to drop-off. I attended the exhibition on three occasions over two days for approximately six hours in total. I went on all *Field of Light*

experiences on offer (Sunrise, Sunset and Star Pass), attending as part of a public tour group on each occasion with my then eight-year-old son as ‘research assistant’. While there, we took photographs, made sound recordings of the ambience, and collected marketing material. After each visit I wrote a detailed account of my experience, paying particular attention to the undulations in the atmosphere and build-up to moments of affective intensity. I also found myself attending to how the *Field of Light* event slotted into the larger Uluru-tourism assemblage, wondering how this worked in relation to the Anangu people who are the traditional custodians of this land. *Field of Light* also drew my attention to the temporal dimension of an affective encounter. The affective resonance of the land has affected and continues to affect the artist’s career profoundly, ever since his first encounter with Uluru many years ago. Unbeknownst to him, Uluru would plant a seed that would grow into his *Field of Light* styled works, then come full circle with the Uluru iteration of the art installation. This, in turn, has triggered new affective trajectories (even acting on this research), some of which may become evident relatively soon and some of which we may not see evidence of for years, if ever.

So *Field of Light* is the starting point for this map fragment.³⁸ I deliberately started outside method (though not in opposition to it) to avoid what Deleuze calls ‘dogmatic images of thought’ and to be receptive to chance encounters that might engender inventive thinking (Jackson, 2017). Rather than applying a preconceived procedure to my study and following it like a script, the research assembled in the messy *intrarelations* of theory, sites, events, datawork, art-making, writing and becoming-researcher. In all of this, *Field of Light* performed as a provocation for thinking about the ontological, epistemological, methodological challenge of how to study pedagogic affect in a (new) empirical way. Although *Field of Light* did not become an ‘official’ site, it influenced the development of my overarching research approach. The research ‘techniques’ also involved a gradual emergence in relation to the *Field of Light* experience, then were further refined in relation to the final selection of sites.

The critical contribution *Field of Light* made to this project concerned the development of theoretically informed ‘sensitising concepts’ (Blumer, 1954) that were

³⁸ The Field of Light was proto-methodological. Given the experimental nature of the methodological work involved in this research, the Field of Light was a necessary first step that enabled me to rehearse the research design in situ and locate theoretical engagements with affect in practice. This strategy made it possible for the eventual methodological approach to emerge with/in practice – making this aspect of the research both practice-based and practice-led. The Field of Light might therefore be best thought of as an enactment of my proto-methodological thought experiments. Like the ideation phase of the design process, material generated with/in the Field of Light is knowingly partial and incomplete. For example, it does not flesh out the pedagogic dimensions of the site. Yet it is included in the thesis because it critically enhanced my capacity to engage with the case of pedagogic affect in the three sites that would eventually constitute the multi-sited case study.

grounded in practice – albeit explorative and experimental – through which to engage in a study with/in affect. The concepts included:

- affective moments, which would become incorporated into the idea of the encounter;
- affective intensities and atmospheres, which would become enmeshed;
- bodies and what they do, such as humans, flies, tour groups, collectives, individuals – and their actions;
- material affects of things, such as artwork, technology, land, night sky, weather;
- material affects of stories and ideas, such as cultural narratives of the night sky and the storying of Uluru by a range of people including the artist Bruce Munro, the tourists, the tourism operators, and the Anangu people;
- the contingent agency of things, such as the solar-powered lights pulsing through the night then fading as the day broke to be recharged by the sun (Figure 3);
- and how all these things are inextricably entangled in ongoing processes of becoming.



Figure 3. The lights go down as the sun comes up, revealing Uluru in the distance.

These concepts became the basis for developing a working method. They forced me to come to terms with the impractical reality of studying phenomena that are not only ephemeral but

will also not sit still. Most importantly, the concepts prompted me to establish a methodological approach that would work productively with and through affect.

Doing a Rhizo-cartography

The experience of walking around the *Field of Light* is akin to walking around a giant, living brain-like structure. The installation itself is polycentric. It is formed out of numerous meandering lines of light that tangle into clusters (Figure 2). The clusters intermingle, so it is uncertain where one ends and another begins. Shooting up vertically from these twisting formations are stalks topped by iridescent globes that undulate through different colour ranges with a soothing rhythm. I wonder, if Deleuze was alive today, what would he think? I would say he would call it a rhizome because it spreads horizontally, without a central axis or hierarchical structure. It also produces multiplicities. It does different things to different audiences who arrive in the middle of it all happening, move around the installation, and leave (different), while it lives on (differently) without them. *Field of Light* is continually changing in relation to the seasons, the time of day, weather, fly population, local wildlife, tourism operators, school holidays, social media, advertising, news reports, the impact of visitors on the natural environment, and what type of audience it attracts (to name just a few things). It splinters into new rhizomes and rhizomic assemblages (such as this research) that are themselves involved in a process of becoming. So it produces rhizomic thinking (Honan, 2007) and a multiplicity of thought-making (Sellers, 2015, p. 8).

I would also say Deleuze would call *Field of Light* a map, because it is constituted by a set of “various interacting lines” which, like lines on a hand, are a map (Deleuze, 1990, p. 33). “The map is open and connectable in all of its dimensions” (Deleuze & Guattari, 2013, p. 12) and can be adapted by an individual or collective. “Lines,” Deleuze goes on to tell us, “are the basic components of things and events. So everything has its geography, its cartography” (Deleuze, 1990, p. 33). For example, *Field of Light* does, a rhizome does, and so does this PhD (which might also be thought of as a rhizome). One performs cartography by *mapping out “pathways and moves, along with their coefficients of probability and danger”* (emphasis added, Deleuze, 1990, p. 34). An analysis of the lines, spaces and becomings in a given event-assemblage that looks for multiplicitous and rhizomic connections can be understood as a type of rhizo-analysis. This pairing of cartographic work with rhizo-analytic work comes together as a methodological approach which I term a rhizo-cartography – or more precisely, an emergent rhizo-cartography.

Rhizo-cartography is the methodological approach that underpins this research project. It is an emergent cartography, which seeks to map affective flows (lines) at the

research site-events, or better, event-assemblages. To do so, I bring together a Deleuzian understanding of mapping and research as entangled analytical processes that are rhizomatically formed. As rhizomes are heterogeneous, there is no one way to perform a rhizo-methodological work; rather, rhizo methodologies are specific to the research and researcher (Henderson, 2014; Honan, 2004, 2007; Masny, 2014, 2016; Sellers, 2013, 2015; Sellers & Honan, 2007). My particular approach fuses convention with invention – bringing established qualitative practices together with experimental and arts-based methods of doing data. I work directly with Deleuze and Guattari's (1983) pocket book called *On the Line*, which explicitly explores rhizomes and lines. They indicate how, by thinking of an assemblage as a cartography of dynamic lines, we can begin to map the affective lines (flows) and their connections, disconnections, ruptures and multiplicities. This analytic of lines, which is explained in more detail later in this map fragment, makes subtle appearances throughout the datawork, then gains full expression in Map Fragments VIII and IX in this thesis.

However, I am getting ahead of myself. I must first attend to the ontological affiliations of this project before moving on to discuss the use of affect to organise the research conceptually. I will then introduce the design of the project as a multi-sited case study. This leads to an explanation of the ethnographically informed research techniques used to generate data, select sites, recruit participants, and guide ethical research practice. Then I return to the subject of doing data. This is where I flesh out my line analytic, introducing a typology of lines and how they map onto the different pedagogic affects in the research assemblage. I do this with datawork that informed the process, which, while perhaps a little unusual for a methodology 'chapter', is a necessary move to give coherence and context to the map fragments to come. It also gives the reader a preview of the empirical work that unfolds.

Onto-methodology

This research emerges "in the world that affect proposed" (Stewart, 2017, p. 192) and has come about through a slow process of my becoming attuned to the dynamic flows of affect that form, and are formed, in ongoing practices. My ontological-methodological formation, or onto-methodology (Nimmo, 2016), has assembled from a range of sources which all share a connection with process-orientated philosophy. In a process-orientated world, reality is taken as being performed into existence in a wide range of practices with an equally wide range of people, things, ideas and spaces that are always in a continuous (and contingent) state of becoming. The study is also broadly situated in proximity to what Lather and St. Pierre describe as the 'posts' (Lather & St. Pierre, 2013; St. Pierre, 2011, 2013, 2014b), which characteristically understand the relation between what things are (ontology) and how we

come to know about things (epistemology) to be highly ethical (St. Pierre, Jackson, & Mazzei, 2016, p. 99), and accompanied by a “shifting focus from an epistemology of human consciousness to a ‘quantum ontology’ of matter and time-space” (Clough, 2009, p. 47).

This particular project settled in a space between the new empiricisms (Clough, 2009), new materialisms (Fox & Alldred, 2017), sociomaterialism (Fenwick, 2014), and ‘after-ANT’ scholarship (Fenwick et al., 2011; Law, 2004; Law & Mol, 2002; Mol, 1999). It is informed by the often intersecting, sometimes conflicting philosophies, methodologies and methods that give these diffuse interdisciplinary fields their particular sensibilities. The project shares much with Clough’s (2009; 2007) new empirical “empiricism of sensation” which is grounded in a Deleuzian-Massumian theory of affect. It also leverages off Fox and Alldred’s (2017) development of a new materialist sociology, connecting with the four ‘voices’ underpinning their brand of new materialism – namely Latour (ANT and re-assembling the social), Deleuze and Guattari (materialist ontology, radical empiricism), Barad (materialist onto-epistemology), and Braidotti (the posthuman, nomadology and ethics). Fox and Alldred’s work on new materialist approaches to analysing the research assemblage also plays a critical role in doing data in this research. After-ANT scholarship enters this research later than the rest – ushered in by data – and increasingly exerts itself in the datawork and analysis. Particularly influential are ethnographies of practice such as Mol’s (2002) *The Body Multiple* and Law’s (2004) work, which explore the tensions between order and chaos that are created when ordering processes rub up against messy materialities.

While these approaches all contribute something unique, they also overlapped in discernible ways. First and foremost, they all foreground relationality which is underpinned by notions of multiple interconnecting forces and contingent agencies (Fox & Alldred, 2015, p. 401). They also align with what has been identified as a fundamental shift from conventional human-centred research (characterised by representation and interpretation) towards research that is characterised by its attention to the mutually constitutive social and material ‘doings’ of a world full of people things, ideas and spaces. This does not mean erasing the human, but realising that the human is one of many actors in any given scenario (the human and ...). It entails considering the extent to which a project’s research design works to privilege the human (or not) and privilege the representational (or not), and then attending to the micropolitics this produces in the given research assemblage (Fox & Alldred, 2017). Fenwick et al. (2011) write: “The question of producing knowledge and learning shifts from a representational idiom, ... and understanding a world that is out there, to a view that the world is doing things, full of agency. Not only humans act, because non-humans act on and

with humans” (p. 3). This push-back on the notion of the individual wilful self is made in an effort to understand “one’s-self-in-relation” (Davies, 2010, p. 60) and the subject as co-implicated, (or entangled) with more-than-human others.

The approaches thus far discussed also share what Nimmo (2016) calls the ‘post-structural critique of representation’ – but certainly do not seek to leave it behind. Instead, they are concerned with making ways to respond to phenomena of concern in ways that, as with a sketch, are “a response to its subject, but an irreducibly specific one located and embedded in a particular relational encounter” (Nimmo, 2016, p. xxiii). It is also about making ways to sidestep dualistic or categorical approaches to representing the world, transforming duality into hybridity, and broadening the definition of legitimate knowledge practices. This task is sometimes approached by invoking Deleuzian-like philosophical concepts such as ‘rhizome’ and ‘becoming’ and ‘encounters’ and ‘events’ and ‘multiplicity’ and ‘the fold’ and ‘assemblage’ and ‘affect’ and even deliberate use of the conjunctive ‘and’ to enter a transversal space of possibility (St Pierre, 2014b). The Baradian concept of *intraaction* also works to emphasise the active and co-constitutive nature of things. It does this by emphasising that “elements and forces penetrate one another – they act together – to bring forth what *appear* to be the solid, separate, immutable objects of everyday life” (emphasis added, Fenwick, 2014, p. 5). So the use of language in this thesis is not an attempt to be overly theoretical or alienate a readership, but a necessary onto-methodological infra-language (Latour, 2005) which attends to both words and things.

An affective orientation. The pedagogic effects of affect, in practice, are the focus of this study. Affect also plays a critical role as a heuristic (Romanycia & Pelletier, 1985), guiding the decision-making process throughout the processes of design, fieldwork and datawork. Using affect in this way acts to shift the research practice into a more-than representational (Lorimer, 2005) space that accounts for the agency of things, ideas and spaces – as well as people. As Clough (2009) argues, “any method attending to affect will profoundly unsettle any conception of method as being in control of human agency or human consciousness inherent[t] in the human subject” (p. 49). Deploying affect as a heuristic also draws out understandings of how affect as pedagogy is encountered, constituted by and constitutive of the people, things, ideas and spaces in a given site-specific event. Critically, a focus on affect in an educational context foregrounds the notion of meaning-making and mattering as joined in the affective dynamics of learning by accounting for the complex and “dynamic process of discursive practices *and* the materiality of the body” (original emphasis, Zembylas, 2007c, p. 29). That is, among other bodies (e.g., a body of knowledge), affect is interpreted and given

meaning by teacher-bodies and learner-bodies which in turn produce new affects, shifting the affective dynamic. So, while affect is conceptualised as a dynamic trans-individual force, bodies are also implicated in “bodily affectivity” (Dragoijlovic, 2015, p. 316).

Pedagogies that attend to affect “highlight the embodied, intensive and material aspects of learning” (Duff, 2016b, p. 179). Learning itself occurs in an encounter (or a series of encounters), and according to Deleuze (1994), may be experienced “as a rupture or shock in which a body, whether human or nonhuman, is opened up to forces of difference and becoming” (Duff, 2016b, p. 179). Learning thus becomes an affectively intense materialising process whereby “forces, sensations and intensities are transmitted between bodies in ways that transform their distinctive capacities” for affecting and being affected (ibid). Central to my inquiry are questions of how pedagogic affect is conditioned (or formed), how it conditions (or forms), and to what effect? The two main concepts that I think through are ‘affective flows’ and ‘affective assemblages’.³⁹ These interlinked concepts are grounded in Deleuzian philosophy but are also informed by recent developments in affect and practice related literature.

Affective flows. Affect is a relational dynamic that evolves as a correlative *intraplay* among the people, things, ideas and spaces that make up a given assemblage. As such, it is a trans-individual force that manifests as both an affective hum (atmosphere) and affectively charged bodily encounters, often at the same time. These characteristics of affect can be understood as “two sides of (the) same coin” (Slaby, Mühlhoff, & Wüschner, 2019, p. 4), and make up the flows of intensity in an event-assemblage, “along with their coefficients of *probability and danger*” (Deleuze, 1990, p. 34). The coefficients of probability and danger Deleuze refers to are central to mapping the flows (lines) in a given event. Probability and danger do not exist without each other, nor do they oppose each other. They are co-constitutive of a single dynamic (line), giving it its affective tone and intensity. In this research, probability and danger are reconfigured variously as a dynamic of promise-and-threat (connecting with Stewart, 2007), and fear-and-hope (connecting with Spinoza, 2018).⁴⁰

Affective flows can be intentionally *and* unintentionally produced and can become constitutive of intentional *and* unintentional pedagogies. Baker’s (2008) notions of didactic and delirious affect, whereby the didactic is the intended and the delirious the ‘wild’ affects

³⁹ While admittedly the term ‘affective assemblage’ is an oxymoron, since all assemblages produce affects, I use the term to foreground affective intensity as a critical component of my assemblage thinking

⁴⁰ Fear in Spinoza’s world is a hybrid of joyful and sad relations (or passing of uncertain sadness) because there is no hope without fear or fear without hope. Fear, like all emotions, is discussed in terms of capacitating and incapacitating a body’s power to act in the context of a given encounter, e.g., in situ (Spinoza, 2018).

(Slaby & Mühlhoff, 2018) of an affective experience, are useful ways of conceptualising these different affective flows and attuning to their role in a given pedagogy.

Affective assemblages. Affect and assemblage go together. An assemblage emerges when multiple, heterogeneous parts enter into a specific, dynamic *intraplay* of mutual affecting and being affected to form a whole (Müller & Schurr, 2016, p. 28). Affect is said to be the pulse of such assemblages, becoming the source of their power: “making the socio-material hold together or fall apart” (Müller & Schurr, 2016, p. 9). “Affect – in the form of dynamic tangles of affective relations – is the vital core of an affective arrangement” (Slaby et al., 2019, p. 4), and central to understanding how more-than-human agency is generated in sociomaterial encounters.

Within the assemblage, agency “is not attributable to any one thing, but rather bound to [the] assemblage” (original emphasis, Jackson & Mazzei, 2016, p. 94). In the research assemblage, data and other living and non-living entities can all exert force and have agency (J. Bennett, 2010). Becoming entangled in this are the reader (you), thesis, PhD researcher (me), research techniques, research sites, participants, data, and datawork. A research ‘subject’ can be understood as an assembling of entities within the larger research assemblage, rather than a distinct and pre-existing human subject. For example, a researcher-body assembles with living and inert others for a period of time (researcher-laptop-chair-desk-data-tea), then disassembles and reassembles in different combinations of living and inert others (researcher-notebook-pencil-audiorecorder) only to disassemble and reassemble again and again (Somerville, 2016).

When used analytically in specific research projects, assemblage thinking is evocative of emergence and heterogeneity “in relation to other concepts and constructs without rigidifying into the thingness of final or stable states” (Marcus & Saka, 2006, p. 106). Assemblage thinking offers a way to work with the heterogeneous and ephemeral while retaining some conceptualisation of order: “Whoever employs it does so with a certain tension, balancing, and tentativeness where contradictions between the ephemeral and the structural, and between the structural and the unstably heterogeneous create almost a nervous condition for analytic reason” (Marcus & Saka, 2006, p. 102). Therefore, the key to analysing a continuously shifting affective assemblage is the concept of the event or encounter, because it affords an understanding of stable form within the fluid whole (Massumi cited in Anderson & Harrison, 2012, p. 19).

Following flows (or lines) of movement through an assemblage and attuning to how these are marked by encounters between people and things and ideas and spaces brings

attention to how pedagogy is generated, distributed and dispersed in entangled material, discursive and affective processes. Understanding affective flows as having territorialising and deterritorialising capacities also brings a critical awareness of the (de)stabilising work pedagogic affects are capable of.

In assembling this research project, the artful and aesthetic expressed in an arts-based analysis has become entangled with the more machine-like application of a topology of lines, producing a degree of indeterminacy and openness in the research: “The [artful] indulges and even celebrates the intractably unpredictable and contingent in rapidly changing contemporary life; the [machinic] hopes for an understanding of the structural principles of order (and disorder) within the play of events and processes” (Marcus & Saka, 2006, p. 104). Assemblage thinking in research opens a space between the artful and the machinic for the becoming-researcher to work within. It also prompts the researcher to tune into the affective flows in the research assemblage (Fox & Alldred, 2017).

Multi-sited Case Study

According to Louis Cohen, Manion, and Morrison (2018), a case study can be understood as the in-depth study of a specific instance of a phenomenon located in a relatively ‘bounded system’. However, the concept of a bounded system that is common in case study literature (Stake, 1995; Yin, 2014) creates a contradiction for an affectively orientated study such as this one, which is concerned with flow, openness and becoming. Assemblage thinking affords a way to navigate this contradiction and offers a way to emphasise forces and relations as they emerge in situated practices without imposing an essentialised or fixed (bounded) notion of the subject or social context.

Duff (2016a, p. 17) further explains, “the assemblage may replace the ‘subject’ and ‘social context’ as a discrete unit of analysis”, enabling a refusal “to accept either subjects or contexts as ontological foundations for empirical inquiry” while creating an alternative to the ‘bounded case study’. Subjects and social contexts assemble, become “organised or ‘bundled together’ in unique arrangements of relations, forces, matter, affects, signs and spaces” (ibid). The analysis of these assemblages functions to explain *how* certain contexts (e.g., intense learning environments) and subjectivities (e.g., taekwondo coach or athlete or learner) hold together in practice, with assemblage acting as a “concept for thinking the relations between stability and transformation in the production of the social” (Anderson, Kearnes, McFarlane, & Swanston, as cited in Duff, 2016a, p. 17). This translates into this research design as an inquiry into *pedagogic affect* as it unfolds in specific open systems. These learning assemblages are organised around three specific events (an outdoor sculpture exhibit, the Australian National

Taekwondo Championships, and a zombie apocalypse survival course), becoming-learning-event-assemblages– which are constituted in the situated practices of people and things and ideas and spaces.

This research is designed as a multi-sited case study. It fuses case study methods with ethnographic methods, but due to the relatively small scale of the project limiting the time available for fieldwork, it cannot be defined as a traditional ethnography whereby a long term engagement in the field setting is arranged. The case study frames the multi-sited research project that “is designed around chains, paths, threads, conjunctions, or *juxtapositions of locations* in which the ethnographer [or PhD researcher] establishes some form of literal, physical presence” (emphasis added, Marcus, 1995, p. 105). The commonality between sites (event-assemblages) is that they each create the conditions for intense learning encounters to occur. In conventional qualitative inquiry terms, site selection was purposeful, as discussed further below. Following Dumez’s (2015) useful critique of established case study literature, I have organised my empirical research design around three questions: What is it that my case is a case of? What is the stuff my case is constituted by? And what does my case do?

What is my case a case of? My case is a case of pedagogic affect, in situated practices of learning in three intense environments. The case is empirically defined because pedagogic affect can be compared across multiple such event-assemblages. The case is also theoretically defined, beginning, as Dumez (2015) suggests, as an orientation towards what I was calling ‘affective pedagogy’ for a very long time, then eventually stabilising as pedagogic affect at the end of the research process.

What is the stuff my case is constituted by? My case is constituted by (and constitutive of) the affectivities that emerge in the heterogeneous practices of people, things, ideas and spaces during the program (event-assemblage) in three different environments that create the conditions for learning intensely. Intensity is significant because it is associated with what Deleuze and Guattari (2013) refer to as the molecular line, or what Barad (2012) refers to as indeterminacy, which is the “dynamic or intensive principle of change” (Braidotti, 2013a, p. 344). My case follows the unfolding narrative of an event or series of encounters within an event which produce pedagogic affects in a range of social and material practices. The event is a site-specific program such as a self-guided sculpture walk, a *Zombie Apocalypse Survival Course*, or the preparation for, and participation at, the Australian National Taekwondo Championships.

What does my case do? The particular focus of my case, as it unfolds in three localised contexts, is achieving knowledge of how pedagogic affects work *in situ*, and how

attending to these pedagogic affects might work to provide a better account of pedagogic practices that produce and are produced by micropolitical forces. It also enables an analysis of the mechanisms involved in mediating pedagogic affects, and their effects – for example, how the sound component of an artwork reaches out and captures its audience so that they may engage with its pedagogic offerings, or how a taekwondo coach ‘resets’ the dynamic of a training session by having the athletes change training partners so they may approach a fight scenario they keep “buggering up” differently.

Site selection. If, as Braidotti (2013a) claims, intensity is a principle of change, then environments that afford intense experiences of learning will also have the potential to provide transformative experiences of learning. It is therefore hoped that the empirical material generated ‘in’ intense environments will develop thinking about, with and through affect that may apply in more ordinary or everyday educational contexts.

In order to generate empirical material that could extend knowledge of pedagogic affect, the sites (and events) needed to be discernibly intense *and* engaged in pedagogic practice. The research therefore adopts an ‘intensity sampling’ approach. Patton (1990, p. 171) writes that “An intensity sample consists of information-rich cases that manifest the phenomenon of interest intensely (but not extremely)”. I chose sites that demonstrated an exaggerated (but not extreme) sense of pedagogic affect to maximise the possibility of producing new ways of thinking-doing pedagogic practice. A focus on event-assemblages that gave rise to intense pedagogic affects functioned, as Gherardi et al. (2018, p. 2) have it, to “invite the reader to imagine themselves in the situation and feel how several bodies (situated in different practices, present and absent, written and recorded) affect each other and are, in their turn affected”. That is, the intense learning environments that constitute this research event-assemblage have the capacity to convey some of their intensity, as it emerged in situated practice, to you the reader.

Patton notes that “Using the logic of intensity sampling, one seeks excellent or rich examples of the phenomenon of interest, but not unusual cases” (Patton, 1990, p. 171). While localised and specific examples, the event-assemblages selected for this research project are not unusual – there are numerous examples of outdoor sculpture events, museums and heritage sites, and taekwondo fight programs that train athletes for international competition. What is perhaps a little more unusual is the act of bringing together three very different types of sites, which enact three very different pedagogies, in three very different programs renowned as successful by their communities (for example, the taekwondo fight program at

the club selected for this study is widely regarded as successful by the wider taekwondo community).

Informed by Marcus's (1995) work on multi-sited ethnography, I wanted to juxtapose localised cases of pedagogic affect with each other across a range of settings, with the hope that if the 'findings' were consistent across these settings then they would have wider applicability.⁴¹ The site- and event-specific pedagogies (or pedagogic assemblages) are therefore multifarious, located in the arts, science and combat sport. Below is a table of the sites selected for the project, and the attributes of the focus program, event, location, organisation and possible human research participants. Note that there are always nonhuman participants too, which, while not listed in a specific column below, still enter the research assemblage.

Table 1. Attributes of selected sites

Site / Location	Organisation	Human participants	Features of program	Focus event
Outdoor sculpture event (hSOTG) Hauraki Gulf, NZ	City Council funded and commercially sponsored public event. The majority of visitors must travel from Auckland CBD by ferry to the site. Visitors pay small admission fee.	<p>Preeminent NZ Artists x4</p> <ul style="list-style-type: none"> • Tiffany Singh • Chris Booth • Martin Awa • Dane Mitchell <p>Child visitors x12 (referred to in thesis by pseudonyms)</p> <ul style="list-style-type: none"> • Attending the sculpture event with family and/or friends • 4x children lived on the island where the sculpture event was held • 8x children lived in the Auckland metropolitan area and were staying on the island with family or friends at the time of the sculpture event which was held during the school holidays. • Aged 9-16 years <p>Adult visitors x10 (referred to in thesis by pseudonyms)</p> <ul style="list-style-type: none"> • Attending the sculpture event with friends or as an organised group excursion • Living in the Auckland greater metropolitan area and doing a day-trip to the island for the sculpture event • Aged 18-70 years <p>Sculpture Event Volunteers x2 (referred to in thesis by pseudonyms)</p> <ul style="list-style-type: none"> • Permanent residents of the island • Aged 18-50 <p>Researcher</p>	<p>Art in the 'natural' environment</p> <p>Catalogue</p> <p>Cultural narratives</p> <p>Coastal landscape</p> <p>Materials (rocks, vines, found objects)</p> <p>Soundscape</p> <p>Volunteer installation crew</p> <p>Signage</p> <p>Artist talks</p>	Biannual large-scale environmental art exhibition

⁴¹ Here, I am mindful that I am invoking normative conventions of qualitative research. I see this research as both a platform to build on and one to go beyond. I take it that post-qualitative inquiry is not interested in replacing qualitative inquiry, but rather displacing it.

Human pathology museum Sydney	University-based, publicly funded organisation. Visitors pay small admission fee.	<p>Museum Director x1</p> <ul style="list-style-type: none"> Derek (Zoology background) <p>Child visitors x12 (referred to in thesis by pseudonyms)</p> <ul style="list-style-type: none"> Enrolled in the museum's Zombie Apocalypse Survival Course school holiday program or Brain Science program Living in the Sydney metropolitan area Aged 8-12 years <p>Parent/guardian visitors x3</p> <ul style="list-style-type: none"> Attending the museum at the same time as the children did the zombie program Not all parents/guardians with children in the research participated <p>Researcher</p>	Science of disease Epidemiology Pathology Horror fiction Exhibit (pathology specimens) Built environment Zombie apocalypse event	School holiday program/exhibit (<i>Zombie Apocalypse Survival Course and Brain Science</i>)
Taekwondo club Multi-site: training facilities at the club in Melbourne and the competition venue in Bendigo, Victoria	Privately owned. Athletes pay semester fees.	<p>Senior Sparring Coaches x3 (referred to by pseudonyms to protect the identity of the athletes)</p> <ul style="list-style-type: none"> Ang⁴² (National Coach, State Sporting Director, multiple National Champion and international medalist in senior male divisions) Ilya (Ex National Coach, national sporting body board member, multiple National Champion and international medalist in senior female divisions) Ben (Paralympic Coach, multiple National Champion and international medalist in senior male divisions) <p>Fight squad athletes x11 (referred to in thesis by pseudonyms)</p> <ul style="list-style-type: none"> High performing athletes competing in male and female national and international events Living in the Melbourne metropolitan area Aged 12-18 years <p>Researcher</p>	Combat sport Physical training Scheduling Coaches Fellow athletes Weight controlled Competition events Electronic scoring Built environment (club, competition venues) Equipment	Australian National Championships

Participants. Affects are produced in all practices, including those of the nonhumans. I hone in on the practices of a wide sample of participating people, things, discourse and spaces. I sampled widely and heterogeneously (Marcus, 1995). Some of my sampling was predetermined. For example, one of the art practitioners (Chris), his artwork and the audience were recruited long before the sculpture event, as was one of the taekwondo coaches. Others entered my participant 'sample' once the fieldwork was underway, sometimes opportunistically. Along the research journey there were stark reminders that I was not always in control of the research. For example, while I was well aware that the weather would be an

⁴² While Ang is a key actor in the fight assemblage and his influence is pervasive, due to his prior commitments at the Olympic Games he was not physically present at the Australian National Championships where the participants in this study were competing. He was unable to coach at the competition and therefore we did not schedule an interview. I did, however, observe several of his coaching sessions and have numerous discussions with him regarding the research.

important consideration at an outdoor sculpture event, there was no way I could have foreseen that a once in twenty year weather event that hit the island one week away from the opening of the exhibition would lead to my being involved in making urgent repairs to the artwork alongside artist Tiffany Singh.

Each event-assemblage is infused with a unique combination of pedagogic affects. I was particularly interested in the practices of individuals who were in a position to mediate the pedagogic affects that formed in each site (their power to intervene). Some practitioners (the sport coach, artist and museum director) make the activation and mediation of affects central to their everyday practice. They could be said to be experts in anticipating, sensing, responding to, and mediating the affective flow of a particular program or event. It should be noted that because of the public profiles of the artists, I was able to incorporate much more personalised detail regarding their practice than, for example, the taekwondo coaches who are referred to by pseudonyms. The practitioners I included in the fieldwork (see Table 1) were:

- taekwondo: 3x high-performance coaches
- human pathology museum: 1x museum director
- outdoor sculpture event: 4x artists.

I also spent much time observing and talking with participants in the event-assemblages. These ‘learners’ were sculpture-walkers, zombie-scientists and elite athletes. They were representative of the demographic of individuals who would ordinarily attend a given event-assemblage and were recruited primarily for that reason. They provided critical data on how different pedagogic affects influenced their experience of the event. In reality the number of learners involved was many more than listed (Table 1) because the figures in the table refer only to the number of individuals who participated in formal audio-recorded research conversations.

Method. Springgay (2015) argues that “Posthumanist research does not need new methods. What it needs are procedures that make felt the unknowability within the known.” (p. 86). To do this there is a need to conceptualise the choice of method in terms of the onto-epistemology of the project. This entails taking a critical stance towards the tools utilised for data generation and becoming reflexive about the assembling research project. It means being wary of over-privileging individual human accounts, especially in a study such as this that is anchored in ethnographic practices when “ethnography is predicated upon attention to the everyday, an intimate knowledge of face-to-face communities and groups” (Marcus, 1995, p. 99). Ethnographic methods tend to be human-centred – such as participant observation (privileging the researcher’s account of events), interviews (privileging the interviewees’

account of events), and research conversations (again privileging the human account). The question is then, how do we counter this? There are existing studies that act as guides for how existing methods may be adapted specifically for generating data suitable “for tracing the presence of affective forces” (Timm Knudsen & Stage, 2015, p. 9). Examples include Waterton and Watson’s (2015) heritage study using photography (somewhat paradoxically) as a way of being in the world rather than representing the world; Bissell’s (2012) auto-ethnographic study into the uncertain geographies of pain; Bohling’s (2015) use of field notes as an assemblage in an inquiry into the bodily and affective dimensions of drinking and dancing; and Stewart’s (2007) ethnography attending to ordinary affects of the everyday.

The other part to it is foregrounding what data can do, and consciously enabling datawork that follows “connections, associations, and putative relationships” (Marcus, 1995, p. 97). Fox and Alldred (2017) note that interview data produced by ‘informants’ should be understood “as evidence of how respondents are situated within assemblages” (p. 172), not as subjective representations of the world. The focus is not on the individual participant’s perspectives and feelings, but on how the data can be mapped according to affective flows (lines) in the research event-assemblage. The researcher asks, what can bodies do? What do flows (lines) produce? How do the affective flows capacitate or incapacitate the pedagogic work happening in in the research event? Is the audience or athlete learning to affect or be affected in some way? In particular, I pick up on what Timm Knudsen & Stage (2015) acknowledge as the importance of attaching research to bodies in specific intense contexts in order to generate ‘embodied data’ that effectively “grasps the affective qualities” of a research context (Timm Knudsen & Stage, 2015, p. 5). Embodied data are important because they bring attention to the sensory, textured, moving, fleshy natures of the phenomena involved in the inquiry (Pink, 2015).

There is consensus in methodological literature that a case study is empty of prescribed method (Simons, 2009; Stake, 1995; Yin, 2014). So I looked to ethnography to assemble my own. Ethnography is characterised by its propensity for generating a wide range of data from a wide range of sources, not predetermining fieldwork by implementing a fixed research protocol or imposing interpretive categories (Hammersley & Atkinson, 2007). The researcher participates in varying degrees depending on the site, generating a range of data as the opportunities arise. Significantly, ethnographic research takes place *in situ* and leads with participant observation. The style of participant observation I adopt attends to the humans but also consciously attunes to the contingent agencies of the nonhuman participants in the research. I try to find ways to ‘listen’ to their stories by performing what Pink (2015) refers to

as sensory ethnography. This involves attuning to sound and smell and touch and feelings that arise – and ultimately developing a research sensibility (or perhaps aesthetic?) that decentres the ocular by recording sound bites (instead of just photographs) and bodily responses to the research event, and attending to the more-than-human ‘goings-on’ that might otherwise be left on the periphery.

To do this I largely relied on ethnographic methods, particularly participant observation. To practise participant observation is to deliberately enter the research event-assemblage and knowingly *intraact* with all involved in the study, not just the humans. It results in co-producing the research with the researched. Participant observation calls upon the researcher to tune into what is happening, follow where others go, and do their bidding “whatever this might entail and wherever it might take you” (Ingold, 2017, p. 63). At the sculpture event, I volunteered on the installation crew; at the human pathology museum, I camped out in the main gallery space but also helped out with the *Brain Science* program and answered questions from zombie-scientists; at taekwondo, I ran the electronic scoring system during training and at competitions. I also travelled with the athletes to training and a competition.

There is risk and uncertainty in this. Ingold (2017, p. 63) describes it as being like “pushing the boat out into an as yet unformed world”, a world continually on the cusp of emergence. Being guided by “what is *on the way* to being given, one has to be prepared to wait ... [because] ... waiting upon things is precisely what it means to attend to them” (original emphasis, *ibid*). So, participant observation is about becoming sensitised to and attending to what is unfolding in a given event-assemblage. It involves feeling your way, remaining open to all the future possibilities while attending to the present moment. As part of my engagement in a practice of attentiveness I produced photographs, soundbites and sketches.

Accompanying the participant observation were other methods of generating data. These involved collating documentary data, e.g., catalogues, website material and social media posts, as well as audio-recording interviews of practitioners at each site (usually over a meal) and research discussions (usually on-site). Sometimes research participants would also offer me photographs they had produced to include in the study.

The methods employed were tailored to suit each site and were contingent on the site, event and research participants themselves. The methods were chosen on account of how useful they were for generating data that revealed what pedagogic affect looked and felt like, and the work that it did. I needed to be able to take away enough of the ‘right’ kind of data to be able to perform a cartography of each site and then map these cartographies onto each

other. I needed data that would reveal how these pedagogies were generated, circulated and dispersed ‘in’ intense, situated practices. Below is a table showing the sources of data for this research.

Table 2. Data Sources

Event-assemblage	Participant observation	Formal interviews and research conversations	Additional data
Outdoor sculpture event, January 2017	100+ hours over 4x weeks, including the installation period where I worked as a volunteer crew member and the actual exhibition period where I participated in a number of tours	2x Artists interviewed one-on-one for 60 min each. Audio-recorded, semi-structured interviews 22x Sculpture-walkers engaged in 1 of 7 audio-recorded research conversations that ran for 60 min each (on average) with an even split between child and adult participants	2x Additional artists engaged in informal research conversations. Public artist talks and produced documentary data including catalogue and website material Soundbites Media reports Photographs taken by participants and myself Artist talks Public programs
Human pathology museum school holiday programs, September 2016, January 2017	50+ hours over 2x weeks (split across two holiday periods), including many informal ‘chats’ with volunteers, parents, teaching interns, and program participants	1x Museum director interviewed one-on-one for 60 min. Audio-recorded, semi-structured interview 12x Children engaged in 1 of 5 audio-recorded research conversations that ran for 20 min each (on average)	Soundbites Photographs taken by participants and myself Documentary data Social media
Taekwondo club and competition venue in regional Victoria, July–August 2016	60+ hours over 8x weeks, including training sessions and participating in an overnight trip to a competition with the team	2x Coaches interviewed (Ilya and Ben) one-on-one for 60 min each. Audio-recorded, semi-structured interviews 11x Athletes engaged in 1 of 3 audio-recorded research conversations that ran for 60 min each (on average)	2x Additional coaches Soundbites Photographs Material artefacts (e.g., the red t-shirt) Social media posts Competition package Documentary data Sketches

Limitations of the approach. Case study research is criticised because it can devalue the research, risk unreliability, risk researcher bias making credibility questionable, and lead to poor generalisability because of its highly contextual nature. Interestingly these apparent weaknesses are what I see as the strengths of the case study. I actively incorporated these ‘weaknesses’ into a research design that accepts the entangled nature of the researcher and the

research, embraces the variability of conducting open-ended ethnographic style research across multiple sites, and deliberately sought out contextualised examples of pedagogy ‘in’ intense environments. The result was the generation of rich comparative data for complex analysis and multi-layered understandings without compromising the project’s capacity to engage in experimental approaches to data analysis.

As with multi-sited ethnography, a multi-sited case study grounded in ethnographic practices will not produce a ‘controlled comparison’ of the phenomenon ‘under investigation’. Rather it produces comparisons through the act of juxtaposing phenomena that have traditionally been kept separate (Marcus, 1995). This shifts the researcher’s role to that of cartographer, mapping the fractures, contours, intervals, and pathways that form in and between the sites – like a rhizome, hence the rhizo-cartographic methodology of this research. Marcus argues that multi-sited ethnography “requires considerably more nuancing and shading as the practice of translation connects the several sites that the research explores along unexpected and even dissonant fractures” (Marcus, 1995, p. 100). And it is this process of mapping in and between the sites that has the capacity to make new connections. To bring the sites of localised examples of a phenomenon (such as pedagogic affect) “into the same frame of study and to posit their relationships on the basis of first-hand ethnographic [styled] research in both is the important contribution of this kind of ethnography, regardless of the variability of the quality and accessibility of that research at different sites” (ibid).

What this research does not attempt to do is *extract* demographic data from human research participants in order to produce profiles of *them*. Instead, the onto-methodological approach adopted in this research actively avoids engaging in practices that work to impose pre-existing (and delimiting) categories such as gender, race, class, age, and sexuality onto data. I embed the concept of *intra*activity into my research practice, foregrounding the deed (not the doer). The purpose of doing fieldwork and doing data *intra*actively is to open up ethically and politically attuned understandings of the phenomena in question and credit the idea that these understandings are sourced via the human and the more than human. This multiplies the vantage points that provide opportunities to intervene (e.g., effect social change regarding issues like climate change).⁴³

Gaining access. Gaining access to the sites involved varying degrees of complexity, sometimes taking many months to formalise the arrangement. The sculpture event was the most difficult of the three sites in this project to gain access to. There were layers of

⁴³ This decision is made with the knowledge that doing so may leave a reader who is looking for a conventional account of the research wanting more of the human (a re-centring of the human subject?).

bureaucracy to contend with and moments when the project was on a knife-edge: the most crucial time was when I sought formal consent to conduct research as per my own university's human ethics committee requirements. While the organisation approved my research project, the governing body of the sculpture walk was not happy to sign an official consent form. I later found out they had been unsettled by the legal tone in my university consent forms at a time when new Occupational Health and Safety (OH&S) policy and practice were being introduced. Gaining trust, working through the bureaucracy, and subsequently being granted site access were contingent on building relationships with event personnel, artists, audiences, and local community. To do so I attended the artist talks, completed an induction, worked as a volunteer during the installation process, lived on the island in the local community, and maintained an active presence in the public programs. To follow is a storied account of gaining access to the sculpture event-assemblage, taken from my fieldnotes and offered here as an illustrative example of how the formal sign-off of consent forms is actually just the start of the process.



Figure 4. My legs are shaking!

Two volunteers atop scaffolding weaving vine trunks around a pole while installing Kinetic Fungi Tower at the 2017 Sculpture on the Gulf.

The vine trunks are loaded into a bath and transported up to the volunteers using a crane on the artist's truck.

My legs are shaking! 8:15 AM. Day one of fieldwork. I am required go to the offsite headquarters to go through health and safety briefing and receive a fluoro vest before going on-site. The main message is no smoking, drinking, or drugs on-site. I am told "It's all common sense, if you don't know something just ask". OH&S is the theme of the meeting and unbeknown to me would become the theme of the day. I then proceed to Chris Booth's installation site on the headland. Chris is already on-site directing several volunteers, dressed in blue overalls, gardening gloves, a broad-rimmed sun hat, and

shoes with separate toe compartments. Scaffolding is wrapped around his sculpture which is positioned on the highest point of the headland, like a beacon.

Two men are ‘weaving’ grape vine trunks onto a tower structure which is slowly growing up like a towering bird’s nest, forming a tapered cylinder around an old hard wood telegraph pole, sunk deep into the ground. The vine yard waste materials are piled around the tower in large clumps ready to become sculpture. Chris greets me enthusiastically and immediately launches into an explanation of why his artwork has changed from his original plan which involved an elaborate weighted-device made from a rock filled wire net set atop a tower of fungi ridden grape vines. He explains that the woody trunks of the vines have come together in a way that dictated a redesign of the structure. Chris is quite excited about working with the gnarled woody trunks in particular. They speak to him in a sense – becoming collaborators in the project. I join the volunteer installation team and get to work, gradually building trust with Chris and the other volunteers through shared labour and conversation. As the morning progresses the wind comes up and ominous looking clouds are starting to roll in across the gulf.

Carl, a retiree, is up the 5m high scaffolding continuing to weave the trunks while Chris operates the crane and I help fill the bathtub with another volunteer. Everyone is perceptibly more relaxed with my presence. Then, without warning, the OH&S inspectors arrive from the mainland. They are not happy with the scaffolding. It’s not certified, they say (although it was). You don’t have harnesses, they say (although they weren’t legally required at that height). There is the possibility somebody could fall between the scaffold and the sculpture, they say (although the gap is very small). Carl is still up the top of the scaffolding and doesn’t realise that they are actually ‘real’ OH&S inspectors and wobbles the scaff, yelling out “My legs are shaking!” and then shaking the scaff again for maximum effect. Of course, this is supposed to be a joke for the benefit of the ‘fake’ inspectors but it falls flat on the real ones. It was funny, but not funny.

We laugh about it after they leave but the humour is tinged with the difficult reality that the impending inspection report would likely jeopardise the completion of the project. Chris is spooked and he calls everybody to the ground to work it through as a group. The scaffolding must come down at the end of the day and the top of the sculpture won’t be finished. What can he do? One of the other volunteers suggests we get a cherry picker in. A few phone calls later and this has been arranged. Meanwhile the weather packs in, becoming wet and cold. Chris is thinking about calling it a day but the volunteers tell him it is forecast to clear so we stay on, and so it does. Against the odds we get it done, and in the process I have become an integral part of the crew.

This data-story shows the complicated terrain I navigated during the project’s fieldwork. It also reveals the extent to which the site was mutually constituted by complex ebbs and flows

of affectivity emergent in the practices of site management, artist, volunteers, cranes, trucks, bathtubs, local vineyards, vineyard waste, slowly materialising artwork, fungi, weather, safety equipment, practical jokes, recently introduced OH&S legislation, OH&S inspectors and the headland itself. It was, without a doubt, a physically and emotionally intense day that was complicated by the threat of the weather and an as yet untested OH&S legislation – enacted by newly recruited government officials who did not have hands-on experience of the site-practices they were making judgements about.

The enactment of the legislation was contrary to its purpose, unsettling emotions, destabilising established (safe) installation practices, and increasing risk-taking behaviour while creating a need for concealment of other practices in order to get the job done. It turned out that Chris had worked entirely within ‘the rules’ all along, but affects of the site inspection lingered in unforeseen ways. The animosity towards the officials produced by the OH&S site visit twisted into a comradery between site management, artist and volunteers. Chris was demonstrably spooked by the ordeal but buoyed by the renewed commitment of his volunteer-collaborators, who resolved to help him solve the problem of how to finish the tower under the scrutiny of the newly formed and unpredictable OH&S machine. Enduring relationships were built on that day, with affective flows of trust, collaboration, humour, and grit stabilising an artistic practice that was under threat. Another outcome was the acceptance by the Sculpture on the Gulf (hSOTG) site management and volunteer crew of my ongoing participation as researcher-volunteer. Something shifted; I was welcome, I was becoming-insider.

Ethical research practice. While this research adhered to a protocol approved by my host university’s human research ethics committee, the response-able (Barad, 2012) approach to research enacted extends well beyond the ethics committee mandate to encompass a Deleuzian notion of ‘becoming’ as an ethical principle. Becoming, or more specifically the process of becoming-other, is central to Deleuze’s neo-Spinozist ethics, which “rests on an active relational ontology that looks for the ways in which otherness prompts, mobilises and allows for flows of affirmation and forces which are not yet sustained by the current conditions” (Braidotti, 2013a, p. 342). This forms the crux of my researcher ethics, which for me involves consciously developing a research practice that is always in tune with and responsive to the affectivities and contingent agencies of the more-than-human world and takes seriously the entangled, co-constitutive relations that form between the researcher, the researched and the research. It means understanding that “when a human enters into a research scenario, he or she is never alone ... other ‘actors’ in the research collectives can

include humans; non-human living beings; objects such as chemicals, computers and tables; and experimental equipment” (Weaver & Snaza, 2017, p. 1058). And the researcher is engaged in an ongoing collaboration with these organic and inorganic actors, moving the location of the subject from ‘within the bounded self’ into life itself. This applies to “Not just human life, but all life” (Davies, 2010, p. 55), thus dissolving fixed boundaries and the stable identity of the researcher-self. As Barad (2012, p. 208) puts it, “The idea is to do collaborative research, to be in touch, in ways that enable response-ability”. So it is that “In the posthuman, life is no longer personal” (original emphasis, St Pierre, 2014b, p. 34).

For me, response-able research entails taking on the role of what Marcus (1995) describes as the circumstantial activist in the research setting. It means becoming an ‘ethnographer-activist’ which involves a preparedness to reassemble one’s researcher identity at each site in relation to the specificities of that site. For example, at the outdoor sculpture event I initially worked on-site as a volunteer member of the installation crew as I gained access and gained trust. At the human pathology museum, trust and access were not so much of an issue; rather, I needed to negotiate how my fieldwork would sync up best with the daily workings of the museum. To do this, I initially ‘camped out’ in the exhibition space and took time to attune myself to the dynamic ebbs and flows of intensity in the event-assemblage before doing any fieldwork at all. At the taekwondo site I had a prior connection with the club and also worked as a volunteer at State-level competitions, operating the electronic scoring systems. Here I already had trust, access and a deep understanding of how to sync my research activities with the daily running of the club, but I still had to negotiate a change in an existing relationship. In each of these scenarios, I was doing much more than ethnography. I was reassembling myself as researcher in relation to the shifting research assemblage, and I was acting back into the sites as different circumstances required it – fixing artworks after Cyclone Wilma⁴⁴ struck, helping at a *Brain Science* session at the museum, giving athletes a lift to or from training. These were all examples of circumstantial activism, akin to Horton and Kraftl’s (2009) notion of implicit activism, that have led to lasting connections with the research sites that have added a depth and richness to the entire research project that I hadn’t anticipated.

⁴⁴ Cyclone Wilma (Figure 5), a once in 20 years weather event, struck the headland with full force only days away from the opening of the sculpture event. While *Kinetic Fungi Tower* endured the storm without being harmed, other artworks suffered severe damage. *The Journey of a Million Miles* was one such artwork. I was called in to help with the repairs, working alongside the artist, Tiffany Singh, in a race to get the artwork installed for the event opening.

Doing Data

Data are presented in this thesis as three overlapping worlds that enact localised assemblages of an event-specific pedagogy in action. A central question when dealing with data analysis when thinking with Deleuze is not ‘what does the data mean?’ but ‘how does it work?’ and ‘what does it produce?’ (Lenz Taguchi, 2012, p. 268). Approaching the data in this way moves the analysis from an interpretive tradition into a relational mode of analysis (ibid). The



Figure 5. Data mapping – Cyclone Wilma, a once in twenty years weather event, enters the hSOTG assemblage.

diversity of the sites produces unique examples of pedagogic affects which, juxtaposed against each other, provide generative empirical material to think with. The last section of this map fragment explains how the data were worked cartographically, affectively and in conjunction with an analytic of lines, to produce a data-analysis-discussion in the space between convention and invention.

Cartographic datawork. Data were first worked up in three site-specific rhizocartographies (Map Fragment IV: Cartography of Sculpture on the Gulf; Map Fragment V: Cartography of a Human Pathology Museum; Map Fragment VI: Cartography of a Fight Club). I refer to this as cartographic datawork. Somerville (2013) tells us that “Maps guide our geographical explorations, near and far, and form the grounding of our thought” (p. 3). Cartographic datawork is about mapping the research assemblage in order to guide and

ground thought. Following Fox and Alldred's (2017) approach to analysis, I set about first identifying the pedagogic affects flowing through the event-assemblage, paying particular attention to how the affective relations worked in practice to produce, distribute and disperse pedagogy in the different intense learning environments. I did this by simultaneously (a) mapping pedagogic relations using NVivo software, then (b) mapping the affective flows through arts-based datawork (Figure 5, Figure 6), and (c) threading data-stories together to produce anchor points that I think of as 'sticky' data encounters. It was an iterative process, with each way of doing data producing particular ways of knowing the data.

Understanding NVivo as machinic (Fox & Alldred, 2017) prompts us to consider exactly what effects NVivo can produce, and perhaps counterintuitively permits using the software in a way that is ontologically consistent with the research project. Making the research rhizome with NVivo involved reconceptualising the software as a tool to map connections, disconnections and ruptures within and across data sets. NVivo functions aggregatively, and as such was most useful for understanding the range of relations and their specific entanglements, bringing into view relations of similarity in and between event-assemblages.

An arts-based research approach informed my cartographic work. It enabled me to sense hidden openings, reverberations and excesses in the data through a practice-based engagement with the data. Leavy (2015) explains how arts-based research defines knowledge as an ongoing process rather than a fixed state and therefore disrupts traditional research practices that position data as 'hard' and the knowledge produced from it as solid. It thus rubbed up against the more conventional qualitative NVivo coding, creating a space between convention and invention into which this project slipped. As researcher, I entered a crack line between knowing, doing and making (Pinar, as cited in Leavy, 2015), enabling me to experiment with 'doing data' in a number of ways without working towards a preconceived outcome. Putting arts-based practice into the cartographic work produced new understandings of how encounters and affective flows connect in and between research assemblages. It also grounded the analytical datawork in the material world while developing my understanding of the distribution and circulation of the pedagogies at hand, both temporally and spatially, or, as was the case for the sculpture walk, geographically. This prompted me to honour the multiplicity, complexity and performativity of data – coming to *know* the co-constitutive (discursive-material-affective) nature of data in practice. While few artefacts of this work are included in the final thesis, it was still a fundamental part of my analytical process.

Data-stories are also infused into the datawork. These bridge the coding and arts-based analysis to bring the final cartographies together. It is the storying of data encounters both *in situ* and then later in the studio or office that gives the research continuity and comprehensibility. Through storying data and artefacts of datawork, I was able to show how the affective flows materialise in individuated, embodied, local practices that pattern and are patterned by pedagogic relations in play. I was also able to convey a sense of the affectivities that characterised encounters, events and sites. Storying becomes an important part of sense-making and acts as a form of writing-based analysis. I wrote, as Somerville (2008, p. 218) suggests, from a place of the unknown “characterised by working the space in-between, the hairline fracture”, to create a minor text (Honan & Bright, 2016) that is itself a rhizome comprised of juxtaposing and connecting data, theory and literature.

It was a messy and time-consuming process, but in time a horizontal and organic rhizo-analysis gradually emerged. Each working method was entangled with the others but they occurred in different research spaces. The exception was an experimental symposium presentation, *The Gadfly: Doing Data Differently*, at a Learning Environment Symposium where I did a collaborative data performance with taekwondo data generated in this study (Healy & Morrison, 2017). The collaborative process developed my understanding of ‘sticky data’ as a performative research practice *and* as a useful method for attending to the affect in the ethnographic data. Unexpectedly, the subsequent act of translating the *Gadfly* performance into a book chapter (Healy & Morrison, in press) demonstrated to me how arts-based data engagements can work generatively with writing-based practices – if both are viewed as performative. The data-stories that help produce the cartographies of each event-assemblage (Sculpture on the Gulf, *Zombie Apocalypse Survival Course*, and fighting) thus become performances of the ethnographic (observational), interview and documentary data. They show how the pedagogies of each site are enacted in specific entanglements of matter-and-meaning, and characterised by affective flows that circulate, accumulate, stick (attach) and disperse.

Affect ‘in’ datawork. Hickey-Moody (2013a) argues that using affect as method offers “new mixtures of thought” and can “change research landscapes by shifting the registers on which particular issues or questions tend to be worked” (p. 85). The practice of using affect as method also connects with the use of arts-based methods because it provides aesthetically sensitive pathways for responding to data to create a research assemblage that carries its own affective capacities. “Foregrounding the work that affect does in the research assemblage moves us to deliberately seek out those moments of ‘disconcertion’ in the data (MacLure,

2013); it prompts us to engage with relations and entities that get ‘under the skin’ (MacLure, 2011, p. 999) and ‘stick’ to us. This ‘stickiness’ can be understood as an affective relation that functions variously to hold together, block, or bind entities by accumulating affective value (Ahmed, 2014). The notion of ‘sticky learning’ has recently been deployed in educational research due to its capacity to generate “a different way of attending to the production and



Figure 6. Data mapping – affective flows (lines) at the human pathology museum.

transfer of learning” (Mulcahy, 2016, p. 208). In this case, the notion of ‘sticky data’ becomes salient because it offers us a way of accounting for data that grabs us. MacLure (2013) rethinks data coding as an ‘inside’ and entangled *process*, “folded into movement and becoming”, creating “a very different kind of engagement with data” where “some things gradually grow, or glow, into greater significance than others, and become the preoccupations around which thought and writing cluster” (p. 175).

Topology of lines. The textual cartographies (Map Fragments IV, V and VI) produced through datawork show three highly contextualised examples of how the pedagogy of the selected intense learning environments unfold. They place a particular emphasis on the role of both fleeting and more enduring affects in the pedagogic practices of people, things, ideas and spaces. As such they express what pedagogic affects looked, felt and sounded like in a variety of scenarios, ranging from a radical collaboration with fungi to a hug between coach and

athlete. I then bring the three cartographies onto the same page (Map Fragments VIII and IX), using an analytic of lines to perform what might otherwise be understood as a cross-site analysis. I use the term ‘lines’ interchangeably with ‘flow’ to indicate the dynamic and, perhaps a little paradoxically, nonlinear nature of lines – contours, strokes, zigzags and trails all conjure a nonlinear sense of a line.

I mobilised a topology of lines (rigid, cracking and rupturing) to better account for the coexistences and multiplicities in datawork. Multiplicity is about “coexistences at a single moment. To make sense of multiplicity, we need to think and write in topological ways, discovering methods for laying out a space, for laying out spaces, and for defining paths to walk through these” (Law & Mol, 2002, p. 8). The topology of lines also provides the conceptual tools to better account for the pedagogic practices that produce and are produced by micropolitical forces. Developing the analytic of lines entailed “working with the notion of the rhizome (what it is and how it functions) in rhizo ways (processing with/as rhizome)” to invite “an understanding that there are no beginnings or endings, only middle spaces in-between” (Sellers, 2015, p. 8). In this in-between space, “things slip and slide” (ibid), like the conjunctive ‘and’.

This space can be thought of as a crack, “a silent, imperceptible crack, at the surface, a unique surface Event” (Deleuze, 1990, p. 159). The crack, otherwise known as the supple (molecular) line by Deleuze and his collaborators Parnet and Guattari (Deleuze & Guattari, 1983), becomes a line of great significance in the cross-case, rhizo-analysis when the cartographies of each site are mapped onto each other (see Map Fragment VIII: What Intense Pedagogic Affects Do and Map Fragment IX: Cracking Open Pedagogy). However, it does not (and cannot) supersede the other lines that are co-produced in relation to each other. These are the rigid (molar) lines and the lines of creative potential or death – often celebrated as the line of flight (Deleuze & Guattari, 1983). All the lines are relational and are continually involved in processes of territorialisation/deterritorialisation/reterritorialisation. A molar line may become molecular, molecular may become molar, and in certain instances either may undergo absolute deterritorialisation (rupture) and be carried away on a line of flight. We are reminded that the assemblage is constituted by lines (flows), and these lines “are the basic components of things and events. So, everything has its geography, its cartography” (Deleuze, 1990, p. 33).

There is no hierarchy to the lines. Every line has value and carries risk (promise-and-threat). While predominantly portrayed solely as a line of creative potential, under certain circumstances lines of flight may become lines of destruction or death. On the other hand,

while a molar line may act to enforce a questionable status quo, its stabilising effects also act to hold an assemblage (territory) together, working against processes of absolute deterritorialisation and the risk of destruction. Writing through the lines and back into the literature generates an understanding of how pedagogic affects work variously (and often simultaneously) to stabilise and destabilise the intended pedagogy, sometimes taking flight. An assemblage is a complexity of lines that can be mapped. Maps are complexities of lines. And lines have all sorts of different characteristics and functions. Following Fox and Alldred (2017), we are invited to look for the flows in the research assemblage. So the focus of the analysis is the question: What produces lines, and what do lines produce?

Table 3. Topology of lines used to anchor the cross-site rhizo-analysis

Molar Lines	Molecular Lines	Lines of Flight
Clear-cut, rigid segmentarity 'Give them what they want!' (Honan & Bright, 2016) Binary	Supple line of segmentarity Passes between things The tension between molar lines and lines of flight Proceeds through the cracking in a rhizome – 'crack lines' Fuzzy	Line of rupture that carries away the molecular line Irruption Proceeds through rupture or 'clean break'
Tree-like (arborescent), hierarchical systems, arborification of multiplicities	Rhizomic, horizontal systems, constitutes multiplicity	Chaotic
Molar lines can twist or free themselves becoming molecular	"Rhizome lines oscillate between tree lines that segment and even stratify them, and lines of flight or rupture that carry them away" (Deleuze & Guattari, 2013, p. 589)	Simultaneously a line of creative potential and a dangerous line of potential destruction 'line of death'
'Major text' (Honan & Bright, 2016), organised, regulatory, orthodox Works from the centre	'Minor text' (Honan & Bright, 2016), written for expression and creativity. Works from the edges Tentative	
Stabilising	Induces disequilibrium, capitalises on diverse material-discursive practices	
Aggregates Territorialises	Deterritorialises but does not reach absolute deterritorialisation	Absolute deterritorialisation
Break line	Crack line	Rupture line

Precedents for following (mapping) the lines are plentiful: Hetherington (1997); Albrecht-Crane and Daryl Slack (2003); Honan (2004, 2007); Masny (2014, 2016); Masny and Waterhouse (2011); Sellers (2005, 2013, 2015); Sellers and Honan (2007); Youdell and Armstrong (2011). While some rhizo-analyses focus on following one type of line within the

rhizome (often the line of flight), this arguably leaves out the significant work that the other lines do, as well as ignoring the substantive relationships between the lines – and the fact that the very existence of one line is dependent on the other lines. Moreover, the entangled and co-constitutive nature of the lines means it is not possible to separate them from each other completely. They must therefore be understood in relation to each other, and as a utility for understanding the relations between the different pedagogic affects. In the case at hand, I mobilised a language of lines to talk about the repetition and specificity in the affective flows.

In what follows I first present a cartography of each event-assemblage: Sculpture on the Gulf (Map Fragment IV), a zombie apocalypse survival course at a human pathology museum (Map Fragment V) and a fight program leading into the Australian National Taekwondo Championships (Map Fragment VI). These cartographies demonstrate what pedagogy in environments that create the conditions for learning intensely looked, felt, sounded, and sometimes even smelt like. It is not until after these three cartographies are presented that the language of lines gains traction, coming to the fore in Map Fragments IX and X, where I take up the analytical question ‘what do lines produce?’ That is, what does my language of lines produce with regards to my account of the affective flows in three event-assemblages at hand? In my inquiry into what the lines produce, I enter into the cracks and open a space between what pedagogy is and what pedagogy could be – in a minor key.

Map Fragment IV: Cartography of Sculpture on the Gulf

Topological coordinates: A3–A4, B3–B4

E ngā mana, e ngā reo, e ngā waka

Haere mai ki Hauraki,

He aute tē awhea.

*To all echelons, languages, and
vessels*

Welcome to Hauraki

*Where the leaves of the Mulberry
remain unruffled.⁴⁵*



Figure 7. Data mapping at hSOTG.

Context

Sculpture on the Gulf (hSOTG) is a large-scale, biannual, site-specific, outdoor sculpture event on Maitai headland, Waiheke Island in the Hauraki Gulf (Auckland region). More than a year of preparation culminates in a four-week exhibition that is attended by an estimated 50,000 people. Ngāti Paoa⁴⁶ extend a warm welcome to all who come to the event, writing in the catalogue that they are “proud to recognise *headland* Sculpture on the Gulf as a unique celebration of artistry and creativity within a distinctive backdrop of extraordinary splendour” (original emphasis, Exhibition Catalogue, p. 6)⁴⁷. The vision for hSOTG is to “make a unique contribution to the cultural life of Aotearoa [New Zealand] by creating opportunities for people to experience the power and beauty of contemporary sculpture” in a dramatic coastal landscape steeped in history (Exhibition Catalogue, p. 4). In the words of the hSOTG Chair,

⁴⁵ Ngāti Paoa Welcome, from the hSOTG Exhibition Catalogue, p. 7.

⁴⁶ Ngāti Paoa is a Māori iwi (tribe) of the Hauraki Gulf. Due respect is paid to Ngāti Paoa as Mana Whenua.

⁴⁷ The Exhibition Catalogue is listed in the references as Stanhope and Carmichael (2017) but referred to in the text here and in future instances as the ‘Exhibition Catalogue’ to better indicate the kind of data-role it plays in the research assemblage.

Margaret Malaghan, *Sculpture on the Gulf* “presents a reinvigorated conversation about sculpture and site” (Exhibition Catalogue, p. 5) and is comprised of artworks that respond to social, historical, material and environmental aspects of Waiheke Island “the jewel of the Hauraki Gulf” (Exhibition Catalogue, p. 4). Sculptures range from traditional large-scale sculptures that are pre-fabricated then installed on-site through to artworks produced through ‘socially engaged practices’.

hSOTG has evolved during its 16+ year history, growing from a small grass-roots initiative into a large-scale sculpture event involving a range of stakeholders, 100+ volunteers, and 33+ artists. The stakeholders include local community, local iwi,⁴⁸ local government, sponsors, patrons and associated businesses (such as the ferry company, local art gallery, and island vineyards). The event itself relies heavily on the goodwill of the Island community and countless volunteer hours, mainly provided by the ‘grey army’ – retirees from the mainland and the island. They come from a range of professional backgrounds such as engineering, surgical medicine, a variety of trades, and the arts. They bring their knowledge and skills to the challenging task of installing large-scale sculpture works onto a headland that is often at the mercy of what can be unpredictable coastal weather.

The natural environment. The weather itself is a force of its own volition. It acts as a constant reminder that while human bodies may be the primary instigators of hSOTG they are not altogether in control of the event and must continually negotiate relations with the natural environment. The coastal location of Waiheke Island leaves the headland exposed to wind, rain and hot sun, sometimes all on the same day. The entry to and exit from the sculpture event are marked by footwear cleaning stations to prevent the spread of Kauri dieback disease. Pōhutukawa trees participate aesthetically, structurally and conceptually in some installations, becoming an integral part of the sculptures and enhancing their appeal (Figure 8).

⁴⁸ ‘Iwi’ is a Māori term that “often refers to a large group of people descended from a common ancestor and associated with a distinct territory” (AUT, 2018).



Figure 8. Photograph depicting Pōhutukawa participating in Virginia King's installation, *Phantom Fleet*. They move in the wind with the branches and leaves.

The exhibition's audience was attuned to the significant role the natural environment played in the hSOTG event with many commenting on it. One adult audience-participant said:

There's no doubt about it. Sculpture in an outdoor environment where they have empathy with it is really important. You know, you see them in a museum and they're stuck between walls and they're not the same. And in fact if you put Virginia's [Phantom Fleet, Figure 8] in the museum it would be nothing.

The Pōhutukawa trees participated in the event in other ways too. The large root systems of the hardy trees secure the coastline from erosion while preserving coastal ecosystems. They also hold cultural significance for both Māori and Pākehā.⁴⁹ As a result, Pōhutukawa trees at the site are caught up in some entertaining care practices that are a consequence of local government resource consent (allowing hSOTG to take place on the headland) which stipulates that certain protective measures be taken to ensure the trees are not inadvertently

⁴⁹ Māori name for descendants of English-speaking Europeans living in Aotearoa/New Zealand. The term is a shortened form of pakepakehā which is reported to have been created by Māori in response to the loud and soft sounds in the spoken language of Captain Cook and his crew (AUT, 2018).

damaged. Their roots are thus routinely covered in a carpet of bark chips and branches that grow over the track. The hSOTG sculptures are wrapped in bright orange cloth to protect trees from moving human bodies, or perhaps moving human bodies and heads from trees – leading to much mirth from the hSOTG audience who wonder if this is part of the exhibition, taking photos (Figure 9) and humorously suggesting they should be put forward for the People’s Choice Award.



Figure 9. People’s Choice Award?

Photograph taken by an audience-participant depicting care practices involving orange protective wrap and bark chips covering root zone of Pōhutukawa on ‘the track’.

The artist-practitioners. The artist-practitioners aligned with the diverse field of socially engaged or social art practices became the focus of my research because they could provide an explicit account of the intended pedagogy embedded in their practice. Social art practice is best understood in terms of what it does rather than what it is, since it is constantly evolving and materialises differently in different practices, in different spaces, and in different times. Social art practice values process over product (corresponding more with an emergent ontology of becoming than a fixed ontology of being) and aims to (re)configure relations between people, things, spaces and ideas – often through evocative means. Even if they don’t use the term ‘pedagogy’, social practice artists are acutely aware that art is pedagogical. By

drawing audiences into acts of co-creation they provoke participating bodies to think and do things differently. The artists characteristically make it their business to activate individual, community, or societal level change and demonstrate a strong sense of the material, ethical, affective, and aesthetic. Caught up in this is a political, interventionist and participatory line of activism that is characterised by an entwined dynamic of advocacy-and-antagonism. For example, high-profile Chinese artist Ai Weiwei is famous for *antagonising* Chinese authorities through his socially engaged art practice in a bid to *advocate* for the human rights of those suffering at the hands of China's political regime. In instances such as this, antagonism and advocacy are not separate from each other; antagonism is enmeshed within acts of advocacy.

To gain a deep understanding of any instance of social art practice it is argued that an art critic (or in my case researcher) must totally immerse themselves in the nitty-gritty practices of the artwork as it unfolds (Bishop, 2012). I was able to closely follow the art practices of two highly regarded New Zealand sculptors, Chris Booth⁵⁰ and Tiffany Singh.⁵¹ To a lesser degree, the practice of Martin Awa Clarke Langdon enters the study, as does that of a fourth artist-practitioner who is not aligned with social art practice, Dane Mitchell. I note here that Dane's inclusion is somewhat of a methodological rupture. He is not attached to social art practice but the contagious affect of his hSOTG artwork can be felt in the data so he has been 'pulled' into the study nonetheless.

Participants in pedagogic practice. While I separate the research participants into categories (for example artist-practitioners and audience-participants) for the purpose of presenting the empirical research in this thesis, in practice the participants are deeply entangled and do not exist in isolation. And while I foreground the pedagogy of practitioners, this is done with implicit understanding that the natural environment, ancestral narratives, local iwi, the geography of the site, the land, water, weather, the audience, artists and artworks all participate in the practices that generate the various pedagogic affects of hSOTG. For example, the ancestral narratives of Ngāti Paoa infuse the land that is the site of Sculpture in the Gulf with past elders' remains beneath the foreshore, "buried and silent but not

⁵⁰ Over the course of his successful career Chris Booth has received numerous awards and accolades (<http://www.chrisbooth.co.nz/chris-booth-biography/>). I first encountered Chris vicariously through his artwork – a very prominent stone installation, *Gateway* (1986–1990) at the entrance to Albert Park (<http://www.chrisbooth.co.nz/works/gateway-1986-1990/>) – as a young person, growing up in Auckland, New Zealand. Chris is a senior New Zealand artist who is well known around the world for his large environmental sculptures underpinned by a holism that incorporates land, nature, spirit of place, and community. He is particularly renowned for his creative partnerships with first peoples, having been commissioned by several international Indigenous communities to produce site-specific work.

⁵¹ Tiffany Singh is an established mid-career artist. She represented NZ at the Sydney Biennale in 2012 and has been awarded multiple national and international artist residencies. In 2017 she was awarded a New Zealand Arts Foundation New Generation Award (<https://tiffanysingh.com>).

forgotten” (Ngāti Paoa, Exhibition Catalogue, p. 7). The artwork of Martin Awa Clarke Langdon is a materialisation of his own affective response to a collision of geography, culture and ancestral narrative that was ignited while on a previous unrelated visit to the island.

Seeping into (and out of) the art practices of Tiffany, Chris, Martin and Dane were weather events, geography, volunteers, material challenges, imaginations, other artists, collaborators (e.g., fungi for Chris and the Auckland Resettled Community Coalition for Tiffany), family commitments, friends, OH&S requirements, cultural histories, narratives, site managers, timelines, deadlines, media, publicity, Gala night, and artist talks. During the data generation, I walked the track (repeatedly), finding out how visitors experience the event as a whole and respond to individual sculptures. While observing the site I talked to countless visitors to it in addition to recording interviews and research conversations with participants. I accompanied tours of the exhibition ‘on the track’ and led groups around the site myself. I made sound bites of the site, took photos and received photos that others had taken.

Assembling a pedagogy of Sculpture on the Gulf. The pedagogy of Sculpture on the Gulf can be described as a distributed pedagogy with the pedagogic assemblage being constituted by dynamic tangles of matter, bodies, ideas and spaces. To paraphrase Slaby et al. (2019, p. 7), these tangles may be understood as nested ‘working assemblages’ which slot into the overall event-assemblage in specific ways. During the hSOTG event, each of the artworks generated distinct ‘swarms’ of affectivities, which in turn had the potential to create different impressions on the audience-bodies. The impressions remain as these bodies traverse the event-assemblage, moving from one encounter to the next – or one nested ‘working assemblage’ to the next. The pedagogy of hSOTG reassembled in this map fragment is organised around the four artworks that became a focus of this study: *The Journey of a Million Miles*, *Kinetic Fungi Tower*, *Untitled – Whakanoa*, and *Buried Gemstone*. I now go on to map these swarms of pedagogic affects as nested in the larger Sculpture on the Gulf event.

The Journey of a Million Miles Begins with One Step – Tiffany Singh

The first glimpse of *The Journey of a Million Miles Begins with One Step – the Stories of Beyond Refuge 2016-17* (hereafter *The Journey of a Million Miles*) is caught from afar whilst walking around the track on the headland. However, it is some time before one can physically reach it, by walking through a shaded section of the track marked by a cacophony of chorus cicadas (kihikihi-wawā), then up a hillside of dense bush with dirt paths and rudimentary steps, before finally stepping into the open grassy headland – dotted with sculptures. Look over your right shoulder and there is Chris Booth’s *Kinetic Fungi Tower* high on the hill. Invisible, yet present in the imaginations of the audience and somewhere in the earth (but where?), is Dane Mitchell’s *Buried Gemstone*. Look left to the ocean and there is Tiffany Singh’s *The Journey of a Million Miles*, installed on what was recently knee-deep couch grass (Figure 10).



Figure 10. *The Journey of a Million Miles Begins with One Step – Stories of Beyond Refuge 2016-17* at sunset on freshly mown couch grass.

Tiffany’s arts practice is underpinned by Eastern philosophy and spirituality. It most often materialises as participatory installations that aim to support individual and community wellbeing through social cohesion and sustainable community outreach. At the heart of this practice is what she refers to as a “collaborative methodology” that is both immersive and holistic. Her collaborators engage with, alter, and co-create artworks that address a social

issue in the local community. Her arts practice deliberately cuts across the conventional divisions between artist and audience to become a tool for educating, raising awareness, and creating conditions for social change.

This collaborative approach to arts practice created the conditions for *The Journey of a Million Miles* (Figure 10) to develop in partnership with the Auckland Resettled Community Coalition (ARCC). A purpose was to provoke thought by sharing powerful personal stories of seeking asylum and becoming New Zealanders in an arts context.⁵² The hope was to “redefine understanding of what it means to be part of a community that comprises the settled and resettled” (Exhibition Catalogue, p. 38). The process of ‘redefinition’, or perhaps more accurately re-configuration of relations, involved all who co-created the artwork – from the people who offered their stories of resettlement, to media personalities who performed them, to the volunteers who applied resin to thousands of origami boats on dinghy-sound-shells, to the audience-participants, to the collaborating sound artist, to Tiffany Singh herself.



Figure 11. A wake of origami washi boats with “little red things in them”.

⁵² These stories had been published in *Beyond Refuge: Stories of Resettlement in Auckland* (ARCC, 2016).

Material practices: learning to be affected. The body of the artwork was comprised of four overturned dinghies, balanced on upright poles, offering shelter from the sometimes-challenging coastal conditions. Woven flax mats and cushions tucked under the boats invite those in need of a sheltered place to sit, rest and refuel whilst taking in the view of Auckland city across the body of water below. The undersides of the boats are dressed in saris and emergency blankets, sewn together to form a seductive array of colour. The hulls are adorned by hundreds of tiny golden washi origami boats that have weathered to resemble barnacles. They have been painstakingly stuck down one-by-one with marine grade resin by Tiffany and her team of volunteers. Not all the little origami boats made it onto the hull, though; there is simply not enough room. So there is a wake of them trailing behind each boat in swirls, being gobbled up by the couch grass as it reclaims the freshly mown ground (Figure 10).

The plaque announcing the artwork and artist demarcates the ‘start’ of the artwork, which is physically bounded by the threshold of un/mown grass. Yet this boundary is not fixed; the grass vigorously starts to reclaim ground from the beginning. The boats-vessels-waka and accompanying notion of journeying (or maybe wayfaring?) extend the installation onto the water below and into the distant city – promising a better life for those seeking asylum in New Zealand. However, we are reminded this promise (or hope?) is contingent on successful processing of applications for refugee status and carries with it an immediate threat of immigration detention and deportation.

Boats on boats, boats on sticks, woven mats, cushions, brightly coloured saris, silver emergency blankets, headland, couch grass, solar panels, sun-and-shade assemble together to form an expertly crafted, aesthetically compelling encounter with audience-bodies. But even though these data point to the pedagogic and affective performance of these entities, they are *not* the artwork – or at least not the important bit, the artist tells me. Rather, the installation is primarily a soundwork, grounded in collaborative practices that generate (and continue to regenerate) the work. The boats also act as sound-shells for hidden speakers, powered by solar panels, on which four different audio tracks are playing at any given time. The tracks feature refugee narratives from a resettlement story book (ARCC, 2016) and are intended “to be heard in a celebration of tolerance and diversity” (Exhibition Catalogue, p. 38). The rich voices of the media personalities co-opted to perform the narratives are punctuated by dramatic instrumental tones, mixed to accentuate the mood. Steven Hue, the collaborating sound artist who created the sound tracks, writes on his website: “The audio component functioned as a device to challenge biases and shift perceptions of the issues surrounding resettlement in New

Zealand, by presenting real stories in familiar accents, paired with an emotive and powerful musical score” (<https://stevenhue.bandcamp.com/releases>). Steven’s soundwork fits the brief.

The audio reaches out from speakers hidden under the hull of each boat, catching the attention of the sculpture-walkers as they pass in close enough proximity, reeling them in and anchoring them near or under a boat to listen to the stories of New Zealanders (now) expertly mixed with haunting sound effects that resonate with what at times are harrowing narratives. The following data snippets are illustrative of how the soundscape worked to ‘catch’ an audience and hold them for long enough to engage with the pedagogy of the installation. They are taken from a research conversation recorded with three brothers (Noah 6,⁵³ Antony 13, and Dylan 16) and their mother (Kerrie) after they had done the sculpture walk. Kerrie is especially keen to tell me about how Noah had been captivated by *The Journey of a Million Miles*, and how the family spent some time with the artwork as a result – despite some initial reluctance from his older brothers.

Noah’s mother: “He [Noah] wanted to stop – they [his older brothers] were kind of like, oh yeah, and wanted to move on and he was like ‘Hey guys there’s people talking!’ So he wanted to listen. He laid underneath the first boat at Tiffany Singh’s – didn’t you? [turning to Noah]”

Despite his initial reluctance to engage with the installation, Noah’s older brother, Antony, spent some time at the boats simply because, he said “I just liked laying there”, noting “They were pretty boring.” [Which I came to understand, as the interview progressed, was a term that was used quite liberally and had a more diffuse meaning than ‘boring’ in the pure sense]. Later, Antony repeated “I just felt like laying down under the boat. I listened to it though it wasn’t exactly my thing.”

Noah’s other older brother, Dylan, “liked them because they told a story of how some of the refugees came over and how hard life could be. And also, I liked the boats because they were symbolic as ways of transportation. Then located at a place where you required a boat to get to or from [and] yeah, because they have a view of the sea as well. They were pretty tough stories. And one of the first boats, that guy ... we stayed there because that’s the one that [little brother] Noah laid under, he said about all the things that he did you know that I went to ... Yeah, how he got different certificates, different

⁵³ Noah’s contribution to the research conversation is not included as he was under eight years old and therefore fell outside of the range of my ‘target audience’. While he could not officially participate in the research, he did accompany his mother and brothers who did. He became an inextricable part of their experience of the sculpture event and thus entered the research event-assemblage.

levels and then got medals as well. And how hard it is to do well – even just to do average it's hard work”.

This is the first sculpture on the walk that incorporates sound. The introduction of this new type of materiality captures the audiences' attention, operating as a sonic invitation – “Hey guys, there's people talking!” – pulling them in and holding them in range either under or within earshot of the boats, increasing capacity to stand still in time and space, enabling further contemplation of the aesthetic aspects of the work. It often would only take one person in a group to be attracted to the work and the rest of the party would follow – even if, as Antony noted, “it wasn't exactly my thing”. Then, while they were lying under the boats, the stories themselves had an opportunity to form new learning assemblages with the audience-participants. In Dylan's case, stories of resettlement entangled with the symbolism of the boats “as ways of transportation”, the island location, and “a view of the sea” to develop an understanding of “how hard it is [for resettled New Zealanders] to do well – even just to do average it's hard work”.

The talking boat-bodies are haunted by refugee-bodies, with worlds being performed into reality on a sound loop – repeating again and again, becoming a refrain in a Deleuzian sense, with the soundscape as “a wall of sound” (Deleuze & Guattari, 2013, p. 362) which marks a territory while producing a stabilising space, a shelter for “the germinal forces of a task to fulfil or a deed to do” (ibid). This stable space, this shelter of boats, made time (or slowed time?) so bodies could take time to withdraw from competing forces of the larger event-assemblage and become immersed in *this* encounter in *this* time with *this* artwork in *this* swarm of intensities and provide a place to just lie down for a while and listen (contemplate?). The wall of sound blocked out distractions produced by other people and things and ideas creating the possibility for an individual to immerse themselves in the material offerings of the artwork, activating a desire (or capacity) to listen. Describing her experience, Maria (adult audience-participant) comments:

You just end up getting a bit mesmerised and quite sad and just wanting to sort of like stay and listen to it all. And then there were the intricacies of the tiny little boats and the boats that are on sticks around it, and all those like colourful saris and things that are all woven through it.

Audience-bodies who availed themselves of a place to lie down and become mesmerised with/in the artwork, did so through the activation of a range of senses – legs brushing against the weave of the mats, sea air infiltrating the nostrils, eyes glimpsing a departing ferry, hairs on arms standing on end, narratives shifting hearts. Engaging the bodily

senses to perceive becomes a body-event that leads to becoming in-formed, which, Manning (2009) tells us, “is not to hold on to information. In-forming is to shift-in-form, to create with information” (p. 212). Bodies become a primary site of affective re-negotiations of meaning and mattering. As Manning puts it, “bodies, senses, and worlds recombine to create new events” (ibid). As bodily affectivities registered and then became integrated with the in-forming narratives, audiences were afforded the possibility to think resettlement differently. Entering into a composition with the artwork, audiences (re)composed themselves (or shifted-in-form) in response to experiencing the experiences of resettled New Zealanders. Could this then incrementally increase the power of the Auckland Resettled Community to move beyond the status of refugees (also shift-in-form) to become a resettled New Zealanders? This is the line of hope the artwork aims to activate but it does not always do so.

Multiple materialities. With no sound, artwork practised on the audience-bodies differently and audience-bodies practised on the artwork differently, producing different pedagogic affects. It gained its capacity through relations between the remaining components of the installation: signage, natural environment, geography, the catalogue or app, and the audience themselves. But without the people talking in the boats, the installation had less affective range, diminished capacity to act on audience-bodies from afar. Once ‘in range’, audience-bodies were less compelled to pause for long periods, although many still availed themselves of the boat-shelters. The onus of the interpretive work required to understand the installation shifted onto the audience, their prior knowledge of the core issues of the resettled community, and their capacity to ‘read’ these issues with/in an embodied encounter with the composition of the boats (and boats on boats and boats on sticks), colourful saris and emergency blankets woven together, flax mats, cushions, geographical location, body of water, place of refuge, feelings of dis/comfort, the catalogue, title sign, smell of cut grass, and all the painstaking work that went into actualising the artwork. This in turn diluted the pedagogy attached to the sculpture, or perhaps more its ‘teachability’, making this pedagogy much less of a surety. This is not to say the silent artwork is not pedagogic; rather, it is noted that the audience-participants’ encounters with it were much less intense and the bodily processes of meaning-making that unfolded in these encounters much less predictable. However, those who spent time with the work-without-sound still found it an evocative experience. Ruby, a year 11 student, said with enthusiasm:

I thought it symbolised like turning your life upside down because the boats were all like that [overturned] and it was really cool. And they had all the different bits of fabric which was really awesome. They symbolised different cultures all being woven in together which I thought was really, really cool.

In our interview, Tiffany tells me that she works hard to reach her audience, operating on “a lot of different levels” in the hope that at least one will connect, resonate. This wasn’t lost on the young people who engaged with *The Journey of a Million Miles*. Dan (12) put it simply: “I liked that even though it was a sound sculpture, that wasn’t all of it. It had sound AND sculpture”. His sister Kate (14) added: “And also, she had the stories going as well as somewhere to sit comfortably to listen. She thought of everything. She thought of the person looking and absorbing”.



Figure 12. Taking refuge
 Left: sculpture-walkers taking a break, listening to the stories, and taking in the view across the gulf.
 Right: sun-boat-shade-refuge-refugee assemblage.

Taking refuge, taking care. Different groups of people attended to the artwork-cum-shelter in different ways over the course of the event. Adults were somewhat stand-offish at times, holding the sculpture at bay, until children showed them how to fully interact (or *intraact*) with it by running down the hill and swooping under the boats to lie down on grass mats – sometimes clutching their harakeke (flax) flags made while participating in another artwork. These child-bodies produced a rupture to disciplinary patterns of relating to Art established in art museum practices where Art is not to be touched. In response, (un)disciplined adult-bodies would either move into closer proximity to the boats or fully inhabit them, creating an intimate boat-soundscape-space (a cone of un/silence?).

Clustered under the dinghy-shelters, audience-bodies adjust cushions, unload bags, make themselves comfortable – moving in – and taking time out to just sit and perhaps check messages on phones. The audience-bodies enact stillness and silence, making space (and time)

for often silenced refugee-bodies to move into the noise-practice of the boat-bodies, producing a space of multiplicity that is at once still and quiet yet also noisy and moving. In the in-between space of dis/quiet, pedagogy takes place (or makes a move?), cracking (fissuring) the audience sense of what is and isn't. This is delicate pedagogic work. For the pedagogic affects to leave an impression, for the audience-bodies to remain open to being affected by the soundscape, the discomforting affects produced by the audio were simultaneously eased by the carework of the artwork – producing a crack of dis/comfort, a line of probability and danger. This carework involved variously making shade for sweaty bodies, protecting grass-sensitive bodies, sheltering wind-swept bodies, and making time-space for tired bodies to just lie there for a while, contemplating the intricacies of the artwork. In the dis/quiet and dis/comfort, the listening-bodies were taken care of by practices of artwork and artist “who thought of everything” while they did the challenging work of shifting in-form (Manning, 2009), re-composing their thoughts and themselves in relation to the in-form information they entered into. For example, I noticed one child (Susannah, aged 8) who spent a remarkable amount of time inhabiting a boat, staying put for a long while after her same-aged friends had moved on. When I asked her about it over pizza back at The Pavilion she told me she had lingered because:

They had little places to rest underneath them so you could sit down on a cushion and just listen to what they were saying and also they decorated them nicely and covered the boat with little paper boat things and then at the end they had paper boats as little trails, a trail from where the boat leaves [and] there was one ... a girl, she's a teenager by now I think, she was talking about, because she was from a different country and she was learning English and it made lots of challenges for her. [She was from] Ethiopia, yes because it wasn't a very safe place for her to live there anymore, was it? And then she'd come to New Zealand and taken refuge here.

Not dissimilar to the quiet spaces of Burke's (2016) postwar British schools which afforded children the opportunity to withdraw in an affirmative way, the boats generated the kind of intensities that activated in Susannah a desire to linger and engage in an *affirmative* act of refuge (retreat) – despite the emotional challenges that listening to the stories presented. She invested herself in the intense ‘compound of forces’ produced by the artwork, composing novel relations with other bodies such as refugee-bodies, boat-bodies, or a body of water, and thus “provoking a kind of *intensive learning*” (emphasis added, Deleuze cited by Duff, 2016b, p. 179). In taking refuge, Susannah might be understood to have engaged in an affirmative practice of becoming-refugee, or in a Deleuzian terminology, becoming minor. Or to have

entered a potentially transformative process of deterritorialisation (Braidotti, 2013a) which might be likened to encountering pedagogy in the crack.

Sticking points. Yet such an encounter with *The Journey of a Million Miles* was for some an *overly uncomfortable* bodily experience – it created sticking points. The challenging and at times traumatic processes of resettlement are communicated in deeply personal accounts which are confronting for some bodies. Yet the intention of the artwork was not to be confronting. As the ARCC write, “[m]ost importantly, *it is our hope* that in the midst of stories of struggle, triumph and hiccups, *the message of hope* in finding one’s place in a new land shines through” (emphasis added. Excerpt about the narratives from the *Resettlement Story Book*, <https://arcc.org.nz/resettlement-story-book/>). The ARCC hopes that the message of hope will shine through. Hope for resettled-bodies, hope for the resettled community-body, hope that audience-bodies will attune to the message of hope, and ultimately hope for change in how the settled community thinks and acts in relation to the resettled community so that there may be increased capacity for practices of cohesion, appreciation, co-contribution, tolerance and sharing in all communities. But hopefulness got stuck somewhere along the way. In particular, several adult-participants involved in this study were resistant to hope and also resistant to the artworks’ practices of care (did fear take over?). They found it difficult to move into composition with the body of the work, often choosing to remain detached and separate from the boat-bodies, resisting the storying that was being done and the invitations to act that were on offer. They did not make space for asylum-seeker-bodies to fully materialise in proximity to their own bodies and did not allow pedagogy to take place. Instead, adult-bodies had a propensity to hold on to their ‘entry narratives’ (Smith, 2017) when encountering the artwork, remaining within established patterns of relating to refugees (not resettled New Zealanders).

This activated a line of ambivalence that cut through a research conversation with one particular group of educated Pākehā-New Zealander adult-participants.⁵⁴ It became evident from their talk that as long as the sculptures acted as separate, external, or ‘out there’ objects that individuals and/or groups could “plug into” with their own existing narratives, the adult audience-participant-bodies remained in a comfortable space, free from the cracks produced

⁵⁴ This group is comprised of an informal collective of retired professionals who meet once a month to engage in a cultural and/or social activity. Approximately 8x members of the collective travelled via ferry from Auckland to attend the sculpture event together on the island. I say ‘approximately’ because numbers fluctuated as some individuals arrived late and others left early. While I accompanied the larger group for the duration of their time at the sculpture event, only 4x members (including Helen) were involved in this recorded research conversation which took place on the ferry as they travelled home after the event.

in the dis/quiet. But this comfort dispersed when the artwork became antagonistic, acting out, pushing back, disrupting familiar patterns of relating to art:

I liked them but I didn't like, I don't mean this in a negative way but I didn't like the commentary. I thought it was superfluous. I thought we could've actually, formed our own meanings and significances out of the dinghy and the [inaudible] especially the tiny little boats and the idea of all those people washed up on the shore and this [relates to] photos [in the news] of the Mediterranean with the little boy lying [dead] on the beach. All those things. I think we know the significance of things that's around without having to have another level of explanation and I think that sometimes that's really important with artwork that you want to leave some personal space to bring your own meaning into it and that's why I felt, and maybe this is a very personal view but I know enough about refugees not to have to hear their voices as well. I've already got them in my head.

This older audience-participant (Helen) did not want resettled New Zealanders climbing into her head with stories of “struggles, triumphs and hiccups”. She, and other audience-participants like her, enacted resistance; shutting off the all-important “message of hope” intended to be carried by the stories. These audience-participants expressed the desire to silence the talking boat-bodies (stopping the stories of asylum seekers from mattering and affecting their own bodyminds?) to produce an (im)personal space to make their own meanings, tell their own stories, and disengage bodyminds from the dis/quieting affects of the audio. Could it be that Helen and others like her reached a stuck place with the artwork? Perhaps enacting a refusal to become caught up in *The Journey of a Million Miles*’ performance of (re)settlement or to accept the complicity associated with becoming “inheritors of privilege” (Smith, 2017, p. 78)? Arguably, by sticking to an ‘entry narrative’ (Smith, 2017) and expressing the desire to displace the challenging narratives of the resettled community with a preferred narrative, a ‘privileged immigration heritage’ was performed – reproducing existing relations of privilege-and-marginalisation. The possibility of a change of heart and mind is stuck in such acts of embodied refusal. The pedagogy cannot make its move.

This stickiness did not go unnoticed by others engaged in the same group conversation with Helen. They countered Helen’s resistance to the audio component of the artwork, saying “I think the recordings though told us what they felt about New Zealand. You can't pick that up from an artwork”, and “It seemed to me that the theme of what most those people talked about (and obviously, I didn't listen to all of them) was making a contribution themselves when they came here. That was a big thing about the conclusion I got from the recordings”. Another added, “Yeah. I listened to two ones almost fully and both of them were very clear that New Zealand is a very racist country”. So while there was resistance to the force of the

bodily encounter with *The Journey of a Million Miles*, there was also a counter-resistance to the resisting bodies. This was accompanied by evidence of a growing realisation amongst the members of the group that resettled New Zealanders experienced racism and discrimination in their everyday lives and small changes in thinking and language use could make a difference.

The artwork's pedagogy is political, and politics produce intense micropolitical affects. A line of threat is activated by publicly exposing established patterns of thinking and doing as having racist implications that play out in the everyday lives of settled and resettled New Zealanders. It also emphasises the trauma-and-triumph that is the heritage of the resettled community. However, encountering the trauma was highly problematic for a few individuals, perhaps because it strengthened an existing relation to refugee-trauma while drowning the possibility of relating to the triumph accompanying the trauma. Evette,⁵⁵ another older audience-participant attending the sculpture event a week or so later, had extensive prior involvement with trauma affected individuals from refugee backgrounds through her work as a health professional. While she attempted to engage with the artwork, its intensity was so great her bodily capacity to stop and listen was blocked. She had to leave. It was not that she wanted to stop the stories from mattering; nor was it that she didn't want 'them' in her head. It was that her capacity to relate to the experiences of forced immigration was so attuned that she needed to insulate herself from the force of the trauma unfolding in the soundscapes. In a research conversation Evette describes her experience, saying:

I didn't like it

And the little red things in them [voice ascends up]

And they were all in the water!

And there wasn't enough room for them all

All those little boats on the hull of the boat.

I could've enjoyed the boat and got it quietly whereas I felt it was being like – forced to watch a documentary.

I couldn't bear it.

⁵⁵ Evette is a senior health professional living and working in the Auckland region. She travelled alone to the Sculpture event, meeting a friend there. Our conversation took place over lunch afterwards.

It made me want to cry.

But I couldn't stay.

I would've liked it without the words. I would've liked to have been able to read the words so I could of chosen to read the words.

We had to go.

Evette's experience of the artwork took her to a stuck place, but a different stuck place than Helen's. Neither wanted to hear the stories but their resistance to hearing them was activated by different knowings and different experiences of doing that each individual brought with them into the encounter.

It becomes apparent that the persistence of an 'entry narrative' (Smith, 2017) is complex and contingent. Evette's and Helen's entry narratives may have remained intact, but this is not a result of wilful determination. The established discourses of forced immigration were too entrenched (or deeply inscribed?) to disrupt. However, this was not because of their individual failures, or the artwork's failure for that matter. After-all, no body acts alone (Mol, 2008) and our decisions are never ours alone to make (M. Lloyd, 2015, p. 175). In their separate encounters, *The Journey of A Million Miles* affected Evette and Helen negatively, and they had their capacity to stick with the artwork reduced. Their emotional, bodily responses (after-effects of affect) resulted in them having to go ("I had to leave"), and they physically moved their bodyminds out of the artwork's proximity, away from its touch. It moved them, but not as intended. Perhaps these particular sculpture-walkers required a differentiation in the pedagogy to move them differently (towards the affirmative), to enable them to stay with the artwork and hear the message of hope?

When I later recount these sticky responses to Tiffany, she responded, "I'm alright with that". Ultimately, the audience response to the artistic product is not what drives Tiffany's practice, and she is accepting of the full range of experiences that *The Journey of a Million Miles* provokes. Instead, Tiffany tells me, what is important is bringing together people, skills, materials and technologies within a creative arts context to (re)pattern relations within and between individual and community bodies. In the process, the potential for something amazing to happen is made possible – and something does – "THAT soundscape" happens. Tiffany says it's about "enabling things to happen by trying to put things together in a new way [allowing for serendipitous connections]. All of the things exist, it's just those neurons aren't firing together [laughing]".

Collaborative practices. *The Journey of a Million Miles* was an ambitious project that would have been near impossible to realise without a skilled collaborative practice in place. Tiffany speaks to what she calls her “collaborative methodology”, saying,

Yeah, building bridges in-between different people and things, where everyone brings their knowledge to the table, it's a really incredible table. And at that point everyone's stuff is doing something amongst everyone else's stuff. Everyone is invested in it and it gives it a life of its own and it's totally different to this trying to do it by yourself.

From my own observations as well as reports from other collaborators, Tiffany is highly adept at bringing together diverse bodies across equally diverse locations to work creatively towards social change. While the artefact of collaboration (material residue?) has some significance, it is new, strengthened and enduring relations configured in social art practices that are what is most important to Tiffany. It is in the collaborative practice that new attachments between people and things and ideas can be established, hopefully repatterning less helpful relations in the process – leading toward increased social cohesion and creating the conditions for social change. These collaborations may be obvious (for example with the ARCC, or Steve Hue the sound artist) or subtle (for example, 12 year old Dan making a single washi origami boat on a stick and adding it to the mass stream of golden boats during an artist-led community outreach session) or anywhere in between.

While on the sculpture walk, Dan liked taking a moment to sit under the boats. And eat. And drink. Afterwards, Dan tells me, what sticks in his memory is all those little boats on the big boats. Knowing that he had attended Tiffany's “Fun and friendly collective art making



Figure 13. A Golden River of Boats: a collaborative artmaking session with artist and audience.

session” creating “a golden river of boats” [ref Market Place News article, Figure 13] the previous day, I ask him “Do you think that's because you made one?” Dan replied “Yeah, because it took me like, it didn't take me that long to make it. But to make that many of them, and that was just like a fifth of it because there was the sound and... I think you appreciate the work that goes into that and that's why you think it's so awesome because the work [involved] was horrendous really”.

Through a passing engagement with a participatory and collaborative art-making session led by Tiffany as part of the public program, Dan has gained a tiny insight into the practice of collaborative art-making. This brief encounter with artist, origami washi boat, clay, stick and gradually swelling river of golden boats (more residue?) plants a seed of embodied knowing-in-doing. The taste of the ‘horrendous’ work involved is part of what Hickey-Moody and Page (2016) refer to as “the pedagogy of matter teaching the maker how they might make [and think] differently” (p. 21). As Tiffany explains, this material thinking is “to do with where my spiritual practice meets my arts practice in repetition ... I kind of get into the zen of it and I see it as a meditation – like that writing mantra on thousands of ribbons”. Tiffany’s alignment with Eastern philosophy and spirituality is actualised in the ritualistic practice of unfolding a multitude of golden paper boats and attaching them to either boat hull or stick then hardening with marine grade resin. This arts-based meditation then lives on both in the artefact and the full title of the artwork *The Journey of a Million Miles Begins with One Step* – the latter originating from a Lao Tzu teaching to prompt engagement with the notion of journey, inviting contemplation of how even the hardest (or most horrendous) journey starts with the ground which supports our feet.

One step (unfolding one origami washi boat) repeated again and again produces *The Journey of a Million Miles* – in time. The labour-intensive origami washi boat ‘meditation’ depends on the co-labour (and collaboration) of others (volunteers, friends, public audiences) to produce the creative product (artefact). Participants become artists, in practice. And art then practises on the participant-artists. Attachments between bodies and things and ideas are produced and the opportunity for relations to be (re)configured in different ways is presented. This pedagogy did not work into cracks of dis/comfort or dis/quiet like those produced by the soundscape. Instead, the collaborative art-making session activated flows of affect with a more playful, “let’s just see what this is about” tone, enabling the artist-participants to become informed and connect in a greater range of ways with the installation on the headland – not just the stories. The intensity of the art-making session could be described as relaxed and

enjoyable. And Dan and his sister enjoyed dipping into the relaxed Golden River of Boats session, while other children who heard about it later expressed their disappointment at missing out.

The making of *The Journey of a Million Miles* is in reality an assembling of multiple collaborations of different scales. There are countless mini-collaborations taking place in the art-making process alongside major collaborations which cause the body of the artwork to resonate with a wide range of people. Tiffany notes, “Everyone put everything they had into it and that’s why it is so resonant. Because everyone went above and beyond to create something else”. Steven Hue’s soundscape is one major collaboration. Within that is the collaborative re-storying of refugee stories by prominent media personalities – becoming hybrid enactments. This was, for Tiffany, one of the most important because:

The media people [who narrated the refugee stories] learn about being a part of the project and finding out about the project in terms of shifting language and then reading the stories and being on the radio and on TV and that’s really - you know if five people that are in the media and on TV start changing the way they use language [to frame resettled New Zealanders’ experiences] that’s a really significant shift because that’s what most people are informed by.

And so doing collaboration is at the heart of Tiffany’s pedagogy. Not only because engaging in collaborative practice changes what the collaborating bodies know and do, but also because of what collaborative practice produces. Tiffany explains that *The Journey of a Million Miles* is so strong because:

It’s made by lots of different people so there’s heaps of different ways for different people to relate to it. There’s multiple entry points - whether it be through the film, video, the aesthetic or the site ... there’s heaps of different ways to engage with what’s going on.

It’s all the magic of making things happen that people aren’t expecting, that jolts them out of their world.

Trust and betrayal. Integral to successful collaboration is trust, and with it the fear of betrayal. It is all part of the “magic of making things happen”. The significance of the trust relation within the ARCC partnership is underpinned by a reverence towards the organisation’s leader who according to Tiffany is “the Nelson Mandela of the [resettled] world”. Tiffany is acutely aware of how much hinges on trust between herself and the ARCC. She knows that trusting her is like taking a leap of faith since “they can’t see what I can see. And I completely understand that. They’ve never had anything to do with the art world, they’re sceptical of it and can’t understand why it would be beneficial - they can’t see the

relevance". So, Tiffany continues, "building that relationship and gaining that trust has been an incredible experience. But it has been a different place to go to. That complete vulnerability, and that I'm so dependent on someone trusting me um sight unseen". Trust is therefore a relation that carries both potential and risk that cuts both ways. The vulnerability is an affective crack line that can twist into fears and hopes.

The Journey of a Million Miles travelled along a fragile line of trust with the promise of the project eventually materialising for both artist and ARCC. This is marked by an event where Tiffany brought the ARCC community together with the other major collaborators involved in the project to experience the work on the island. Recounting this event, she says,

The greatest part for me was to see [the ARCC leader] turn up to the wharf at first so relaxed with the other people, I knew it was going to be really good – he was very smiley, very relaxed, usually he's very solemn. He didn't really trust that the project was going to work, let's be honest. And I guess there was a lot riding on that for a lot of people – not just me, but for [him], for the people whose stories it was, you know there were a lot of people that had invested into it. And obviously they trust him so that's pretty good, but he didn't know what I was really going to do.

The act of collaboration has (re)configured Tiffany's practices too:

I think like it's so much of how I think now and what I've been influenced by has been talking to [the ARCC leader]. Like so much of it, he's so right. People aren't trying to be mean or horrible, they're just unaware or just don't know. They just – like heaps of people are ignorant. They just don't know, they don't understand, if we don't give them the space to understand with different information and give them the opportunity to do things differently – and he's right. You have to have that attitude going through all that.

When I return to New Zealand later in the year, I hear that *The Journey of a Million Miles* has moved to the National Maritime Museum in a new iteration, *The Journey of a Million Miles – Following Steps*. But there has been a problem: marketing material for the exhibit was sent out without approval from the artist and the ARCC has not been acknowledged as a partner in the project. In this act there has been a betrayal; the relation of trust has ruptured. Relationships that had been so carefully built, celebrated and cemented in practice had their immanent fragilities exposed.

Kinetic Fungi Tower – Chris Booth

A vigorous march up the hill, out of earshot of *The Journey of a Million Miles*, is Chris Booth's *Kinetic Fungi Tower* (Figure 14).



Figure 14. Looking back at the Kinetic Fungi Tower.
Photograph supplied by audience-participant.

On certain days, Chris could be found accompanying the tower, actively engaging audience bodyminds with the fungi action taking place within. I met Chris six months prior to the sculpture event at an artist talk hosted by hSOTG in the community library. As he showcased some of his past projects, I was attracted to the way he talked about the rocks and plant life that co-constituted his material practice, as if they were his friends or, to borrow from Haraway (2008), his co-labourers. Chris' *Kinetic Fungi Tower* is his first living sculpture to inhabit New Zealand. Fungus is a fundamental participant (joint labourer?) in the artwork, producing movement by doing much of the decomposition of the gnarled grapevine trunks which form the tower (for now). In approximately seventy years, Chris tells me, the seven-metre tower will have decomposed, becoming compost. Chris states that the purpose of the artwork is to raise awareness of "the greatest recycler on the planet: fungi" (Exhibition Catalogue, p. 36).

The first glimpse of *Kinetic Fungi Tower* may be had from the ferry as it motors into Matiatia Bay. The Tower observes the hSOTG audience arrive on the island and then later

depart back to the mainland. Its dark silhouette stands tall, marking the location of the sculpture event, waiting patiently for the sculpture-walkers to make their way to it. It has time. And although the name 'Kinetic Fungi Tower' implies it is on the move, it is going nowhere fast. But while the tower is in no rush, it is in fact rather busy becoming compost through complex *intraactions* of moisture, fungi, insects, grapevine trunks, heat and earth. The artwork lives in practices of decomposition with fungi that the tower of grapevine trunks nourish. The death of the grapevine does not mean its life has ended; rather, death is an event that marks change in living, material practice. "As the fungi eat the vines the tower slowly moves to the ground", Chris writes succinctly in the Exhibition Catalogue (p. 36). In reality, the movement is so very slow that it is imperceptible, at first. Overtime the descension of the structure will become increasingly obvious as the tower-body collapses into itself, producing material residue of change. This is the plan, anyway. Chris tells me, "You don't really know exactly how it's going to unfold. And I probably never will because I'll be dead because it'll take twenty or thirty years for it to happen".

So *Kinetic Fungi Tower* is viticulture waste in the form of gnarly grapevine trunks 'knitted' together, with the fungi responsible for eating the viticulture waste being a vital ingredient of wine. It is thought of by the audience-participants as the sculpture made out of sticks. I'm told by one audience-participant that it looks like it's been stacked like a Jenga tower – which is exactly how it's been made, except in a circular shape not a square, and with an odd assortment of twisting, irregular shapes, not uniform, rectangular cuboids. The audience and artwork can get intimately close. I observed hands and rough bark touching, bodies pushing against the tower to presumably check its structural integrity, and some other bodies interrogating it with their own sticks in hand (Figure 15). The artwork invites a full 'up close and personal' sensory engagement with its scale and materiality "compared to a normal art gallery where you can't be really close to things", as one audience-participant declares. Another, Antony, tells me, "I was like it needs a door, I need to go inside. And I went around, and it was just a big circle with sticks". There is no door for human bodies to enter. The artwork resists Antony's desire to go in. It is more inviting to other species, though; not only do the sticks nourish fungi but they also become habitat for local bird and insect life (Figure 15). Spiders quickly take refuge in the tower, spinning webs, catching food. Birds also investigate it for their own uses – perhaps it will make a good nesting site? Couch grass, recently cleared, vigorously reclaims its ground and chomps at the foot of the tower.

Collaborating with more-than-humans. *Kinetic Fungi Tower* is of such a large scale that it cannot be made by a lone artist. Chris must collaborate with a range of human and more-than-human entities to make it a reality. In practice, Chris recognised the agency of his more-than-human collaborators in the same way he did that of his human volunteers. He did not dictate how the artwork would unfold; instead, he set up the conditions for the artwork to happen, or as Neimanis (2012) puts it, “establish fertile grounds for the combustive rewards of strange kinships” (p. 219). When asked about how the materials changed the artwork, Chris responded:



Figure 15. The structure made of gnarled vine trunks provides habitat for spiders, birds and fungi. Susannah (8) inspects the structure with stick in hand.

Yes, it was to be some sort of living sculpture with some sort of a tower arrangement, possibly, probably with a boulder on top. Not one boulder, it was to be a number of rocks because there are no big boulders here [on the island]. And so as you know I quickly realised that I wasn't going to be putting any rocks anywhere and this stuff spoke so strongly just like it is that let's just go right to the top which we did do.

As the grapevine trunks refused Chris' original plans for the tower, he had to adjust the design accordingly. The grapevines “spoke so strongly” he just had to respond in kind, collaborating, enacting an arts practice of reciprocal relations with nonhuman others. Entangled in all of this were fungi, major collaborators hosted by the grapevine off-cuts. Without the fungi there would be no kinetic energy, and nowhere for the intended pedagogy to locate (and enliven).

The intended pedagogy – which is to make perceptible the crucial role fungi take on as the great recyclers of the planet and their potential for addressing environmental contamination – relies on fungi in action. And while the fungi can be encouraged to live and consume in a certain place, they are never in the artist's control. Yet Chris trusts the fungi and is accepting of how their practice unfolds:

And there's another one in Germany where I was honouring the bracket fungus, and ah because in that area there's a piece of forest that's – only Germany acknowledges there should be areas of forest that no human being goes into – so thought that was terrific, and here fungi's allowed to live and do whatever it wants to do in the forest, and so on the edge of that forest I created a very large-scale bracket fungus as if it was growing on the ground. And lots of local wood which the forest has supplied to me, and ah I wove all these stones together and leaned them up against it and as all the wood gets eaten by the fungi so the stones then move and ultimately will land like a small print of fungi on the ground. I just love that collaboration between us.

In co-labouring with the fungi, Chris repatterns an existing human-centric relation with fungi, practising a flattened ontology that honours fungi's contribution to the environment and life itself.

Time and movement. The sculpture materialised slowly, taking all year to gather the materials that would participate in the moving tower. Prior to this these materials took many more years to grow into gnarled vine trunks. And while the tower itself is massive, the fungi are minute and it will take decades to (un)make the tower without human intervention. The tower will always be a partially known entity, and even though there is an artistic product (in a sense), the artwork is, and always will be, in a state of becoming. It will never be finished. In practice, the decomposition of the tower moves outside everyday human perceptibility – “You never see the movement ever unless you hung around for forty years and watched it” – yet the profundity of its infinitesimal movement has resonated with the broader arts community which awarded Chris with the Netherlands National Kinetic Sculpture Award for his work in this area. Chris tells me about how fungi came to take such a significant role in his arts practice:

I'm collaborating with the fungus in, I think, 1998 in Denmark and I loved doing that piece where the natural action of fungi with dead organic material, it basically eats it and I thought taking advantage of the fact that it consumes the organic material then if there were rocks in association with consumption then the rocks could move – I thought, if I do things well they might move in a premeditated sort of way. And the very first ones I did in Denmark were basically one rock per organic tower and over all these years I've

noticed that the rate of consumption was much slower than I ever dreamt. The one in Denmark has only moved about a metre, which is incredible really – from 1998 through to now [2017].

The *Kinetic Fungi Tower* thus brings into question the primacy of human conceptions of time, scale and movement. It is a *slow* sculpture. It moves slowly, “Much slower than I ever dreamt”, Chris comments. Likewise, it produces a slow pedagogy, creating space that is there but not perceptibly there. To enter the fungi time-space, audience-bodies must hesitate long enough to perceive the imperceptible action taking place in vital practices of decomposing, consuming, reproducing bodies that co-create the moving tower. Not only does it move slowly, it also slows time, practising a different scale of ecological time, as it were. This potentially can prompt artist and audience-bodies alike to consider what might come from moving beyond the limitations of human-centred perceptions of time and how this might act on habituated patterns of relating to the environment.

Inventive encounters, delirious affects. The careful positioning of the tower, like a lighthouse on the highest point of the headland looking out across the gulf, evokes associations in some audience-bodies with ancient ways of guiding people and signalling. Chris tells me,

There was an English person today saying that for one of the anniversaries in England recently, all the headlands redid what they used to do in the past. They had big piles of wood and one would get burnt and then the other one would burn and so on and so forth, redoing what they were doing hundreds of years ago.

This connection with historic practices (history is an actor in the assemblage) also led to several audience-participants voicing the urge to burn the sculpture down! I heard this phrase (or versions of it) from several audience-participants, “I like the beacon. I’m desperate to go up there with a box of matches”. At the same time, the sculpture provoked an engagement with fictional narratives. Ruby tells me, “It sort of like reminded me of Rapunzel. That’s why I think I liked it because I thought it was really cool”. Another young person said it reminded him of *Harry Potter and the Cursed Child*.

While these responses do not relate to the fungi action taking place, Ruby and the other audience-participants are making sense of their encounters with the artwork through inventive recombination of relations. As Manning (2009, p. 212) points out, “To sense is not simply to receive input – it is to invent. Invention springs from open machines of recombination”. And a body is one such sensing, inventing machine that has the capacity to affect and be affected in the inventing process. The audience-participant-bodies fold their

attending personal histories, narratives and experiences into what becomes an inventive encounter with the tower. These unfold in different combinations, albeit not always anticipated or intended by the artist.

Seeding pedagogic relations. Perhaps what is so challenging about the fungi-related pedagogy of the tower is that it requires audience bodyminds to access a borderland space between what is perceptible and imperceptible to human bodyminds. This pedagogy resides on the threshold of perception, which according to Deleuze is a powerful space since “that’s where things come to pass, on the border” (1995, p. 45). Yet it is difficult for audience bodyminds to reach the threshold of what can and cannot be perceived without support. Much of the tower’s pedagogic force requires activating in practices that move audience bodyminds into the borderland, and open a crack in which the pedagogy can exert force. I came to know such practices that act to cultivate the pedagogy of artworks as *seeding practices*. While common in the broader hSOTG data, I specifically drill into Chris’ seeding practices because, unlike the other artworks in this study, data indicate that the success of his *intended* pedagogy is contingent on seeding practices. Audience responses to *Kinetic Fungi Tower* show audience-participants rarely (if ever) connected with the work as intended by the artist if they had not participated in seeding practices – that is, if audiences had not encountered Chris on-site or had not previously engaged in an artist talk, volunteering, supplying materials, prior experiences with Chris’ work, the event catalogue, the event app, or a guided tour, fungi remained absent from their experience. Rather, audiences would engage with the material presence of the structure on their own pre-existing (already known) terms such as Rapunzel’s prison tower, the nest that Albus Potter⁵⁶ takes shelter in, or a beacon preparing for ignition. In the case of *Kinetic Fungi Tower*, fungi did not work as an educational device without its fungal (natural) practices being incorporated into pedagogic practices (social, cultural) that draw audiences into a more-than-human and more-than-rational and more-than-intended borderland. In this borderland individuals gained the potential to (re)pattern their relations to fungi, waste, and the environment, and hopefully activate thought and action.

Engaging local community. Of all the seeding practices that worked to activate the pedagogy of *Kinetic Fungi Tower*, the ones that involved Chris-in-person were the most reliable. Using his public artist talk at the local island library as a platform to recruit an installation crew and actively source materials for his artwork, Chris connected himself, his

⁵⁶ Harry Potter’s son in *Harry Potter and the Cursed Child*.

arts practice and his concept for the proposed work with the locals who would help make the artwork a reality (and also this research project). He says that the

Wonderful thing about it is that I'm working very closely with the community building these things, now I'm working with all these vineyards, they all know their material is with me. I'm creating this work, and today I've had people from some of those vineyards come by, and those that know those people on the vineyards and they're aware I was given this material.

An island resident and hSOTG event volunteer concurs:

I thought it was really cool but I also liked that throughout the whole of the year they'd taken them from the vineyards and they'd used the [inaudible] and everything so it was all connected which was really cool. And I liked the fact that it would slowly change over time and be completely different at the end.

Curiosity was sparked and people connected to Chris' project through the presentation of himself, his philosophy of art with land-nature-spirit-community, his collaborators (namely rocks, wood and fungi), and images of large-scale environmental artworks. This resulted in a desire in audience-bodies to assist in the realisation of the planned artwork through gifts of sculpture materials by the island wine makers and offers to volunteer on-site. For these individuals and businesses, a way to engage more deeply with the artwork, materials, and Chris's art practice was forged. Those that were not reached at this point still had the potential of encountering seeding practices through guided sculpture walks, media exposure, signage, the exhibition catalogue/app, past exhibits, and volunteering.

Wake up! The most powerful pedagogic practice occurred when Chris spent time on-site talking with audiences as they made their way around the event. Observational and interview data show how affective practices of practitioner-bodies (such as Chris') can play a significant role when engaging audiences in difficult acts of sensing, perceiving and thinking with the seemingly insensible, imperceptible and unthinkable. The state of the environment is of great concern to Chris. He says he is "trying to wake-up, myself first of all, but hopefully others and particularly children". He spends a notable amount of time on-site activating audience-bodies in a deeper engagement with the artwork. His on-site practice is embodied in an animated performance inflected with enthusiasm and humour. A recount of one such performance follows:

If I can keep the sparkle in the children's eyes and not see a glaze coming over, I know I'm getting through to them. So, I'm standing by this pile of wood and the kids are coming up at first wonderfully engaged but then quickly going glazed and the parents are asking

'glazy' questions. You know 'how long did it take to build and blah blah blah blah'. I try to act with animation and say "Children!" and I get down to their level and I say, "This stack of wood here is being eaten at the moment by fungus. Can you hear them?" and they put their ears to it. But it is too windy for them to hear the fungi eating the wood of course. And then they get the fact that I'm not telling the truth there but ah I found they were engaged and I asked – how old are you now? and she said five, and the other little one said ten for example, I said, "When you're fifty-five and you're sixty, um this big pile of wood will just be earth on the ground! That's the fungus, the same as mushrooms, they're all in the same family, related to each other. The mushrooms that you eat". So that's a huge educational tool. "Ooh!" [they go].

Artist and audiences feel each other out, finding common ground. In this instance, Chris makes a connection through “mushrooms that you eat”, and leverages off that to start bringing the unthought fungi action into conscious thought. He transmits affects, accentuating and circulating them by lowering his voice, asking the absurd (listen to the fungi eating), weaving a narrative that incorporates audience-bodies and imaginations – keenly aware that once the sparkle in their eyes is gone, bodyminds have wandered elsewhere and the chance to raise awareness of the important role of fungi in our ecosystem is lost.

Chris's practice is highly attuned to the bodily responses of children and adults alike, responding in-the-moment with the adjustment of his own bodily movements – crouching down to the same level as the children, exaggerating facial expressions, gesturing with arms, pressing his ear up against the tower – actively motioning audience-bodies into the world of the *Kinetic Fungi Tower*. Once this strange world is accessed with an utterance “Ooh!”, bodyminds of children and their adults readily fire up. They get interested and question Chris back, marvelling at the doings of both artist and artwork, entering into a process of repatterning their relation to fungi, time, movement, the local viticulture industry and the land. And this is how the intended pedagogy of *Kinetic Fungi Tower* worked best, with patterns of relations emerging (or recombining) in consciously embodied processes of meaning-making and mattering, guided by the artist-in-person. Otherwise the pedagogy was at risk of remaining latent.

Untitled: Whakanoa – Martin Awa Clarke Langdon

Figure 16. Part one of the sculpture: A formal assemblage, *Untitled – Whakanoa*, Martin Awa Clarke Langdon.

Far away from the bustle of the headland, hosted by the sheltered foreshore of Matiatia, is *Untitled – Whakanoa* by Martin Awa Clarke Langdon. Interestingly, Martin doesn't burden his artwork with a name; it remains untitled, existing as a simple invitation for people to engage in a material practice of whakanoa (lifting tapu) so that they may come to know "important yet unseen histories that are culturally entangled in the site" (Exhibition Catalogue, p. 70), which is in fact an area of urupā (burial), inhabited by elders who have passed and who are, as mentioned earlier, "buried and silent but not forgotten" (Ngāti Paoa, Exhibition Catalogue, p. 7). In sharing this history, Martin hopes to promote to the wider public knowledge and practice of the necessary ways to conduct oneself on the foreshore urupā.

Martin is a multidisciplinary, Auckland-based artist, educator and curator. He came to my attention through his involvement in the public program of hSOTG, which included an artist talk, a touchstone project at The Pavilion aimed at engaging children and families, and an impromptu encounter with the New Zealand Sign Language tour group (to follow). Martin's bicultural Māori-Pākehā heritage affords entry to a unique space of opportunity and tension – which he navigates with humility and generosity, raising awareness of consequential

entanglements of meaning and mattering. This particular thread of whakapapa (a transversal way of understanding family, genealogy and cosmology and how this interrelates with people, place, events and objects) runs through his arts practice.

The hSOTG artwork consists of three parts, marking out the geographical area the artwork incorporates (including the space above and below the ground). The first part (Figure 16) rests in a central location in front of The Pavilion – generally the first and last port of call for hSOTG audiences. It is a more formal assemblage of running water (albatross tears), stone, branch, and artillery casing. The materiality of this is an important consideration, with the artillery casing working to materially connect the artwork and audience with Martin’s whakapapa. Parts two and three (Figure 17) are located at either end of the urupā, thus incorporating the foreshore into the assemblage. A modest artwork, consisting of plastic water bottles attached to steel Y waratah posts at either end of the site are just like the ones used at his whanau urupā (family burial ground) as a child. In close proximity are small, unassuming plaques previously attached to boulders asking visitors to the area to respect the sacred space (also Figure 17).



*Figure 17. Parts two and three of the sculpture.
 Humble water bottles in close proximity of plaque announcing the foreshore as a sacred space.
 Top right: audience body lifting tapu with water source provided by the artwork.*

The sculpture acts in an interventionist way on visitors and local residents alike. It also acted forcibly on me, as researcher-audience-participant. I have a personal connection with the site, having regularly spent summers on the island growing up. And while not an island local, I am generally familiar with cultural expectations and practices on the island. The following data-story manifested during a research conversation with an audience-participant who resides on the island. I am describing my first encounter with *Untitled – Whakanoa* (and Martin who was accompanying it at the time):

Me: Martin's one at the front here I thought was really subtle but beautiful and um I hadn't realised, all these years that we'd been coming here I hadn't realised that we should've been washing our hands with water as we leave Matiatia and the land here. Talking to him just totally opened my eyes to that. And I felt quite moved and then he was telling me about the water, and how the sculpture was actually the whole bay, and this was just one little bit of evidence of that as well as a water source. Because there is no running water source here.

Kerrie: It's quite amazing how little people know about a lot of that stuff. Like know about, you know for all time, I mean we've lived here almost ten years. And um we don't eat down there for that very reason and that's why there's typically rules in place [at hSOTG] that you can't take your food anywhere further than these marquees because these all get blessed as well. So if you're going further than that [down onto the foreshore], like I say there's bones and all sorts of things down there, it's just not cool.

The sculpture entwines with hSOTG rules about where visitors to the island can purchase food and drink and where they can consume it. It incorporates signage in The Pavilion marquee as well as existing memorials (plaque on boulder, Figure 17), drawing 'necessary urupā conduct' into relation with the sculpture event and those attending through the close proximity of waratah and water bottle (Figure 17). The artwork also has the power to generate a palpable intensity in and between audience-bodies. It was not uncommon for those who encountered it to report hairs standing on end. Yet it was also a sculpture that was regularly overlooked by weary audiences making their way to the ferry or carpark, having already spent a couple of hours walking the headland track. In its modesty, it blended into the local environment as if it belonged. And hungry, thirsty, tired, weathered, audience-bodies were unlikely to take notice of something that didn't expressly pop out at them. But when they were given cause to stop and contemplate Martin's simple yet profound offering, audience bodyminds could be struck by its pedagogical force. One such occasion occurred during a New Zealand Sign Language (NZSL) tour of the event, which involved a group of approximately fifteen Deaf individuals, their hearing family members, three dogs, two English-to-NZSL

interpreters, the manager of the hSOTG cultural program and myself, who is illiterate when it comes to NZSL. The following is an account of this event, as recorded in my fieldnotes:

I am on a tour with the NZSL group. After a couple of hours on the track, making our way around the headland, our NZSL interpreter brings the group to one final stop at one of Martin's water bottles. We are told by our guide (the cultural program manager) there are marked and unmarked bones in the ground and this sculpture is raising awareness of this, and the actions this new knowledge necessitates (lifting tapu). As the interpreter signs this to the group they are quite literally shocked into a still-silence. As the shock morphs into understanding, everybody in the group proceeds to rinse their hands with water from the plastic water bottle. Other audience-bodies catch our group in the act, triggering them to also stop and engage with the artwork. They then copy our newly acquired practice of appropriate urupā conduct.

Martin then joined the NZSL group outside The Pavilion, in front of the formal component of his artwork. The deaf audience ask questions through the interpreter and Martin's responses are signed (performed?) back. Martin tells the group that several months ago he had unwittingly attempted to put bamboo stakes in the ground and was stopped from doing so because the site is tapu (sacred). This led to him taking action by creating the artwork. Some of the deaf audience were brought to tears at the end, the impromptu chat ending with the entire group clapping by wiggling their fingers in the air en masse. It is like a dance or perhaps the glimmer of multiple waves cresting in the sunlight.

Not only does the artwork provide a water source for removing tapu as people enter and depart the urupā on the foreshore, it engages audience bodyminds in an act of knowing-in-doing. They are prompted to perform a cultural history (heritage?) that already exists but which, Martin tells the audience, they may not have been spiritually able or ready to access – until now. An embodied encounter with the artwork (including the whole bay and its historical discourses) is marked by an affective intensity, evidenced in bodily responses such as the gasps of the NZSL group. The ensuing shocked-silence stuck to me long after the event had passed. It was an aha moment spontaneously performed by the whole group that opened a space for hearing bodies and deaf bodies to come together in a shared revelation that would undoubtedly mark everybody's memory of the day. But this encounter would have been unlikely to happen without the initial intervention (seeding practice?) from the NZSL guide and interpreter. So like *Kinetic Fungi Tower*, the affectively charged pedagogy prompted by an encounter with this artwork risks not being activated if unaware audience bodyminds pass by.

Buried Gemstone – Dane Mitchell.

I turn now to a fourth artist-artwork that seeped into this study by its own volition. Somewhere (but where?) on the headland lives (or hides?) a large semi-precious stone.



Figure 18. Dane Mitchell, *Buried Gemstone*.
Undisclosed location. Picture supplied by the artist.

As its title suggests, *Buried Gemstone* consists of a single, large gemstone buried in an undisclosed location. The artist responsible for burying the gemstone, Dane Mitchell, is an unsolicited participant.⁵⁷ He enters the study solely through the affective flows produced by the hidden gem which repeatedly infiltrated the audience-participant conversations and my observational data. Dane is not a social practice artist in the sense that Tiffany, Chris and Martin are. However, his extensive body of work indicates a material practice that has a conceptual link with this research project, particularly with regard to his explorations of the invisible forces that inhabit physical spaces *and* people's imaginations. The pedagogy of Dane's arts practice also has an unlikely connection with that of Chris Booth in that he too shifts bodyminds to a borderland – this one being the cusp of what is absent and what is present.

⁵⁷ While I did contact Dane to seek his consent to be included in my research, I did not meet him in person or interview him for the study. Data associated with him comes from publicly available sources such as the hSOTG catalogue and Dane's own website <https://www.danemitchell.co.nz> along with transcripts of research conversations with the hSOTG audience-participants.

And in its becoming-absent present, *Buried Gemstone* (and to a certain extent Dane himself) is primarily located in the research(er) and/or audience imagination. Dane writes about the practices of *Buried Gemstone* on his website:

[It] is a work that primarily exists [practices?] in the imaginations of the viewers as they walk the sculpture trail it sits within: imagining this latent object – a precious stone – concealed from view yet present in the mind of the viewer and in the soil of the site alike ... Through this act of concealment the work becomes a kind of uncontrollable encounter: the entire site of the [hSOTG] becomes a contaminated field. Like a contagion, the hidden object infects the entire landscape.

[Buried Gemstone] can be seen as a counteragent to the physicality of much of the work on the sculpture trail. I hope that it might encourage conversations ... pertaining to ... the role of the imagination in viewing works of art, how the unseen might be an effervescent presence (with)in everything and how a work of art might imbed (sic) in the landscape rather than be plonked on it. And although that's a lot of weight for one artwork to carry, perhaps it might also suggest the hidden value the land holds.
(<https://www.danemitchell.co.nz/buried-gemstone>).

The artwork starts working away at audience bodyminds like a niggle (where in the earth is it? Is there evidence of the burial? It can't be round here, can it?). In time and movement, it grows into an itch (How do we know he even buried it? What if I find it? Can I keep it? Will he dig it up at the end of the event?), spreading in and between audience-bodies, wandering unsolicited into many hSOTG conversations – including this exchange that occurred at the end of a research conversation that I had with a group of eight-year-old audience-participants:

Me-as-researcher: What do reckon you learn when you do the sculpture walk? Is there anything that you take away from it that you use later or think about later or ... ?

Susannah: Well, you saying the words 'think about', this probably doesn't connect to it but there's an artist who came to our school. He was the artist who buried the gemstone.

Me-as-researcher: Dane Mitchell?

Yeah, and um he was telling everyone about how he was interested in making everyone, how when you show someone your drawing you want them to see it and 'think about' it and he was thinking about making you ONLY think about it - like forcing you to think about it and I guess it doesn't have much to do with the subject but when you said the words 'think about' it, that just triggered it in my memory.

Buried Gemstone works quite differently from the other sculptures of the site. It exists not so much as an object to behold as in the material practices of audience bodyminds that are forced to think, to imagine, to invent relations with an absent presence. It is reminiscent of Deleuze's often cited passage:

Something in the world forces us to think. This something is an object not of recognition but of a fundamental encounter. What is encountered may be Socrates, a temple or a demon. It may be grasped in a range of affective tones: wonder, love, hatred, suffering. In whichever tone, its primary characteristic is that it can only be sensed" (original italics, Deleuze, 1994, p. 183).



Figure 19. *Buried Gemstone* artwork label.

Dane stages “a kind of uncontrollable encounter” through an “act of concealment” which is performed into reality in seeding practices such as school visits, artist talks, an exhibition catalogue, and a label. At the bottom of the label is a price, \$21,000 inclusive of GST, and a protocol for sales enquiries. And so the artwork becomes a reality, a contagious reality that not only carries monetary value (\$21,000 to be exact) but also alludes to the cultural value of the land it inhabits – “the jewel of the Hauraki Gulf”. Desiring, curious bodies that may have overlooked, dismissed or laughed at the sculpture at first begin to get caught up in its (imaginary?) practices, becoming affected by its immanent vitality. As the idea of the

gemstone takes flight, audience-bodies are forced to think, invent, recombine ways of relating to this artwork and art in general.

Summary

For the duration of the event the pedagogy of the sculpture event-assemblage could be understood as swarming around the different artworks, themselves located somewhere in proximity of the track, which wound around the headland and then down to Matiatia Bay. Each artwork enacted a pedagogy that had a distinct affective tone, produced in a range of social and material practices, for example *The Journey's* juxtaposition of haunting soundscapes with carefully assembled spaces of refuge (overturned boats); *Kinetic Fungi Tower's* radical collaboration with fungi, viticulture waste and artist; *Untitled – Whakanoa's* humble provision of a water source to enable visitors to engage in necessary urupā conduct; and *Buried Gemstone's* concealment. It is evident that the pedagogic affects generated in each embodied encounter with an artwork produced affective intensities constitutive of varying degrees of intentionality – with a high degree of intentionality relying on seeding practices (e.g., artists talks, community outreach sessions, guided tours), sonorous practices (e.g., soundscape), collaborative practices (e.g., collaborating with community groups or local businesses), and discursive practices (e.g., the exhibition catalogue) to be fully realised. The organising committee and the manager of the public program worked hard to facilitate many of these practices, playing an instrumental role in holding the broader sculpture event-assemblage together before it finally dispersed at the end of the event with the de-install and wrap-up party. However, the pedagogy never really goes away, with pedagogic residue remaining as an impression on the bodyminds that encountered them, material artefacts such as photographs and catalogues, the artworks that were sold and relocated into different collections, and ongoing collaborations forged during the event itself

Map Fragment V: Cartography of a Human Pathology Museum

Topological coordinates: B5, C5

Museum Facebook post: TimeOut Sydney gave us a nice write-up this week (apparently our “lighting and décor are a little fusty lab-chic” but we choose to lean in to that).

TimeOut review (<https://www.timeout.com/sydney/museums/museum-of-human-disease>)



Figure 20. One of four photos supplied by the museum to accompany the TimeOut Sydney review.

Hyperlinked review: Hypochondriacs and WebMD enthusiasts, this one's for you. For a stunning confrontation with your own mortality, pay a visit to this specialist museum housed within the University of New South Wales. In its possession are 2,000 specimens of human disease, obtained from the organs and tissue of autopsied patients who've generously given their bodies to science. You'll see appetite-busting specimens of everything from tapeworms and typhoid to tuberculosis and teratoma, an alien-like tumour that grows its own hair, skin and teeth. Exhibits are accompanied by a detailed clinical history of the ill-fated donor patient, giving the weird fleshy bits you're looking at some (sad) humanity. There are sections dedicated to lifestyle diseases that'll have you signing up for the gym and throwing out your spirit cupboard, plus a trippy Oculus Rift exhibit where you can 'walk' through an artery. Sure, the lighting and décor are a little fusty lab-chic, but what's inside the cabinets is some morbidly fascinating stuff. If you're the kind of person who can't watch an episode of *Embarrassing Bodies* without feeling your dinner shift north then this one's not for you.

Comment on the above Facebook post by a young person: Visiting here was, hands down, my favourite school excursion! I'd love to make another visit one day.

Context

The human pathology museum is, as the preceding *TimeOut* review states, “a confrontation with your own mortality”. It is concerned with disease and death. And it is also concerned with living. Located on the campus of an Australian university specialising in biomedical science and engineering, the human pathology museum houses Australia’s oldest surviving medical specimens. It has a long history of engagement with tertiary education and also boasts 10,000+ senior secondary school student visitors annually, with one young person sharing on the museum Facebook page below the *TimeOut* post that the museum was “hands down, my favourite school excursion”. The 3,000 specimens housed by the museum have been produced over 100+ years of more-than-human and medical (mis)adventure. Some specimens are particularly valuable because they show disease that has been all but eradicated in so-called developed countries, such as brain and bone samples of tuberculosis. The specimens are kept primarily for educational purposes in the museum and university, and as such work together with staff, student volunteers, technology, medical devices, images, infographics, social media, purpose-built apps, holiday programs, and exhibits to get visitors to *Know Your Enemy*. The diseased tissues work in part to prompt an embodied material engagement with the science of human pathology, its causes and its prevention.

Infused with humour, the museum gives a new twist to motivational speaker Jim Rohn’s quote “Take care of your body. It is the only place you have to live” (<https://www.entrepreneur.com/article/271873>) by displaying the text alongside specimens diseased due to their host body’s lifestyle. This is part of a unique pedagogy entangled in the comings, goings and doings of specimens, clinical histories, biomedical discourse, teaching devices, feeling-moving-bodies (staff, interns, volunteers, university students, school groups, and local community), and a plethora of biomedical technologies from the past, present and future. It is an energetic museum but definitely not ‘slick’. Rather, it is what one might describe as a middle-aged museum with “fusty lab-chic lighting and décor”, as the *TimeOut* reviewer aptly points out. But as the museum says, it “chooses to lean into that” and so it becomes a space where high-school work experience students research and develop displays alongside museum education staff who develop school and public programs. In so doing, they may tap into a variety of museum and university resources. As a small institution, the museum also has the agility to incorporate narratives (discourse) of immanent biomedical events such as the 2013–2016 Ebola epidemic in West Africa or the ever-looming threat of a zombie apocalypse – made real by practices that weave together science of disease, documentaries,

science fiction, popular culture discourses, Hollywood-style horror genre, and increasingly sophisticated special effects used in TV, video-game and movie productions.

Museum practitioners, pedagogic intention. The pedagogy of the museum is curated (assembled?) primarily by museum director Derek, who was a zoologist before entering the world of museology. And while the museum is a busy place, with a range of educators and scientists involved in one way or another, the pedagogies that assemble there have a particular aesthetic. The established pedagogic relations are anchored in a creative (scientific?) process of trial and error. Describing how he and his staff set about developing the suite of programs currently operating in the museum, Derek says:

We had a facility that was exemplary almost, in terms of the resources we had, the ability it had to do a whole range of things. So we were free to try things and a lot of it is about experimenting and going ‘everything works to a degree, which things work most?’ Um, ‘and how do they fit into this idea of what we want to do’.

As a result, no two holiday programs are the same – even if they are the ‘same’ program. Yet common threads (recurring patterns) run through all the educational practices. This is likely due to the way Derek’s particular style of leadership, which I would describe as relaxed yet fearlessly experimental with a satirical twist, entwines with the reality of working in what can be “a sorrowful place because what we display is essentially people’s last experiences, the diseases that ended their lives” [data from interview segment in laminated magazine article on display at the museum reception]. Much of this sorrow is countered by humour and laughter. Derek notes that “All the staff here have a pretty dark⁵⁸ sense of humour but you need that – if you don’t have humour you’re left with hypochondria” [ibid].

Along with this is a commitment to educate young people about preventing disease and encourage them to make informed lifestyle choices: ‘take care of your body...’. To do this Derek finds it useful to build a narrative around a specimen or group of specimens. For example, he uses a seven-year old boy’s trachea to talk about less visible diseases such as

⁵⁸Derek uses the term ‘dark’ here when referring to humorous practices at the museum which, due to the nature of the collection, is inflected with morbidity. However, I do not take this as an indication of the museum acting as a site of ‘dark tourism’ (Stone, 2013). Bowman and Pezzullo (2009) do a generative critique of the notion of ‘dark tourism’ and thus trouble the use of the concept on ethical, political and ultimately ontological grounds. They argue that “labelling a site as ‘dark’ seems to be a complicated matter of perspective and privilege” (Bowman & Pezzullo, 2009, p. 191). And while an in depth discussion of the pathology museum’s possible relationship with ‘dark tourism’ falls out of the scope of this thesis, it is important to note that an analysis of the museum practices is not well served by entering into unhelpful dichotomies (dark/light, death obsessed/life affirming, improper/proper, tasteless/tasteful) that work to smooth over inherent complexities (Bowman & Pezzullo, 2009). In addition, the museum does not market or identify itself as a ‘dark site’ and can be understood to actively resist being categorised as a ‘dark tourist site’ by focussing on its educational, archival and community purposes.

diphtheria (the cause of the boy's suffering and eventual death) that were common in the pre-vaccination era. He hopes that a reported backlash against vaccination in some Australian communities by the media will not lead to another child suffering in the same way. Stories entangle with histories to become important participants in museum pedagogy.

Another purpose of the museum exhibits and public programs is to showcase cutting-edge biomedical research coming out of the museum's host university. Practices of human disease are interconnected with fast-evolving technologies that can create sophisticated visualisations as well as human-technology hybrids through the likes of cochlear implants, mind-controlled prosthetics and bionic eyes. At times disease becomes inseparable from the technologies that diagnose and treat it. I observed volunteer biomedical university students presenting these technologies through a program called *Brain Science*,⁵⁹ further developing their already impressive presentation and demonstration skills in the process. The host university adds value to volunteer work such as this by acknowledging it on a student's academic transcript, while the museum provides references. This is all part of Derek's commitment to cultivating an environment that develops the capacities of a range of individuals in the university community.

Know Your Enemy. The tenor of trauma is an unavoidable dynamic of the collection. It therefore modulates the experience of going to see the permanent exhibit *Know Your Enemy* (Figure 20). In my research journal I write:

My first visit to the museum stuck with me for a long time after I left. The bodies of the museum affected me in peculiar ways. Certain specimens, or more accurately groups of specimens, revisited me over the weekend and the weeks to come, sometimes resulting in a wave of nausea. A gangrene foot (Figure 21), a group of melanoma specimens including metastasis to bodily organs, a black lung (Figure 22), a gangrenous hand, and a teratoma of hair-teeth-flesh (Figure 23).

These specimens all returned unbidden in the days and weeks following my first encounter with the museum. Yet so did the laughter and the warmth of the museum staff, along with their enthusiasm for the collection and the future of the museum as a site for educating audiences on health, disease prevention, and biomedical developments.

⁵⁹ I have largely excluded data generated during the *Brain Science* program from this chapter, choosing instead to drill more deeply into the zombie program data. The *Zombie Apocalypse Survival Course* event-assemblage was notably more intense than the *Brain Science* program, creating the conditions to learn intensely in the museum in a way that *Brain Science* did not quite achieve.



Figure 21. Gangrenous foot.

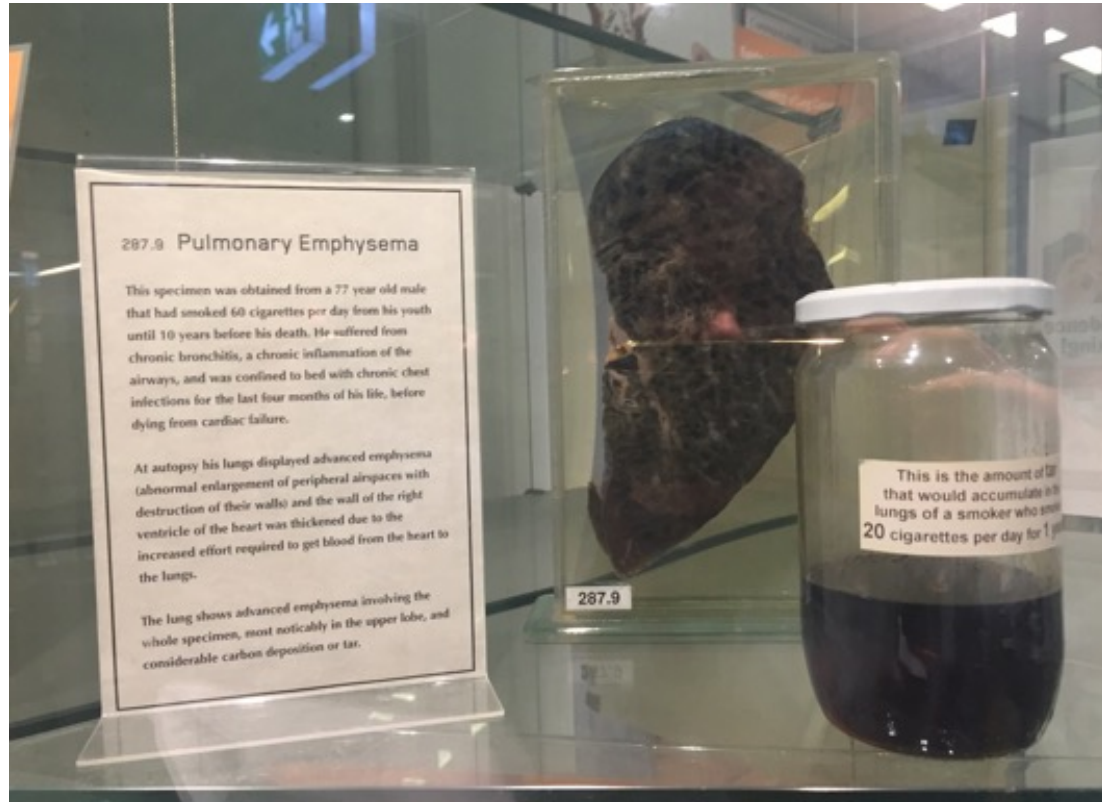


Figure 22. Black lung.



Figure 23. Teratoma with hair and tooth.

The powerful affects of a visit to the ‘everyday’ version of the (more permanent) museum exhibit are palpable and stick with surprising strength, prodding my bodymind “over the weekend and weeks to come”, “sometimes resulting in a wave of nausea”. An encounter with the somewhat chaotic affectivities as they emerge amongst a plethora of assembled case-histories-specimens-trauma-technologies-signage-images-décor-smell-climate-control-hum makes the *Know Your Enemy* pedagogy tricky for audience bodyminds to navigate with any predictability. In the instance of the (more) permanent exhibit, much of the pedagogic potential of the site remains latent unless a spontaneous rupture occurs – sometimes long after the initial encounter.

However, the museum has many guises, and in a few weeks, it will stage a *Zombie Apocalypse Survival Course* (back by popular demand). The survival course, or zombie program, transforms the everyday version of the museum into a key actor in mitigating an ensuing zombie apocalypse, resulting from the release of a military-grade serum containing live zombie pathogens. The museum becomes an archive of affects. And the children who dare to enter are thrust into the role of zombie-scientist as they embark on a quest to identify who amongst a quarantined group of symptomatic individuals is patient zero. To succeed, they

must engage a range of the museum's resources and the medical records of the 'suspects'. The intent is to introduce the becoming zombie-scientists to multiple facets of disease science, including pathology and epidemiology. Before explaining how this occurred in the situated practices of the museum acting as an archive of affects, I first provide critical details on the ethical relations produced with/in the museum; made possible by progressive leadership that is underpinned by a preparedness to test what the university and local community will accept as ethical practice in a human pathology museum.

Ethical relations. Given that the museum collection consists primarily of tissue from deceased donors, the moral and ethical dimensions of the museum are a constant consideration. New teaching programs (and research such as this) continue to be assessed on a case-by-case basis by the human ethics committee of the museum's host university before they may take place – especially as the museum moves to make its unique collection relevant to increasingly wider circles of audiences (therefore becoming increasingly connected, purposeful and justifying funding). 'Ethics' practised thus gets conflated with notions of morality and devices that enforce a predetermined moral code (such as human ethics committee approvals and policy governing human tissue samples). Interestingly, the morality aspect of the human pathology museum's collection has made its moral implications critical to its governance, outweighing other political or economic forces in play. This has meant that the museum has not (to date) needed to 'sell out' in a bid to entertain (edutain?). The museum director (Derek) is critically aware that any program that positions the museum in the realms of 'edutainment' or 'dark tourism' would be deeply disrespectful, and "make a farce out of the stuff that's there".

However, if you take up a Spinozist inspired Deleuzian line (as I have done in this research), ethics is quite distinct from morality and is instead more an ethology "composed of fast and slow speeds, of capacities of affecting and being affected" (G. Lloyd, 1996, p. 134). This means taking an approach that emphasises "generation, vital forces and [rising] natality" (Braidotti, 2009, p. 44) – referred to as an affirmative ethics. An affirmative ethics recasts ethics as the articulation of "a non-moralistic consciousness" (G. Lloyd, 1996, p. 134) that is concerned with "relations of individual and collective capacities for affecting and being affected" (ibid, p. 18). No body or action is inherently good or bad because, as Spinoza (2018, p. 106) proposes, "Anything whatever can accidentally be a cause of joy, sadness or desire." Ethics thus becomes something quite different from the moral enforcement performed by a human 'ethics' committee, regulating the museum's participation in 'the experience economy' (Pine & Gilmore, 1999) by deciding whether or not a proposed program can run.

Instead, at a collective level affirmative ethics may be associated with the connectivity, purposefulness and relevance to its circles of community that the museum is actively striving to enhance through initiatives like its volunteer program, internships, and holiday programs like the *Zombie Apocalypse Survival Course* and *Brain Science*. In everyday practice, affirmative ethics involves activating and increasing a body's relational capacity (or potentials to affect and be affected). If the force (power) of a subject's action in the world fosters affirmative empowerment (increasing the capacity to affect and be affected by multiple more-than-human others), then 'ethical good' has been performed (Braidotti, 2009, p. 45). For example, if a diseased specimen acts to evoke a sense of shared vulnerability in a group of learners and this then increases the potential for all those involved in the encounter to affect and be affected in affirmative ways, then 'ethical good' has been performed. The ethical good of a pedagogy involving diseased specimens is therefore judged not on whether it remains within a predetermined moral boundary but on whether it empowers *all* those involved (e.g., learners and specimens and the museum).

An 'ethical line' is not something that is fixed or stable, nor something that is determined by the moral code of a university ethics committee. There is no definitive point at which an ethical line may be crossed. Instead, the notion of what is considered ethical practice is constantly negotiated in ongoing practices – producing *drift*⁶⁰ in recurring patterns of ethical relations. Historically, this human pathology museum and others like it have been closed to the public. However, with increasingly progressive leaders at the helm it has gradually (tentatively?) manoeuvred itself into the position of being the only publicly accessible human pathology museum in the country, with primary-school-aged children and their families regularly frequenting the museum's holiday programs. The museum director (Derek) describes how the museum evolved into its current incarnation:

I started at a time when this was one of the first types of museums of this kind open to the public. It has an Act of Parliament that oversees museums like this and so there was a lot of tentativeness. All it takes is a complaint you know, and we haven't had any but we've gone through a couple of years of that [tentativeness]. Then all that process had been done and we were open. It was kind of, let's experiment where the boundaries are.

The absence of complaints becomes an important indicator that the shift in museum practice is matched by community and stakeholder sentiment around moral conduct involving educational use of human tissue. Increasing access to the museum by the public recognises

⁶⁰ The line of drift is an important point that I return to in Map Fragments VIII and IX.

death and disease as events that affect all community members regardless of age and professional status. Making the collection (and death) everybody's business (not just the business of university academics and medical professionals) removes secrecy surrounding the material practices of death (and disease) and begins to reconfigure the museum as a site that cultivates conditions of possibility: that is, as a pedagogical site that performs ethical good through the affirmative production of conditions that augment the capacity of learners to "act in the world in a productive manner" (Braidotti, 2009, p. 57). The educational programs run by the museum (e.g., the zombie program) create conditions that move what is often seen as negative (stagnant) death and morbidity relations towards affirmation (vitality),⁶¹ cultivating an openness about death and disease that affords individuals the potential to think-do death and disease in productive ways.

Over time, the broadening participation in museum practices is becoming accepted, stabilising into a 'new normal' pattern of relations. While this threatens the protective function of the morally bound university ethics, it also creates an opening for Derek and his team to seek out where the boundaries (or powerful borderlands?) now lie. With the loosening of moral constraints (by continual testing of what the university ethics committee and wider community will accept and gradually destabilising the established 'moral code'), they ask what *more* can the collection now do? And how will the collection live on into the future in ethically affirmative ways? Asking these questions allows the museum staff to experiment with how to assemble a vital pedagogy that works not only with specialist 'medico' audiences but also with children, families, school groups and their teachers in a shared space of vulnerability.

Derek, ex-science practitioner, senses the potential of what has been set in motion and continues to steer the museum into the frontier of human pathology museum practice in a spirit of collectivity, community building and collaboration, resisting forces that intensify individualism (Davies, 2018). When the museum puts this into action (as with the zombie program) it enacts a pedagogy that undoes learners and learning environments as discrete entities – creating the conditions for learners, learning environments, biomedical technologies, specimens, discourses of disease, and knowledge practices to be re-done or recomposed. And as the human pathology museum begins to establish new ethical and

⁶¹ Affectivity is inextricably connected to an ethics of affirmation. The affective force of ethical practice activates (or deactivates) and increases (or decreases) a body's relational capacity. The affirmative production of conditions for learning intensely is a result of activating generative affective flows (lines). Affect, and by extension affective practice, thus becomes central to ethical modes of relation that, in an educational context, work to strengthen and enhance the affective capacity of bodyminds. I argue that ethics conceived thus is a dynamic that is deeply entangled in the affectivities that produce and are produced in pedagogic practices.

pedagogic practices which paradoxically align with a politics of life, “a relentlessly generative force” (Braidotti, 2009, p. 44), it also begins to challenge traditional notions of archival practice. But as with any scientific process, the results are not always immediately successful. In fact, public programs such as *Brain Science* are built out of several failed attempts to connect innovations in prosthetic technology with the museum collection and robotics.

Becoming an archive of affects.⁶² An encounter with the museum is a curiously embodied experience of disembodiment. It is also an encounter with trauma. It is precisely through a series of traumatic bodily events (disease, pain, diagnosis, treatment, more disease, more pain, more treatment, death, autopsy, donation of body to science) that many specimens become disembodied, enter the collection, and then become re-embodied as an archive (or re-embodied in archiving practice?) – an archive-body made up in part by entanglements of medical notes and fleshy bits donated over a long period of time. Trauma becomes a relation (a participant?) in the archival practices of the museum. Now trauma (and its associated affects) is no longer a feeling that belongs to individual bodies; rather, it circulates in the material practices of the museum archive. Trauma thus becomes depathologised *and* deindividualised, set free from its attachment to pathology *and* human bodies, not in need of a cure.

This is significant because, as Cvetkovich (2003) points out, adopting a depathologising approach to thinking with trauma “opens up possibilities for understanding traumatic feelings not as a medical problem in search of a cure but as felt experiences that can be mobilized in a range of directions” (p. 47), including pedagogic ones. Likewise, adopting a deindividualised approach to thinking with trauma as an affective intensity is also generative of bodily responses ‘that can be mobilized in a range of directions’ (ibid). Trauma (in a depathologised and deindividualised sense) becomes an entry point for reconceptualising archives such as the pathology museum not as a repository of inert specimens and fixed case histories but as a vital archive of feelings and emotions “which are encoded not only in the content of the texts [or collections] themselves but in the practices that surround their production and reception” (Cvetkovich, 2003, p. 7).

Cvetkovich’s (2003) associated concept of ‘an archive of *feelings*’ best translates in this dataview as ‘an archive of *affects*’. Changing ‘feelings’ to ‘affects’ is not a complete reconceptualisation of Cvetkovich’s archive of feelings but more like a re-alignment and refinement of the concept in light of subsequent theoretical developments in affect theory.

⁶² The concept of the museum as an archive of affects is derived from Cvetkovich’s scholarship related to queer archives of feeling (see Carland & Cvetkovich, 2013; Cvetkovich, 2003), as previously discussed in Map Fragment II.

Thinking with an archive of affect prevents the conflation of affect with emotion, as is often the case in Cvetokovich's work, and provides a theoretical basis for the move to foreground events in archiving practice. Decoupling trauma from (human) feeling not only provides for a depathologised understanding of trauma as a felt experience but also allows for a deindividualised understanding of trauma as an affective force.

It also makes available the conceptual tools necessary to perform a fine-grained analysis of a pedagogy of affect, in practice, while paying due respect to its queer theory lineage. The concept of an archive of affects is particularly useful for making sense of data from this site – specifically for coming to understand how the *Zombie Apocalypse Survival Course* transformed a middle-aged, 'fusty lab-chic' museum space into an *innovating* learning environment (not *innovative* learning environment) – which, I argue, is achieved by conceptualising it as an archive of affect. Observations during fieldwork indicated that visitors to the museum who engaged with the zombie program spent at least two hours in the museum. This was true whether visitors had come with the intention of doing the program or not (for example if they were family members of a zombie participant or if they had come to see the permanent exhibit but had gotten caught up in the program by accident). Conversely, visitors who only came to the permanent exhibition *Know Your Enemy* could spend as little as 10 minutes in the museum, despite having paid a similar entry fee to the survival course participants. What is particularly interesting about this observation is that visitors entering the body of the museum to *do* the survival course were in exactly the same physical space (sometimes at the same time) as those who entered to *see* the permanent exhibition *Know Your Enemy*. At the same time, neither group of audiences was accompanied by a human-educator and both groups had full access to the museum exhibits and workstations – including those designed specifically for the zombie-scientists in training. The only difference in experience on offer was the short Emergency Broadcast video shown to survival course participants on arrival at the museum.

So what did the *Zombie Apocalypse Survival Course* do that the permanent exhibit did not? I suggest that the permanent exhibit is located in archiving practices concerned with documenting and preserving things-past, while the *Zombie Apocalypse Survival Course* is more concerned with the affectivity of things-past-present-future – as they pulse with the material vitality of the undead. The Emergency Broadcast video acts to 'liberate' the collection from its official (historical) function of preservation and documentation (Springgay & Truman, 2016, p. 10). A multiplicity is produced. During the survival course, the museum as an archive of affects no longer acts as a repository of inert human body parts that teach about what has

happened in the past (where states of being are the focus). Instead, it becomes a propositional space that invites a (re)activation of affective flows from past events in new, future-orientated ways (becoming is the focus). The museum is free to develop programs that arguably do justice to the trauma-infused events they leverage off while (re)activating the affective force of said events in an inventive way. The *Zombie Apocalypse Survival Course* pedagogy can be said to transform the museum into an archive of affects. In this context, the medical heritage performed at the museum is no longer located in the past but becomes real, vital, living in the here-and-now. The survival course becomes a provocation that activates an existing fear and dread of life-changing (and life-ending) human disease (in this case zombiism, that is, a condition that involves humans displaying zombie-like traits) to assemble a pedagogy that moves bodyminds. And the museum acquires the “status of archive as a practice of fantasy made material” (Cvetkovich, 2003, p. 268).

Assembling a Pedagogy of the (Un)dead in an Archive of Affects



Figure 24. Keep Calm and Kill More Zombies signage and bloody child-sized hand prints.

The promise and threat (fear and hope) of surviving the zombie apocalypse reaches out, grabs the attention of potential audiences, and opens up the museum to young people who might not usually visit due to the challenging nature of the collection. Derek tells me that the success of the program was driven by “capturing the enthusiasm” then “owning that idea and then [generating] that kind of ground swell of interest”. The museum lends itself to such an event, with the focus on zombies working with the collection to neatly collapse dichotomous categories of dead and alive by invoking the notion of the living dead or, as I choose to name

it, the (un)dead. This in turn invites thinking in posthuman terms by moving us beyond a Cartesian legacy of oppositional thought (O'Donnell, 2018), dissolving binary categories of healthy and diseased, living and dying. It does this by developing an understanding that, on a cellular level, human bodies are always assembled from 'living' and 'dead' matter including different types of cells, bacteria, viruses, food and faeces. Death becomes a matter of degree and is no longer the opposite of life. Our bodies will live on in processes of decomposition and re-membling (for example through practices of organ donation). By recognising the agency of things and the primacy of 'doings', much of what the *Zombie Apocalypse Survival Course* pedagogy does could be understood as aligning with posthuman educational practice.

The zombie program pedagogy unfolds through a sequence of staged encounters with more-than-human others, challenging assumptions that only human bodies can teach (and learn). As I go on to demonstrate, the material affects of these encounters form pedagogic swarms which generate the conditions for learner-bodies to engage in performative processes of becoming-zombie-scientist (and sometimes becoming-zombie). Pedagogy is predetermined and strongly attached to the two-hour event, the museum, the collection and mediating technologies. Yet the pedagogy bleeds into and draws from the experiences of the individuals attending. There is notable permeability between past experiences and the present encounter with the museum for people who have experienced disease or medical procedures that materialise as specimens, artefacts and exhibits at the museum.

The survival course was developed in response to a wave of public interest in zombies following the release of *The Walking Dead* TV series (2010–present) and movies such as *World War Z* (2013). One survival course participant (Matt, 10) points out that it also connects with games such as *Plants vs Zombies* and even zombie characters who are “basically green versions of Steve” in the likes of *Minecraft*. Perhaps on a more sinister level the zombie apocalypse could be understood as enacting our present-day social context that Braidotti (2009) describes as a “political economy of negative passions” characterised by an “all-pervasive paranoia: the constant threat of the imminent disaster. From the environmental catastrophe to the terrorist attack, accidents are imminent and certain to materialise” (p. 42), maybe even as a zombie apocalypse. The survival course at the museum gained traction in 2015 amongst much media hype, garnering a whole year's worth of museum visitors in one month. Having exhausted its community audience base, it now only runs periodically in response to school and/or public demand.

The survival course pedagogy is based around the premise that there is scientific warrant for a possible epidemic of zombiism (or at least a disease that would leave individuals

displaying zombie-like traits). It introduces students to the science of human disease (pathology) by getting them to enact zombie science to survive an immanent outbreak of the disease. It is highly performative in its execution.

The pedagogy is ignited when survival course participants (soon to be scientists) are shuffled into a briefing room for a screening of an emergency broadcast that quickly establishes that there is ‘a current and catastrophic event’ unfolding at a biomedical research laboratory, quite possibly at the very university in which the museum is located. A zombie-causing pathogen has been accidentally released and the survival course participants enter a game-like scenario where they are on a quest to identify patient zero, who is amongst ten potential human sources of the zombie virus. The now zombie-scientists-in-training are given access to the medical assessments of the ten captured humans, associated specimens, equipment and relevant information at specially constructed workstations located within the body of the museum, becoming responsible for identifying the ‘zombie-like’ diseases from which nine of the suspects suffer, ultimately isolating the one who has actually become a zombie.

Pedagogic devices. Due to staffing constraints, the program is carefully designed to eliminate the need for a central human-teacher-body. The living human-teacher is notably absent from what might be described as a ‘de-peopled pedagogy’. Instead, it is distributed in and between all the bodies, things, discourses, spaces and affects caught up in the program on any given day. Pedagogic swarms emerge, move and disperse in mutually constitutive practices. The diseased human tissues take on an active role in a pedagogy of the (un)dead, demonstrating (amongst other things) what are often invisible bodily processes that are concealed by skin. The survival course is an immersive, experience-based program centred around ‘doing’ rather than ‘looking’, but that doesn’t stop the zombie-scientists from engaging with other displays in the museum, as shown by the following exchange during a research conversation with two zombie apocalypse survivors, Jess, 12 and Isabelle, 9:

Isabelle: I liked looking at the bones and things

Me-as-researcher: Yeah, why's that?

Isabelle: Because they were interesting to see what's really inside your body. They looked way different to what I thought they would.

Jess: Yeah, I thought the bones would be a really, really dark brown but they're actually not.

Me-as-researcher: They're quite light [in colour] aren't they?

Jess: Yeah.

Me-as-researcher: Yeah, so you were quite surprised by that?

Isabelle: I was surprised because they looked a bit furry. Because they had – I think they had bits of...

Jess: Meat

Participants are free to choose how they do the survival quest (play the game). This gives it a very student-led feel and opens up the museum to unscripted, explorative learning experiences. All the survival course participants who took part in the study were also first-time visitors to the museum, so they did not know what to expect to see or do. Surprise interactions between museum exhibits, participant-bodies, ideas, spaces and things are part of the unpredictability that can (expectedly) accompany a distributed pedagogy.

Yet although the zombie-scientists are free to choose where and how they move around the museum, and whether to complete the quest at all, everyone I observed completed the program more or less how it was intended. While each group of participants engaged with the collection in unplanned ways, the reality was that the pedagogy (and the learning) was predictable too (unfolded in recurring patterns of relations). The numerous groups taking part all displayed similar patterns of movement in the museum, spent similar time actively engaged in activities (although sequence of activities varied), and self-checked their findings using a computer in the laboratory for this purpose – going back to the body of the museum to seek further information required to resolve any anomalies in the answers. Swarms of pedagogy thus assembled in predictable ways.

I would suggest that this is to do with the strategies used not only to structure the program and manoeuvre the zombie-scientists' bodies through the quest in a predetermined fashion, but also to draw in (encourage *intraaction* with?) more-than-human participants such as the specimens and their case histories, horror movie narratives, historical narratives, medical science technologies, and even Halloween costumes (still at home) that might have been worn. Following Singleton and Law (2013), I understand a pedagogic device as a purposeful "*set of implicit and explicit strategies that work more or less repetitively to order, sort, define and arrange a heterogeneous but relatively discrete social and material field*" (emphasis added, p. 260), with that 'relatively discrete social material field' being the human pathology museum in this instance. The pedagogy of the *Zombie Apocalypse Survival Course* is a device assembled in the enactment of explicit strategies that incorporate a number of constituent parts (Figure 25). These include:

- the Emergency Broadcast
- the built environment
- zombie documentaries explaining the basics of zombie science
- survival booklet and pencil
- one central activity station (home base)
- ten activity stations assembled around the museum with information, teaching objects, microscopes, specimens, all linking directly to the case history of a potential 'patient zero' (who has been exposed to the zombie serum)
- props and decorations
- computer to process results of the zombie science
- survival kit scavenger hunt items hidden amongst the displays.



Figure 25. A montage showing a selection of the constituent parts of the zombie pedagogic assemblage

I now go on to drill into affect as it emerges in the practices⁶³ that are embedded in the sets of strategies that produce swarms and form the pedagogy of the survival course, as connected to the material artefacts and technologies listed above. The second half of this cartography focuses on how affect, in museum practice, can be seen to activate lines (flows) of promise and threat, enticement and dread, morbidity and fascination, humour and hypochondria: in other words, affects' effects (pedagogic and otherwise, e.g., identity effects). These are infused with explicit pedagogic strategies such as the staging of atmosphere and the enticement of dread, including tapping into horror narratives and strategies such as zombie and zombie-scientist performances.

Staging atmosphere, activating bodyminds. The museum's 'fusty lab-chic' décor, the windowless climate-controlled physical space, the 'real' collection of human body parts, and the displays of historic medical instruments work together to produce an atmosphere that is 'ripe' for staging the *Zombie Apocalypse Survival Course*. Little more needs to be added to prepare the scene – just a few items that (ironically?) add a fictional quality to the event which together work to lighten the atmosphere, introduce an element of play, and cue participants for the survival quest (game) they are entering into. These items include zombie Halloween props including random limbs, axes, blood spatters, hand prints, a costume for the resident skeleton, and emergency tape used to cordon off bio-hazardous areas. There is an air of anticipation as child-bodies and accompanying adult-bodies assemble (are captured/territorialised?) at the start of the zombie program in a congested media room, with chairs to sit on (or hide under) and closed door (to protect? Imprison? Or provide escape?). At this point the countdown to the Emergency Broadcast video commences (in the style of a film leader – Figure 26).



Figure 26. *Emergency Broadcast stills*

⁶³ It might be recalled that the concept of affect in practice, in the context of this study, is not derived from a social practice lineage (Reckwitz, 2002, 2012; Wetherell, 2012, 2013) but is instead developed from Singleton and Law's (2013) Deleuzian inspired understanding of practice as the repetition of similar patterns of relations.

Reception crackles in and out, presumably due to crisis-induced technical difficulties. An official sounding male voice breaks through the poor reception and the video feed stabilises shortly thereafter. “This is an emergency broadcast via the emergency broadcast system. This message is being broadcast on all frequencies to warn of a current and catastrophic event”. The broadcast then cuts to scenes of the zombie epidemic sweeping through the city (Figure 27), explaining that several zombie-like pathogens have been released from government infectious disease laboratories, including one military-grade zombie serum.

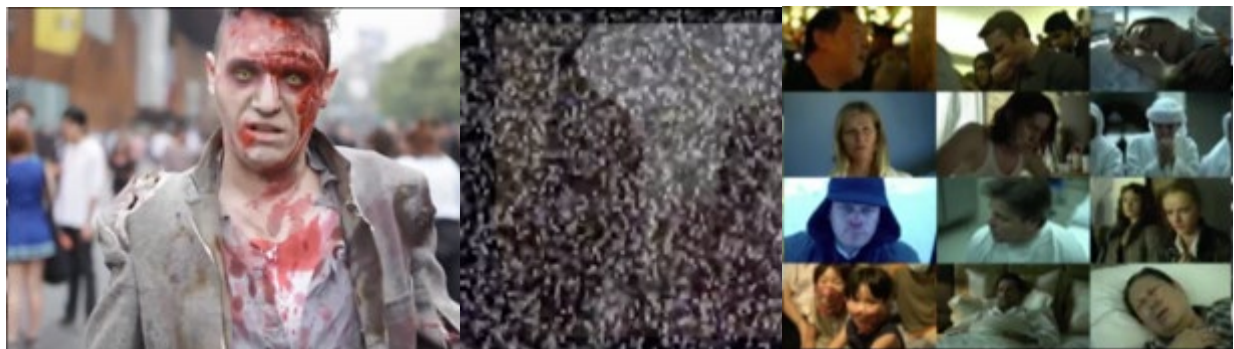


Figure 27. Stills from Emergency Broadcast showing the spread of the zombie epidemic

The progression of symptoms in infected individuals is described, and then the broadcaster announces, “We have just received a message that there are a number of people trapped in the Museum of Human Disease. If you are receiving this message, we urge you to stay where you are at this time”. It is then explained that ten symptomatic individuals have been taken into custody and that help from the people trapped in the museum is needed to figure out which diseases have afflicted the captured individuals. The rules of the ‘game’ are thus explained and the survival quest begins. The survival quest participants are promised the case files of the ten symptomatic individuals so they can figure out what to do next. They are instructed to use museum resources to assist the investigation, starting with the research room. The broadcast ends with a desperate plea of “You must hurry!” before fading to visual and audio static.

What does the Emergency Broadcast do? Launching the survival course with an emergency broadcast is a key teleological strategy that interrupts participant-bodies’ thoughts and actions as they enter the museum, propelling them into the museum’s staging of the zombie apocalypse scenario and producing an immanent encounter with disease science. They are (unexpectedly) detained in a media room outside the main body of the museum for a short time before the broadcast begins. Affective intensities are heightened by anticipation of what is to come as bodies assemble, waiting (but not still) for everyone to arrive and the session to

begin (What's happening? *You'll see*. Do we get to go in the actual museum? Yes. Will we see dead people? Yes – *well, bits of them anyway*). The announcement of the release of a force of evil (military-grade zombie serum) accompanied by footage of the 'current and catastrophic event' further mobilises affective intensities already circulating in and between bodies. An atmosphere of unreal reality – that is, a common aesthetic associated with the zombie genres in film, games and literature – is further cultivated. Anticipation, fear, intrigue, unknowing, and (hopefully) a desire to know are seeded but bodyminds are reminded by the less convincing zombie performances and Halloween props that this is not real (or is it?). In true horror genre style, the slightly under-equipped survival course participants must ensure that the forces of good prevail by using the resources of the museum and all that lives within it. The rules of the participants' world are temporarily suspended and replaced with the rules of an immersive game-like experience (survival quest) that requires a scientific mystery to be solved.

Bodies and affects exit the Emergency Broadcast screening room and are funnelled through the foyer and despatched into the body of the museum, where they disperse, encounter more-than-human bodies and body parts, and circulate freely as individuals or in clusters, joining other clusters and perhaps breaking away again. Bodyminds are propelled, slowed, manoeuvred, pulled into contemplative moments by encounters with technologies, other bodies and body parts, activity stations, and case histories. While they are free to roam (although under instruction to "stay where you are") there is a simple purpose guiding the survival course participants' decisions and movements – to use the science of human disease to differentiate those suffering zombie-like diseases from 'patient zero' (who has been exposed to the zombie serum) and thus save us all from impending doom.

The 'staging' of the zombie apocalypse event is a key strategy of the zombie pedagogy that orders pedagogic relations in specific ways. The strategy extends from the practices of the purpose-made Emergency Broadcast, the built environment, the assembling bodies, and time itself, which in their inter and *intra*actions form a pattern of relations which recurs with a high level of predictability each time the program is launched. This strategy defines the program, gives the participants a sense of purpose, charges the atmosphere, activates bodyminds and sets in motion a sequence of encounters in which other strategies are then put to work. This 'staging' strategy is repeated each day, working to pattern the relations in recurrent ways, becoming an indispensable constituent of the zombie program pedagogy (framed here as a pedagogic device). However, the way it works is always contingent on the unique inter and *intra*actions of the specific group of participants, technology, ideas and even the weather on

the day. The program is run and rerun, producing a new pattern of relations that is at once similar to and different from the day before (repetition and difference in action).

The enticement of dread. The deliberate activation of a line of enticement-and-dread is another strategy that patterns the relations of the zombie pedagogy. Neuroscientists have found that images such as mutilated human bodies and crawling insects can provoke bodily responses such as fear and disgust along with interest and curiosity, producing what they call ‘morbid fascination’ (Oosterwijk, Lindquist, Adebayo, & Barrett, 2016). Box office successes of the horror film industry are but one indication of the widespread appeal of the morbidly fascinating, or similarly, as Derek refers to it in our interview, “A combination of dread and fascination”. So the program’s appeal is enhanced by a dreadful enticement. And while the horror associated with zombies is fantasy, in the museum as an archive of affects, the affective force of this horror-fantasy is made material. Affective intensities are accentuated and emotional responses of bodyminds enhanced (sometimes a little too much) in readiness to endure the possible danger that is about to ensue. In the same moment, the accumulative affects of curiosity, fascination and interest are key to building the capacity of participating zombie-scientist-bodies to endure the accompanying dreadful affects and transform any blockage associated with this relation into a generative force (performing an ethics of affirmation). In so doing, the program could be said to be creating the conditions for some participants to rehearse enduring difficult circumstances in a low-risk context. The pedagogic potential for capacity building (e.g., building endurance and perseverance) in situated practice is significant.

Yet the intensity of dread did threaten to overwhelm some of the younger survival course participants (dominating the dread-enticement relation). Matt (10) checked under the chairs for zombies while the Emergency Broadcast was on. He tells me he was too frightened to come into the museum after the Emergency Broadcast video:

Because the video was a bit scary and then when we went out there was no one there.

There was like no one there. I wanted to go out [of the museum] and then my mum saw like the reception woman come back again and then that convinced me to go in.

A quiet morning at the museum (correlating with the fine weather outside) and the de-peopling of the pedagogy gave him the feeling “there was no one there ... like no one there”. The absence of other ‘living’ human bodies became part of the enactment of the zombie apocalypse, making it a little too convincing, threatening to overwhelm Matt (and others like him). For these boys and girls, it was especially important to have other people as well as

practices such as zombie performances, playing-zombie with Halloween stage props, Hollywood narratives of the promising zombie apocalypse scientist, injecting humour. These softened the dread (diluted difficult affects) and enabled these children to cross the threshold from the Emergency Broadcast room to the body of the museum, to actively engage in the survival quest and overcome the threat of the zombie apocalypse. I make an inference that the children experienced sticking points and stuck places, and breaking through the threshold to become unstuck. The threat of dread taking over the experience never fully left them, as the following snippet taken from a research conversation with Jess, Isabelle and Tom shows:

[Jess interrupts the conversation, suddenly changing the subject]

Jess: Yeah, I watched, well when I went to America there was a show on, it was zombies and it was like a Star Wars zombie thing. It was really creepy. And people – there were zombies and this guy went in with dynamite and stuff and he blew it up and he was in the truck, he was a normal man and then there were the girls that saved the people on the other side of the fence from the zombies. And [Jess leans in close, whispering now] I hope I don't get a nightmare tonight.

I hoped Jess didn't get a nightmare either. Her fear (hope?) is not misplaced, since my own experience tells me that parts of the museum have a funny habit of returning unbidden after a visit. Isabelle tells me she won't get a nightmare because "I have a toy that I sleep with when I get scared", but I'm not entirely sure it will be enough. Previous 'creepy' zombie experiences have been reactivated and entered into today's survival course event which, even without such intrusions, was overwhelming for these children at times. Jess explains how, during the Emergency Broadcast, "I stood facing the back with my hands in my ears", but nevertheless she still did the survival quest with what looked like a lot of enthusiasm, using the survival booklet to guide her. I noticed she was very focussed on filling out the booklet and when I asked her what she liked about the course she told me, "Well, I liked writing down things and trying to find out what happened to people". Jess and her cousin Isabelle are also eager to tell me about their experience of feeling the bloody handprints on the doors and walls. They felt like "sticky jelly stuff", not what they expected at all, and "that was really fun".

Zombie performances. The game-like scenario of a survival quest produces a safety zone (fantasy space) in which the participants can safely engage with the museum collection, co-creating the zombie apocalypse event in an environment that is less threatening than perhaps it would be when coming to the museum without the program acting as a pedagogic device to mediate (order?) the experience. By playing the role of the zombie-scientists, survival course participants are afforded a sense of purpose in the museum while 'trying out'

how practising human disease science feels. The fantasy game element means participants also know that there is a very real chance they will emerge victorious from the quest (a line of promise?), and failing that, alive (if you die in a game you are not really dead). This doesn't, however, detract from the educational value of the program – all zombie apocalypse survivors that I recorded research conversations with demonstrated a surprising depth of understanding about disease science, with this understanding being developed in the two hours or so that they were there. Local schools also regularly request a rerun of the program because of the value of the learning that goes on.

The full immersion of bodyminds in the zombie apocalypse scenario also performs an ethical function by collapsing the division between audience (spectating human subjects) and specimens (dead objects). Zombie-scientists are no longer learning *about* a pre-existing world (out there) represented by an archive of inert specimens and fixed histories. They instead enter a game-like scenario where they are 'becoming with' the museum as an archive of affects. In so doing, the agency and vitality of the museum and its constituent parts are implicitly acknowledged. Zombie-scientists emerge *with* the other entities in mutually constitutive relations. That is, zombie-scientists, zombies, specimens, case histories, technologies, zombie narratives and science discourse are all constituted by, and constitutive of, the pedagogic event. And this is how the performative and game-like nature of the zombie program (perhaps counterintuitively) maintains an accountability to the more-than-human others involved (e.g., specimens, zombie-scientists, families of specimen donors). Rather than threatening to turn the museum into a site of edutainment and a commodity in the experience economy, it disrupts the power relation between knowing human subjects and knowable brute objects. The threat of reducing the specimens to objects (without the power to affect) is mitigated. This is because the performative and game-like teleological strategies that order the zombie pedagogic assemblage challenge the politics of 'othering' inhuman matter. The zombie-scientists routinely become inhuman others (zombies) and augment themselves with technologies (microscope, computer, false limbs, props). The zombie program thus engages performative practices that prevent participants using the museum to 'rubberneck', 'make a farce out of what's there', or become a voyeur of unfortunate events that happened to some 'other' unlucky individual.

At the same time it starts to break down assumptions about who becomes diseased, how individuals become diseased, and what becomes of the diseased – pushing participants in the zombie program and museum audiences more generally into a space that actively works to establish a complex understanding of the ethical, pathological, medical, social, personal,

environmental and material contingencies of disease assemblages that leverage off our collective vulnerability. “You know”, Derek says, “anyone could catch this disease and become a zombie”. A military-grade zombie serum is accidentally released by a government laboratory and it does not discriminate amongst host bodies along the conventional lines of lifestyle choices, age, class, race, ethnicity, gender, or sex. Individuals cannot be blamed for becoming infected with the zombie pathogen. Like trauma in the museum as archive of affects, disease is also deindividualised and the feeling “that ‘we’ are all in *this* together” (original emphasis, Braidotti, 2009, p. 48) is cultivated. This gives the zombie program another ethical edge – promoting what Braidotti identifies as “a renewed claim to community and belonging” (2009, p. 48).

The indiscriminate affects of the ‘military-grade zombie serum’ could be said to have flow-on effects with some of the participants, who, not content with enacting the zombie-scientist role, reinvented the rules of the game as they went along – expressing a desire to become different characters and try out different positionalities – becoming-dead by enacting death scenes and lying ‘dead’ on the museum floor and ultimately becoming-undead (becoming-zombie). Cousins Jess and Isabelle wished they had come dressed as zombies and lamented their decision not to. Ryan, another primary-school-aged boy (who I observed but didn’t interview), did not become-zombie-scientist at all until he had become-zombie first. Dressed up in the resident skeleton’s costume and holding a bloody meat cleaver, he calls out “who wants to have their head chopped off? Chop chop chop!” Later, he enjoyed scaring his family members with the artificial zombie limbs he had found on the central activity table – laughing at his sisters when they jumped with fright. His scare tactics successfully dissipated any lingering negative affects (for himself anyway). Likewise, Matt (the boy who didn’t want to come in because ‘there was like no one there’) didn’t fully relax until he had begun to play with some of the Halloween props, becoming-zombie also. The following excerpt from my fieldnotes describes this:

[Matt and his parent] return to the central activity table repeatedly. Each time Matt picks up one of the upper body [zombie] limbs he goes “hi five” with the hand. Then he eventually gets the leg and lies on the floor pretending it has broken off. His parent comments “you’re not frightened any more”. A little girl walks past, and Matt offers the zombie hand out for her to shake. He then goes back to filling out the zombie workbook.

Matt was then free (freed by the props?) to engage with the teaching models at the activity stations, disassembling and reassembling them and pretending to eat the organs (Figure 28). Since many of the difficult affects in the *disease science learning assemblage* do not translate

into the *zombie learning assemblage*, Matt is afforded an opportunity to have fun and play with plastic replicas of ‘real’ human organs, mediating the more difficult knowledges that a disease science learning assemblage embodies. However, while the difficult affects are diluted to a point where they are tolerable for the likes of Matt (and Jess and Isabelle and Ryan and ...), the complexity and depth of the science of human disease is threatened by the act of translation. This, I argue, is a necessary trade-off for younger participants who would otherwise risk being overwhelmed and would likely not be able to enter a disease science learning assemblage at all. Matt had not seen real human organs before and thought they were “Eew” when I asked him. But he was quite keen on the plastic replicas of the specimens in the museum. He talks about it with me in our research conversation:

Matt: There was like someone there, there was like a skull and the skull has, like here, the skull was off and you could see the brain and you could take it out in pieces so you could like take it apart.

Parent: So you see what it looks like inside

Matt: Yeah

Parent: But it's plastic so it's ok to touch plastic

Me-as-researcher: So you took it apart?

Matt: Yeah

Me-as-researcher: And put it back together

Matt: Yeah, and then put it back in the skull

The plastic teaching model mediates Matt’s interaction with ‘real’ brain specimens which he found difficult to engage with. It enables him to come to know the anatomical structure of the specimen by pulling it apart and putting it back together like a puzzle. Not scary at all. The brain then participates in a zombie performance with Matt, who is so pleased that he asks his parent to take a photograph (Figure 28), capturing the moment.



Figure 28. Matt as zombie, about to eat lunch. Photo shared by Matt's parent.

Matt, zombies and brains entangle in a performance that buffers Matt from the (un)real horror of the zombie apocalypse and the possible trauma of encountering 'real' brain specimens. In the space of two hours, Matt has participated in a series of performative events that are contingent on the dynamic of fear-and-hope, promise-and-threat – checking for zombies who may be hiding under the chairs in the Emergency Broadcast room (performing fear), refusing to enter the body of the museum (performing resistance), changing his mind (in response to the promise activated by 'the reception woman's' encouragement), becoming-zombie-scientist and finally becoming-zombie (performing victory over fear). Afterwards, Matt's parent buys him a black skull t-shirt (a memento). By participating in the zombie program, becoming-zombie and becoming-zombie-scientist, Matt has taken up the opportunity to build capacity of his bodymind to endure and become resilient. Matt's learning was just as much about reworking his relation to fear as it was about doing disease science. With support from his parent, 'the reception woman', humour, and performative pedagogic strategies, Matt was able to transform stuck relations in the direction of affirmative relations, "putting the motion back into e-motion" (Braidotti, 2009, p. 50). In this instance the zombie pedagogy has performed an ethical good because it has enhanced and strengthened the learner's capacity to inter and *intra*act with a range of more-than-human others while making fear a less dominant relation, loosening its hold. This is arguably an important (and ethical)

function of the museum as an archive of affects, because traumatic disease events do happen and there is a measure of unpredictability associated with surviving them. Providing a less threatening environment in which participants build the capacity (learn) to shift or transform negative relations has potentially powerful outcomes.

Zombie narratives. Each participant and each group of participants performs zombie apocalypse survival differently, bringing different experiences with them and making different decisions during the event. However, observing multiple groups participating in the course over a week revealed a recurring pattern in how the performances unfolded. As I go on to discuss, this pattern follows the strong narrative thread running through the program which unfolds in relation to recurring practices of storying the (un)dead in film, television, literature and video games. This forms another strategy that is constitutive of, and constituted by, the zombie program pedagogy. The survival course's appeal (pull) is enhanced by its association with popular culture zombie assemblages, replete with established configurations of the zombie narrative. Activating a zombie narrative locates the pedagogy within the familiar while again insulating participants from the trauma (excessive dread) of the immanent experience. Derek identifies the "idea of the overarching narrative" as one of the key strengths of the program. The survival course participants get caught up in a familiar Hollywood horror narrative – trapped in a confined space yet, as luck would have it, still with access to lab equipment and technology necessary to fulfil the quest. Derek explains:

There's already a story there you know. That whole idea that there's a bundle of people in the movie. You know that some are going to die, some are going to turn into zombies, so you know [you will be] working out which one's going to be which, watching the movie and going 'oh darn I got it wrong' ... and they all have the scientist that's trying to find the cure and they have the scientist that caused it all and they have um the red herring and all of those sorts of things so it's all kind of there you know.

And he's right. A quick look at the plot of zombie movie *I Am Legend* (2007) featuring Will Smith (adapted from the novel of the same title, Matheson, 1954), and a similar (but different) narrative structure to what Derek describes above becomes apparent, starting with the disease outbreak, scientist fighting to come up with a cure against the odds, death and destruction, getting the cure to the survivors with great personal sacrifice – his life and all he holds dear, including his dog. This narrative loosely correlates with the more simplified version in play at the museum (minus the death of the family pet). In horror video-game style (which also owes much to cinema narrative devices), the *Zombie Apocalypse Survival Course* leaves much of the narrative unexplained, making room for imaginative bodyminds to fill in the blanks (the

unknown can be much scarier than the known). The affective force of the narrative is amplified by the absence of detail and, because the zombie apocalypse scenario plays out in a plausible context of a university museum (in close proximity to biomedical research laboratories), the ‘reality’ of the event is emphasised (although we all know it is fictional, isn’t it?).

Derek emphasises the importance of a story – wrapping a narrative around the pedagogy – several times in our interview. He says, “The success of the zombie was starting with the zombie [narrative] and thinking about how the science would feed into that - start with the narrative”. In other words, lead the program design with the narrative, not the collection. This is possibly the key to activating the collection as an archive of affects during the survival course. At the very least, it is one of the key differences between the zombie programs and the other programs at the museum. Derek explains further:

*I think because we are, because when you're trying to address [the school] curriculum which is not particularly narrative in itself and is really quite piecemeal, I think in some ways you become ingrained with that thinking process and unless you really step outside that and give it the time that we did with the zombies to making, you know thinking about that idea, and, and, starting from a point that starts with a story. You know, zombies start with a story and how do you enlarge that story to fit in with your visual stuff as well. And so **I think, you know, taking the people out [of pedagogy] probably only works if what it has is a really strong, engaging, narrative idea.***

Derek attributes the success of pedagogy without a human-teacher-body as facilitator to “a really strong, engaging, narrative idea”. The emphasis on the strategy of weaving a strong narrative through the pedagogic device (in this case the zombie apocalypse) has links with Whitehead’s notion of the importance of storying to give individuals’ experience of events (sequences of events) continuity, in practice (Woodhouse, 2011). Noting the centrality of narrative in Whiteheadian thought, Woodhouse writes, “Stories begin with experience and are shot through with feeling. They inherit from the past and contribute to the future” (Farmer, as cited in Woodhouse, 2011, p. 222). At the museum, the zombie story acts to produce affective intensities that connect bodily emotions of participants (which in Whitehead’s philosophy reach out into the world as prehensions) and past, present and future events in and between bodies and things and spaces and ideas. The affects of a story (about zombies) provoke responses in participant-bodies, activating affective lines of promise and threat (fear and hope, enticement and dread, humour and hypochondria) that contribute to the survival course’s success. And so the story is arguably at the heart of the *Zombie Apocalypse Survival Course*,

becoming both pedagogic device *and* a device that activates the museum as an archive of affects.

Humour and hypochondria. I have now completed a circular movement by returning my attention to data introduced at the beginning of the cartography, namely Derek's comment that "if you don't have humour you're left with hypochondria". This comment is important because it is a materialisation of a dynamic of promise (humour) and threat (hypochondria) that is ever active in the museum. Laughter and humorous practice infuse much of what the museum does, doing important ethical work by supporting museum audience and survival course participants alike to transform the disease-anxiety relation into something more productive and less paralysing, for example by generating connections with fascination, curiosity and interest to produce a new dynamic of dreadful enticement or morbid fascination. I ask Derek directly about the role of humour in the educational practices of the museum. He responds with:

I think there's a degree to which it's kind of essential to allow people to stay in the space. It really is about how we cope with this.

So maintaining respect. This is a person. This is people, this is really serious, this is sad, this is tragic.

But we need to deal with it. You know, and part of that process of dealing with it is for most people, let's lighten the atmosphere a bit, you know. Other people can disconnect. Our medico-academic people sometimes have trouble understanding that there needs to be other ways of dealing with it because they have this ability to disconnect from the tragic um which is part of why they can do what they do. But it's not necessarily what everyone needs to do. Um so I think it's really important for that, I think it allows us to talk about or get kids thinking about things in a slightly different way...

Laughter (an 'in-the-moment' bodily response) and humour (affective strategies aiming to provoke humorous bodily responses) are different but linked affective practices that work and are worked in pedagogic ways. Humour is an essential part of museum practice; as Derek says, "It allows people to stay in the space ... [by] ... lightening the atmosphere" and helping to shift the extraordinary experience the museum generates into the realms of the everyday. There is a risk that audiences will disconnect (disengage) without the endurance and resilience that humour affords. It also provides an alternative bodily response to that of disconnecting by building the capacity of audience bodyminds to cope with (endure) the 'serious', 'sad' and 'tragic' affects circulating in and between bodies and things and ideas and stories in the museum.

Therefore, humour at the museum is actively encouraged and the laughter that accompanies much of the humour can be heard regularly. ‘Comic relief’ is built into the exhibitions by careful choice of audio-visual material and clever juxtapositions of texts, images and objects in the displays. During the zombie program, the affective intensity of the Emergency Broadcast was countered by comedy. Children were supported to ‘joke around’ through the provision of Halloween props and they were quick to explore their comic potential. In my fieldnotes, I note one such occasion (and many others like it):

The boy starts playing with the zombie limbs on the display table. He picks up a leg; “Mum is going to hate this”, he says to me, and smiles before walking off.

Humour is also infused into most interactions with museum staff, defusing the desire for uninitiated audiences (non ‘medico-academic people’) to detach from the affective intensities that are generated in confronting situations. Derek tells me:

In my presentation I say to our school visitors, I think while you're here most of you are going to laugh while you're in the museum about something um and that's alright because it's a way of dealing with being in what is a fairly confronting environment with a group of people that you probably don't want to get all emotional in front of so that's perfectly fine. I go on to talk about [inaudible] but remember somebody else is having a different experience so don't get carried away with that. But I think it is an important thing that allows everyone to stay, and if you don't [permit laughter] in that environment then they [audiences] don't stay very long. It's finding, especially with that set of specimens, it's finding the balance between comic relief and creating a farce out of the stuff that's there.

Laughter is also an alternative to expressing other (embarrassing?), less socially acceptable emotional responses, drawing attention to the laughing and deflecting attention from other bodily responses. This aligns with Stengel’s (2014) claim that laughter works to conceal as much as it reveals – suggesting that educators need to consider that it may belie fear, loss of control, vulnerability, anger, anxiety. “Laughter occurs unbeckoned in the face of the ‘comical’ and the ‘difficult’” (Zembylas, 2018b, p. 303); not only is it complex, it is also unpredictable, sometimes bursting out as if from nowhere in an act of what Stengel (2014) refers to as ‘blind discharge’. Laughter is an embodied marker of a ‘shift’, a movement, an opening, a cracking-up so as to open a pedagogical crack into which the astute practitioner can work, should they seize the opportunity. It is the cracking-up, the descent into the crack that may be indicated by laughter which provides a moment of opportunity for pedagogy to

respond in ways that enhance the capacity of learning bodyminds to produce, connect and invent.

The pedagogic force of humour (in particular, satire) can also be attributed to its transgressive qualities that challenge habituated ways of thinking and doing by challenging conventions, subverting sanctity and “inspiring novel thinking about emotionally difficult situations” (Zembylas, 2018b, p. 305). Satire in difficult circumstances such as when confronting human specimens, or similarly in Holocaust education, might risk being construed as ‘creating a farce out of the stuff that’s there’ because it “break[s] the norms” (Zembylas, 2018b, p. 303). Not only does humour disrupt assumptions about how to behave in the face of human disease (not a laughing matter), but humour that provokes a burst of collective laughter can be ‘profoundly equalising’ – common ground emerges in the embodied shared experience with the other bodies and things and ideas in the space. The specimens no longer dominate the audience-collection-pedagogy-space relations – their affective power is diminished (or dispersed?).

Derek: I don't think I'm overly funny but I have an immediate view of the world that may not make other people laugh but [bursts out laughing] occasionally it does.

A Rupture: Museum as a Space of Mourning

Before leaving the human pathology museum, I feel the need to attend to one last thing. It is (was?) a rupture in my fieldwork produced by an encounter with the guardian of a group of zombie apocalypse survivors. It doesn’t quite fit with the other data, but in a strange way it brings us back to the museum as an archive of affects, in particular the notion that encounters with mortality produce an archiving impulse – “the desire to collect objects not just to protect against death but in order to create practices of mourning” (Cvetkovich, 2003, p. 269). And this is the link to the following data-story, adapted from my research journal notes:

Wada is the grandmother of three Zombie Apocalypse Survival Course participants: Jess year 6, Isabelle year 3, and Joseph year 6. She wants to chat while her grandchildren do the program, explaining that they call her Wada (like Nona) as she sits with me. She then proceeds to tell me how her son (the father of Isabelle and Joseph) had recently died of cancer. It was diagnosed on Christmas Day and took 17 weeks for him to die. The museum has personal significance to her but because of her son's (their father's) recent death she didn't know if they would come in, so she didn't tell them where they were going beforehand. She is happy that they did – the two girls (Jess and Isabelle) have been especially industrious. Joseph not so much, but he enjoyed scaring his sister/cousins with the zombie limb. He thought it was very funny but the youngest (who didn't do the course) was afraid. After Jess, Isabelle and I had recorded a research conversation for this

study, Wada and I chatted again – she talks some more about her son and how she does yoga as a moving meditation to deal with his death. Her husband, she tells me, has not dealt with it. We chat some more and when I say goodbye Wada gives me a big hug and thanks me.

This data-story is an uncomfortable story. It is a sticky story. Not just because it is a story of a mother coming to terms with the untimely (tragic?) death of her son, but also because of the methodological implications (complications?) attached to it. I feel uneasy about the data. I consider ignoring the encounter and letting it rest, unrecorded, unspoken. The research project would still be done. But at what cost? This data is a small but powerful part of the research entanglement at the museum. When I listen to the recording of Jess leaning and whispering “I hope I don’t get a nightmare tonight”, I am deeply affected by what she is saying, how she is saying it, and how the sentiment flows in and out of Wada’s story (which is also Jess’ story). I really do hope she doesn’t get a nightmare either. The data sticks in the most uncomfortable sense of the word. But if I am to stick with the data (sticking it into the study), what am I to make of it?

Wada was committed to bringing her grandchildren to the museum ‘because it has personal significance’ due to her son’s death. Drawing on Bowman and Pezzullo’s (2009) work on the intersections of death, tourism and performance, I suggest that Wada’s visit to the museum was about getting close to death (or practices of death) and using the museum as a site in which to mourn ‘and deal with his death’ – not by outwardly expressing grief, but by becoming a spect-actor (Boal, 1985), an active participant in the death assemblage. She thus mobilises her bodymind in a process that activates the museum differently, arguably as an archive of affects in which she seeks to cultivate promising relations while transforming others that threaten to destroy (O’Donnell, 2018, p. 4). In this performative act of remembering (mourning? memorialising?), “death is not merely an event in our past [and] negotiating memory is not just about preserving history, but also about shaping the present and the future” (Bowman & Pezzullo, 2009, p. 194). Wada is thus performing the museum as an archive of affect. The affective intensity of her son and his death event is carried into the museum collection and forms a new living-dead assemblage, replete with future-orientated flow-on affects and effects. Wada has chosen to bring herself and her grandchildren to a space where she can continue to ‘deal with’ the trauma by enduring the pain (experiencing a mediated trauma?) in order to move towards new possibilities for relating in an ethical life. She is increasing her capacity to relate to other people, things, events and ideas, so she is learning at the museum too.

Summary

It is time now to depart from the human pathology museum and its collection of specimens and case histories which act through (and beyond) the trauma of disease in a multiplicity of archiving practices. In presenting this (partial, ongoing, becoming) cartography of the site, I wanted to show the complexity, multiplicity and affectivity of the museum, and how this produces, and is produced by, its unique educational practice. In so doing I presented an account of how, in the absence of human teachers, the museum's *Zombie Apocalypse Survival Course* works as a pedagogic device (Singleton & Law, 2013) that incorporates different affective practices as implicit strategies. I argue that these strategies function to simultaneously activate the museum as an archive of affects and assemble an ethically grounded pedagogy of the (un)dead that functions effectively without human-teacher-bodies to mediate the experience in the flesh. In this pedagogy of the (un)dead, the science of zombiism practices on participant-bodies and participant-bodies practise zombie science in continuous variations leading to the program being experienced in infinitely different combinations of relations. However, the sequencing of events through a strong narrative (re)produces specific patterns of relations, giving continuity to participants' experiences and a measure of predictability to the pedagogy. Each day the program runs, pedagogy assembles, moves and disperses in recurring (yet always different) patterns of relations (Deleuze 1994). Each day, the pedagogy of the zombie program activates the museum as an archive of affect anew, innovating learning on a daily basis. Zombies (and microscopes and 'fusty-chic' science labs) tell the larger story of disease, and the promises and threats of medical science which has the potential to cause a mass disease-led extinction event (and perhaps overcome it).

Next, we turn to a site that connects with the museum through its link with ethical practice and trauma. It is a high-performance combat sports club which, like the museum, becomes an archive of affects under certain conditions. Unlike the museum, it features an embodied pedagogy, centred around the highly refined bodywork of an athlete-coach.

Interlude: Red T-shirt

Topological coordinates: D6



Figure 29. Red T-shirt sound installation (Healy & Frencham, 2016b) exhibited in 'Creating Liminal Spaces' at the fifth annual Teacher As Practitioner Exhibition, studioFive.

Click to hear soundscape

Alternative access

<https://doi.org/10.26188/5cfob43c6997b>

“OUR ARTWORK emerges out of the intersection of art-making, research, teaching, and collegial practices. It is a collaboration between an artist- researcher (Sarah), a teacher educator- media practitioner (Mike), a taekwondo athlete, and a red t-shirt. The red t-shirt draws the collaborators together into an artist-teacher-media-taekwondo-athlete space that produces this mixed-media art. In so doing, the red t-shirt becomes the star of the physical manifestation of the work, its narrative, and its soundscape. We note that the soundscape is not merely a backdrop to the artwork but is integral to gaining an understanding of the t-shirt’s presence by projecting an atmosphere of the taekwondo world it inhabits. Meanwhile its narrative, narrated by the red t-shirt’s current owner (the taekwondo athlete), draws attention to the agentic nature of an often overlooked material object” (Healy & Frencham, 2016a, p. 36).

Map Fragment VI: Cartography of a Fight Club

Topological coordinates: C₃, D₃

Red T-shirt (Figure 29) emerged out of an arts-based encounter between a t-shirt, a taekwondo athlete, my colleague Mike Frencham (as teacher-artist) and myself (as researcher-teacher-artist). It was created for the 2016 Teacher As Practitioner exhibition⁶⁴ and was installed in a black-curtained booth where one could sit, contemplate and listen to the audio through headphones. Much like Tiffany Singh's *The Journey of a Million Miles* (Map Fragment VI), this artwork-datawork – or da(r)ta (Renold, 2018) – hybrid relies heavily on sound to tell a story and pull the audience into the taekwondo world. The red t-shirt drew us together to assemble a taekwondo soundscape that doubles as a data performance (a multiplicity). The hanging of the red t-shirt in the black-curtained booth makes it the star of the show, its materiality being further emphasised by its very slow movement and a theatrical upward-facing spotlight which alerts the eye to every snag and sign of wear in the low-cost polyester fabric. Taekwondo itself is a performative sport, with its associated ceremony and ritual becoming a form of cultural theatre. The Korean drumming in *Red T-shirt's* soundscape is a feature of opening ceremony performances that occur in Korea-based taekwondo competitions. Mixed with vocal 'kihaps' recorded in training, it enacts a call to arms.

Meanwhile, the t-shirt's story, narrated by its current 'owner' (Seth), attunes the audience to the agentic nature of an often overlooked material object imbued with affectivity – a team top. It is a story that touches on the hopeful yet gritty journey of an elite taekwondo athlete whose practice is always already caught up in those of international athletes, Australia's Olympic athletes and the structuring forces of the governing body, World Taekwondo.⁶⁵ Despite Australia being a taekwondo minnow, the young athletes know that "Australian team t-shirts are highly sought after, so we can usually secure a good trade", with Seth's idea of a good trade being to secure an item of team clothing from a representative of a dominant taekwondo nation such as Chinese Taipei. He explains that this was how he was able to return from the Korea Open International Taekwondo Championships as the proud

⁶⁴ The Teacher As Practitioner (TAP) exhibition, formerly known as the Teacher Artmaker Project, is a longitudinal research project based at Melbourne Graduate School of Education which supports graduates of the University of Melbourne's Master of Teaching degree to continue their disciplinary practice (e.g., art, science, music) and exhibit artefacts of that practice at an annual exhibition hosted at the Graduate School's UNESCO Observatory and award winning learning environment, studioFive.

⁶⁵ I return to the role of World Taekwondo in the taekwondo learning assemblage shortly, expanding on its relationship with coach and athlete practice.

recipient of Chinese Taipei's number one senior male athlete's red t-shirt, "still infused with the sweat and glory of its previous owner", or in another word, unwashed.

As Seth physically grew into the t-shirt, it acted variously as a memento (badge of honour?), inspiration and favourite training top. A couple of years after the t-shirt trade, it became instrumental in reacquainting the now-maturing Australian taekwondo athlete with the now-Chinese Taipei national coach. Seth tells us, "I turned up to training at my club wearing the prized red t-shirt (of course) and what do you know? The Chinese Taipei team was there! The Chinese Taipei coach recognised his old t-shirt instantly. And then he recognised me. During training he stood near me and gave me multiple coaching points – 'shuffle back' and 'off the front'". A reconnection was made. This reconnection was made possible because, unbeknownst to Seth at the time, the original trade of team tops at the Korean Open generated enduring relations between senior members of the Australian team and the Chinese Taipei team, resulting in their visit to Australia as part of Olympic preparations a couple of years later. Australian fighters are not subject to an age-limit like the Chinese Taipei fighter, who at 24, despite being the best in his country, is deemed too old to be on the national team. It is a tough sport – brutal – but he still invests in it as a coach, "passing on his skill and love of the game." So this is not only a story about a red t-shirt. It is also a story about becoming an elite taekwondo athlete whose practice is already caught up in those of international athletes and coaches. And it is also a story shot through with lines of hope and disappointment, sweat-bodies and stink-bodies, kihaps and drumming, athletes and coaches, and the Olympic dream (as illustrated in Figure 30 and Figure 31).



Figure 30. A young 'maniac' (beginner fighter) wearing fight gear over his pajamas waiting for the Australian Olympic Taekwondo athletes to compete (left). An Australian Taekwondo athlete on court at the Rio Olympics fulfilling her dream (right).



Figure 31. A screen shot of a post made by the club commenting on the pictures of coach and athlete.

Context

The Olympic version of taekwondo (pictured above) originated in the Korean peninsula. It is an assemblage of martial art practices from Japanese, Chinese and Korean traditions, known as the national sport of Korea, and is closely affiliated with World Taekwondo⁶⁶ and Kukkiwon. The latter entity, Kukkiwon, is at once a building, a specific geographical location in Seoul, a national organisation, and World Taekwondo headquarters. Taekwondo practice in Australia intersects Korean cultural and historical narratives. The now dominant Kukkiwon system of taekwondo was developed after the thirty-five-year Japanese occupation of Korea ended in 1945, becoming adopted by the Korean military in the 1950s then formally located at a purpose-built centre in 1972. Kukkiwon (translating as National Academy) is a government-

⁶⁶ World Taekwondo (WT) recently rebranded itself from the World Taekwondo Federation (WTF), dropping the 'F' for 'Federation' so the acronym would no longer allude to the common shorthand for "what the f*ck" (which was met with amused disappointment by the athletes participating in this study).

sponsored project that was as much about promoting Korean culture, language, history and ‘fighting spirit’ in the wake of Japanese Imperialism as it was about sport. In this sense, Kukkiwon-style taekwondo has been performing a re-territorialisation of a previously colonised space and practice. In recent years the Kukkiwon-endorsed ‘unified’ style of taekwondo has spread around the world (as directed by the South Korean government), becoming an Olympic sport in 2000 and a Commonwealth Games sport in 2010. Internationally, Kukkiwon-style taekwondo, more commonly known as World Taekwondo, has carved out a space of its own in global sporting culture.

However, while taekwondo in Korea is an established, government-backed, organised sporting body, in Australia⁶⁷ it remains unruly, fractured, refusing to conform, emerging in continuously variable enactments. Subsequently, local taekwondo clubs operate as sites of unique pedagogic practice which, while aligning with the Kukkiwon style, enact taekwondo pedagogy in multifarious ways. It is always highly localised and contingent on each club’s coaching philosophy and practice, location, and specific cultural mix in the local community the club serves.

The taekwondo club that is the focus of this study is a community-based ‘grass-roots club’ situated in Melbourne, Australia. It engages over 1,000 taekwondo students each week, with most enrolled in a general program which is primarily participation focussed, catering to any level of ability and experience. The club’s general taekwondo curriculum is structured by the Kukkiwon belt system, beginning with white and progressing through a range of colours to black as designated skills are mastered, such as patterns, bag work, self-defence, sparring, and board-breaking. This club emphasises the curriculum as providing ‘skills for life’ through building student capacity to practise situational awareness, respect, etiquette, endurance, resilience, confidence, commitment, self-defence skills, gross motor skills, and friendships.

While many clubs train very young athletes to fight competitively, at this club, an athlete must have obtained their black belt before moving from the introductory fight program (maniacs) into what they call the ‘fight squad’. Even so, the fight squad remains

⁶⁷ It is unsurprising, then, that the governing body of ‘sport taekwondo’ in Australia has been a site of contestation for many years. This has produced and been produced by destabilising effects in the taekwondo community, with rival factions only recently re-unifying under the single banner of Australian Taekwondo (AT). It is not in the scope of this thesis to go into the politics of the rival taekwondo groups, but it needs to be understood that the governance of the sport in Australia is historically a battleground that carries volatility that infiltrates many of the AT events, and has politicised seemingly innocuous aspects of the sport. Data from this study show that even young athletes are acutely aware of the politics afoot, referring to it several times in our research conversations. In the uncertain Australian context, World Taekwondo acts as a stabilising function that makes it possible for the sport to operate under a single national member organisation. Whatever its internal politics are, World Taekwondo projects a stable image to the international community and works hard on its profile.

recreational for most, only becoming performance-focussed for the relatively small number of fighters who are transitioning onto the international stage. It is the high-performance fight program geared to these transitioning and transitioned athletes that is the focus of this study. The club's fight program is well regarded, consistently producing the strongest performing senior Australian athletes, including Olympians and a World Champion, and boasting a stable retention rate of fighters through their sometimes turbulent teenage years.

Cultural practices, pedagogic devices. Specialist fight pedagogy in the focus club of this study enacts a break from the traditional Kukkiwon curriculum. While the fight program still embodies Korean cultural values of respect, etiquette, discipline, and indomitable spirit, it sits outside the proximity of many controlling affects of the World Taekwondo sanctioned Kukkiwon belt system. Instead, the specialised world of taekwondo sparring is structured by a different device, the Global Membership System (GMS). World Taekwondo requires athletes as young as eleven years to subscribe to the GMS by making a Global Athlete Licence (GAL) a pre-requisite for entering any World Taekwondo sanctioned event. The GAL requires that the athlete has a Kukkiwon black belt. Without a GAL issued through World Taekwondo, athletes cannot compete at the highest levels of the sport or become 'ranked' athletes, and therefore cannot attract funding or become eligible to be part of a national team. In the infra-language of actor-network theory, the GAL is an obligatory passage point (Callon, 1986) requiring the athletes to converge on certain practices (e.g., possess a Kukkiwon black belt).

The GMS acts in a device-like way in the world of taekwondo, much like the Cattle Tracing System (CTS) of Singleton and Law's (2013) study in farming practices. It is greedy and seeks to extend itself (Singleton & Law, 2013, p. 261) by colonising practices of taekwondo clubs, coaches, athletes and national member associations worldwide. World Taekwondo and Kukkiwon have, with the help of devices like the GMS, the GAL and Kukkiwon-certified belt system, 'swallowed' smaller martial arts entities. Athletes are tracked throughout their careers in systematic ways with the clubs (like the farms) and national member organisations forced to become an accessory to the process or suffer the consequences (e.g., having their players become ineligible to compete). The adherence to the Kukkiwon style of taekwondo is enforced. Large quantities of data are systematically acquired and used to divide, separate and categorise athletes (and cattle) without consideration of the potential harm this could do – especially to very young athletes.⁶⁸ Both the GMS in taekwondo and CTS in farms perform a

⁶⁸ The GMS and GAL can be understood as global systems that coerce individuals into providing personal data such as photographs, identity documents, passports, addresses, and competition results without providing individuals with the ability to act on security or privacy concerns.

powerful machine-like function, imposing particular practices that are geared to produce particular stratifying effects. In the case of global taekwondo, this has stabilised and serves to secure the position of World Taekwondo and Kukkiwon.

However, taekwondo coaches, like cattle farmers, can themselves be seen to perform device-like work in recurring practices that resist the colonising effects of the GMS – evading capture and enacting alternative realities, for example by facilitating team sparring events instead of one-on-one match-ups at local competitions for younger athletes, thus shifting the focus from individual performance to team play and participation. The recurring practices in this coachwork (akin to the purposive craftwork of Singleton and Law's cattle farmer) make space for 'becoming-minor' (Braidotti, 2013), or better, becoming practitioners of a 'minor' pedagogy⁶⁹ that is activated from within a crack – made possible, according to Deleuze and Guattari (2013, p. 122), precisely because of its relation to the dominant (major) devices deployed by World Taekwondo and Kukkiwon such as the GMS and the belt system. The club is free to operate its fight program as a subsystem, a crack line, in the World Taekwondo assemblage in which taekwondo practice can focus on setting up the conditions for encounters, or a series of encounters, that produce creative potential.

I argue it is from the crack that the coaches perform what Braidotti calls "a praxis of affirmative ethics" (2013, p. 342) in a process-based program that is geared towards empowering young people. As Coach Ilya states, it is about "giving [athletes] a sense of empowerment over decision making". Data (coming soon) also show how affect in practice plays a significant role in producing a fight pedagogy that is caring and ethical in a Spinozist sense of a relational ethics of joy. The coach-practitioners demonstrate how they collectively and purposefully work to produce an affective intensity that connects the constitutive parts of the club-specific fight assemblage. So while they are inescapably implicated in World Taekwondo, Kukkiwon and the GMS, the club practitioners actively push back, making their clubs a space in which their unique pedagogy can assemble and flourish, creating "a joyful energy" (Braidotti, 2013, p. 343). Not all of this is done quietly. They are prepared to fight the 'good fight' (fight to perform ethical good) loudly, publicly and through the legal system, to ensure that the best interests of their athletes take priority over the economic or personal interests of a few.

⁶⁹ The notion of minor is not in binary opposition to major but, as Deleuze and Guattari (2013) would have it, a move into a position of creative potential that is afforded by working from the edges rather than trying to reproduce an already existing, already dominant centre. It aligns with the supple 'molecular' line of practice that works in parallel with (not opposition to) the rigid 'molar' lines.

Collaborative coach practice, process-orientated pedagogy. The coaches are passionate about taekwondo; they have all represented Australia at the highest levels of the sport as athletes and coaches. Coach Ben describes the effects of the affective pull produced by his ongoing love affair with taekwondo, saying:

I think the difference for us is that we love it. We love the game, and we've been part of the game at the elite level, so we just love it. And every time, every time I think I'm done with it; I step back and do this, and I just can't help myself, I can't help myself.

This enduring love for the game infiltrates many of the relations in the fight assemblage. It is the love of the game that compels them to transition from athlete to coach and therefore stay deeply involved in the sport, albeit in a different capacity. And it is through this shared passion that connections with their emerging athletes are formed and made strong. These athlete-coach relationships can span decades, with some entering the club as pre-schoolers. In Figure 31, the social media post by a coach back in Australia captures the images that, to him, speak of the “MANY years” athlete and coach have worked together in order to reach the highest levels of the game, with the ‘poster’ tearing up as he brings it to the taekwondo community’s attention.

The fight program is the heart of the club – the head instructors claim that while it does not make them any money, it gives the club its life-force (its zoe). There are four coaches from two clubs that collaboratively run the fight squad. Three are based at the focus club (where this study is primarily located), and one is based at a sister club. The focus club and the sister club integrate their athletes at the elite level, and coaching duties are shared, as are the facilities, with athletes travelling to the different club-sites to train as per their training schedule. The focus club is the main site and the coaches from this club form the practitioner-participants for this study. However, the coach from the sister club unavoidably enters the fight assemblage. The clubs combine for travel to interstate and international competitions, and every coach has responsibility for every athlete. The coachwork is collaborative, working from each of the four coaches’ strengths. Ilya tells me:

So we work on our strengths as coaches, and that's what we focus on. That's why our program is so sustainable because it's not one coach doing those four things, it's four different coaches doing the one thing. So that's the difference between our program and being able to sustain so many athletes, irrespective of the outcome ... and it's interesting, a coach said to me, “So Ilya, I know [your club] has lots of kids and all that but I've got one kid and that one kid made it onto the team. That makes my program 100 percent successful. But you've got fifty kids, and only one kid made it on the team – so who makes us a better coach?”

But the point is that we're not just looking at the one percent, we're looking at the fifty kids. So, when we design the program, we design it around the fact that one or two will make it on the [National] team – maybe. And that doesn't take away from our motivation, doesn't take away our effort – we know most of the kids aren't going to make it on the team – we make sure we build the systems.

The point here is that what gives this fight squad a point of difference is that it is process-driven, not results driven. It privileges the process of becoming a successful fight squad rather than being a successful elite athlete (although a successful fight squad will be co-constitutive of the successful elite athlete). Ilya emphasises that 'we make sure we build the systems' and those systems work from the collective strengths of four expert coaches to assemble a unified program. While it (co)produces Olympians and a World Champion, this is not the reason the program exists or the primary goal of the coaches – it is merely a by-product of a successful process-driven program focussed on the best interests of the athletes as a group. Contrary to many taekwondo clubs, they refuse to practise 'medal counts' or place undue emphasis on winning. As Ilya says, "If we made that the focus, we've already lost focus. We've already lost our ideals". Instead, they prefer to focus on player development, wellbeing, engagement and retention – maintaining a high-performance program for a large squad of fifty instead of a single athlete. The club puts into practice the idea that if the process is given due attention, the results will look after themselves. This is not a common approach to instructing the sport – as indicated by the coach who sees himself as being 100 percent successful because his one athlete made it on the national team. It pushes back against a dominant taekwondo club culture whereby medals are the measure of the athlete's, coach's and club's success. At the focus club, medals are freely dispensed to the younger athletes and participation, fun and a positive experience are emphasised. Coach Ben tells me, "That's what our development is all about, it's about having longevity in the sport. And these kids can have, if they want, ten, fifteen, twenty years [in the sport]". Young athletes are understood to be in a development phase and need patience, lots of time on the mats, and lots of positive experiences. The coaches know that the vast majority of their athletes will not become successful international athletes but put energy and effort into every one of them, "giving the kids an opportunity to explore friendships, to explore relationships with coaches, [and] have a bit of fun doing something".

The fun is important. It is what the athletes all say keeps them coming back after injury and disappointment. When I asked a group of athletes why they kept doing the sport given the intense training, injury and hard losses they have all experienced at some point, Nikita responded:

Yeah, it's much more than the taekwondo. You get to do it with your friends. And with so many other sports they're either too serious or you just go with your family and I want to, it's sort of an experience where you get to go with the people that you really like. And you kind of get to get away from your life and you don't have to worry about homework – in the end you actually kind of do – but not all the annoying things that just get in the way.

The coaches know “somebody might do really really well and fulfil a dream” but emphasise that it is equally important for the young people “to have a great weekend away, great memories, great photos” so they can “reflect back” and “build on it” and “mentor the younger kids to continue this thread”. And they do. During my fieldwork, I observed countless instances of senior athletes mentoring or looking out for the junior athletes in more or less formalised ways, reproducing the cultural relations on which the club is founded.

Together the coaches work toward a common goal – which this year was “to make our kids competitive”, because at the end of the previous season they were not competitive, and the coaches felt like they had failed them. A failure of the group to perform as a whole is an indication to the coaches that the processes that are constitutive of the program had failed. So they came together and collaboratively reworked the fight program. Ilya explains:

We need to adjust our practice – we need to adapt our practice, we need to know what other clubs are doing. We're watching other clubs, and they're smashing out the head kicks. So we knew at some stage, about 12 months ago that we were really behind the eight ball. We'd really dropped the ball, so we picked up our practice.

When I asked Ilya if she thought they had been successful, she replied they had “absolutely achieved that goal”. She goes on to say, “We watched our kids at the Nationals, mate, they were super competitive. Sorry, they were super competitive. It was literally tactical errors that they lost on”. The athletes did not win, but their losses were competitive losses, and that was a measure of success. However, the stand-out athlete was Sophie because she was “so even-keeled throughout her fight. You could see the thread of practice, the thread of training, culminate in this one fight”. Ilya says, “All the coaches saw the same thing. It wasn't that sense of improvement; it was that sense of calmness, that sense of continuity in the fight that we were able to actually see. Because that was what we were actually trying to get the kids to be. To be in control, to be calm, to have that continuous thread of – if you're up or if you're down – stay calm”. It was Sophie's capacity to stay calm and present in the fight, maintaining an ‘even keel’ in her fight-practice without becoming overwhelmed by the affectivity of winning or losing, giving or taking a beating, that was the biggest indicator of success for the coaches.

The capacity to sustain a thread of calm has a specific pedagogy wrapped around it, which I observed in action back at the club (a point I return to shortly). It is also embodied by the coaches who are consistently ‘even-keeled’ in their *intraactions* with athletes. This and a common goal ‘to make their kids competitive’ underpin their coaching practices. These, in turn, follow different courses that are accented by what I describe as driftlines – variations in practice over time in response to changing conditions (configurations?) in the fight-training-competition assemblage.

Each coach has a different but instrumental role in the program, which is physically separated at times – for example, when they individually lead training sessions. At other times, such as in the competition environment, their practice is interwoven, and requires a keen sense of their collective practice – the affective flows threading their coachwork together relying on a deep understanding of the coach-athlete-coach relations at work. At a competition, Ilya is continuously (re)assessing her role in the competition assemblage. She asks:

Who's going to be hugging the crying kids? Um, who's going to debrief [the kids that have finished fighting]? And there'll be lots of... it just kind of happens ... so Ang's busy um, I haven't had a chance to go over to [that athlete] yet, oh shit they're losing by ten points [on this court here], I've got to coach the next kid, Ang will finish, and I'll say, "Ang, you need to go over there mate", and he'll go, "Yeah, I'm onto it", boom, "Ben, you need to go over there", and he's like, "Yeah, I'm onto it", boom, and it's like bang, bang bang bang bang. Now, none of us says [answers back], "Why don't you go over there?" It's just done. You know, it's interesting. It just kind of works.

A coach's individual practice is contingent on the unfolding dynamics of the affectively charged taekwondo-competition. It is busy. Athlete- and coach-bodies circulate, encountering each other in the warm-up area, marshalling, on the court and in the stands. Sometimes several players will end up fighting at the same time – all requiring a coach in their chair. Affective intensities flow in and between them, with the coaches tuning into the various athlete bodily responses to the affects in play (such as crying). The after-effects of an unexpected loss can result in the athlete experiencing a range of emotional responses, so “Who’s picking up the pieces?” is a question the coaches ask themselves as they get on with the business of coaching the next athlete on the court. They can rely on one another to step in when needed, and make it ‘just kind of work’. Ilya notes that “it’s weird when we’re one man down. Because we almost feel like we’re missing a limb [dis-membered?] ... we don’t quite function as well as we could”.

The coaching body coordinates their responses to particular events as they arise, almost feeling their way through the day – they know each other and their athletes well and can anticipate what needs to be done. It is embodied work that requires a high level of communication and situational awareness. It is sweaty work, tearful work, emotional work. Every ‘kid’ needs a hug sooner or later, and it is usually a sweaty, snotty, teary hug that the coaches willingly embrace. There is a certain emotional rawness about the sport that makes it a very fleshy-bodily practice for coaches and athletes. In each research conversation I conducted, the athletes commented on this rawness, saying how it made taekwondo relationships real, “not fake like school”, and coach feedback meaningful (not contrived like parents or teachers who have to say they did well regardless of whether they did or not).

Athletes know their coaches. They talk fondly of them and joke around with them. Their relationships are not always easy – the athletes are predominantly teenagers negotiating their teenage years and coaches (like anyone else) have their ups and downs over time. During our research conversation, Sofia tells me about ‘angry Ang’, saying:

It’s either because he loses his football match, or he’s just annoyed at the previous class. Then everything that we would do normally becomes something that we’d never do and it’s really bad. Everything is awful. “You never talk this much”, he complains. [Then Sofia turns to me, whispering] We talk this much usually, you’re just usually not as angry.

But their relationships are forged with numerous attachments so that if some fray, others continue to hold. Sometimes this is not enough, though. Some athletes cannot get past the confrontational nature of the sport. The dynamic of trust is an affective line that stabilises the coach-athlete, coach-coach and athlete-athlete relationships. Coaches know their athletes and trust is a big part of coaches knowing athletes and athletes knowing coaches. The success of the coach-athlete partnership in competition turns on this deep knowledge and trust and is so important that all the coaches actively protect it. Consequently, when Ilya says to Seth, “You fought well”, after he loses in the finals of a major competition, it really means something to him. The athletes trust the coaches to give honest feedback, “not like parents or teachers”, I am told during two separate research conversations.

The athletes also hold their coaches in high regard, and the coaches are careful to engage in an ongoing negotiation with their athletes’ always-changing needs. They do this from a position of generosity, not authority. It is interesting to note that all four coaches come from the position of the ‘minor’ and are already ensconced in processes of becoming minoritarian (Deleuze & Guattari, 2013, p. 123). That is, as children of migrants, growing up in a political climate shaped by ‘White-Australia’ policies, the coaches are no strangers to being

‘othered’ and what ‘becoming-other’ produces. By virtue of being categorised as a ‘wog’, or short in stature, or a woman in sport, or stereotypically as immigrants, they are always already working from the edges in ongoing practices of becoming-taekwondo-coach in a sport that has to a degree become their familiar yet is always culturally foreign.

Besides, Australia is not traditionally ‘good’ at taekwondo, and it does not have a high profile in the Australian sporting landscape. Therefore, the fight coaches of this club are already in an unlikely position of power – if power is defined as being in a position to practise creative potential and “use the minor language [of taekwondo] to send the *major language* [of Taekwondo] *racing*” (original emphasis, Deleuze & Guattari 2013, p. 122). What has become apparent (certainly to me) is that the taekwondo enacted in the fight program is very different from the Kukkiwon-style Taekwondo enacted in the general program. While the Korean ‘parent’ variant of Taekwondo aligns with a Major pedagogy and curriculum, the taekwondo of the fight program minorises the Major. This is partly achieved through the minoritarian work of the fight coaches.

Parents’ fears and hopes. Parents of the athletes often attend competitions and can find such events intense, activating a line of fear and hope that can exaggerate feelings of anxiety around their child’s performance and safety (athletes do get injured from time to time – very occasionally requiring a visit to the hospital emergency department). Some athletes feel the weight of parent expectations. Helena (16) tells me:

I don’t want this to be an effect but cause my parents were there watching as well. Like I hate it that I get nervous in front of them, and I can’t perform in front of them, and it shouldn’t be like that but it just is, and I don’t know how to... I feel, I feel because I want to like, I want to impress mum so much, and I think about doing that instead of just being there, present. Like I always think about them watching me, I don’t think about my actual fight, my actual fighting.

So parent expectations threaten the taekwondo-competition assemblage and may negatively affect athletes who are at risk of becoming distracted by a desire to impress, experiencing an incapacitating nervous response. As Helena recollects, eyes brimming with tears, nervous anxiety blocked her from becoming ‘present’ in the moment of the fight, resulting in the situation where she could not ‘perform in front of them’. Parent expectations are also felt by the coaches, who are careful not to let them cloud their ability to respond to the needs of the coaching team or athletes. Indeed, they actively protect the athletes from the negative affects of parental expectations by physically separating them – sending the athletes to the athlete-only area and requesting that the parents stay in the stands.

This year Ilya was late to the National Championships due to a sick family member. Andy and Ben were the two coaches on the ground, with Ang out of action due to him coaching at the Olympics the week prior. Ilya recounts her experience of arriving at the stadium:

I think [one parent] said, "Thank god you're here", and there was all that stuff and [another parent] was like, "Thank god you're here and you need to calm Sassi down", and it's like ok, all right, I need to just, parent expectations. I get it, I get it, I just need to everybody ... "I'll go down" [to the courts]. And as I go down ... I took my time actually coming [back] up to the parents to suss out what was going on, and I was watching the coaches [Ben & Andy] do their job, and before I got to the parents I'd already resolved that "I'm not going to interfere there because that seems to be working really well". And I kind of got a sense that all Ben and Andy needed was me to be their support, um, to do that extra bit on the sideline. That's really important. And not to interfere with what was going on between Ben and his players and Andy and his players. Which was ... and it's funny because it's invisible to the naked eye, obviously, but to a coach, to us, it's um it's sooo incredibly visible. You can see it, it's like a cord between them. You don't interfere with that.

Ilya knows there is a thread, 'a cord', connecting the coaches on the ground with their respective athletes. She can 'see' the relational attachment between coach-and-athlete (player), it is palpable to the experienced practitioner, and she knows not to interfere with that. Her uncharacteristically late arrival to the competition meant she was met with parent expectations which she had to take time out from to 'suss out what was going on'. By making time to observe the dynamics of the competition, she was able to discern that the existing athlete-coach relations were working well and resolve that she was not going to interfere. She says that "unless you see the need to step in, and that's the coach's eye, and that's a really experienced eye, and that's an incredibly, highly insightful experienced eye", she will not yield to outside pressure such as parent expectations.

The reference point is a single question: "What's in the best interests of the athlete?" On this competition day, the athletes' interests are best served by her working to support the two other coaches from the sideline. The coaches carry much of the responsibility for athlete wellbeing and safety during program planning, training and competition. At the beginning of a season, they plan and implement a developmentally appropriate fight program that targets specific competitions in selected countries. In training, they are responsible for a number of athlete pairings, rotations, load, managing injury risk, and administering first aid. On the court, they sit in an allocated chair and are responsible for a single player at a time, advocating

and antagonising. They mentally prepare a player, give coaching points, protest poor referee decisions, bring a player back into the game if they are ‘not present’, have the power to intervene or even stop a fight if they believe their player is in danger, and help a player deal with being beaten (and taking a beating). These decisions are complex and are sometimes made under immense pressure with no time to seek a second opinion, so they use the question “What is in the best interest of the athlete?” to simplify the process.

Ethical practice, affirmative relations. The relationships between coaches and athletes are strong, invoking loving attachments. Ben says, “Yeah, we love these kids. The relationship with these kids has been since they were little. They’ve all come through our system”. There are also loving affects (or mutually joyful affects?) circulating between athletes who, in the focus groups, commonly referred to the club as their “taekwondo family”. Many of the athletes are partially raised by the club, spending school holidays at training camps and travelling to interstate and international competitions. The emotionally charged world of taekwondo fighting creates the conditions for (or requires?) strong human-human relations. Yet this situation also has the potential to put athletes in a position of vulnerability, especially in a sporting context that normalises what the World Health Organisation (2002) would define as violence.⁷⁰ Added to this is a situation where growing athletes must nominate and ‘make’ a certain weight to compete. As a result, they risk becoming caught up in unrealistic expectations from adults (parents and coaches) who may not be adequately informed about the dangers of ‘weight cutting’. Food thus becomes vitally implicated in the fight assemblage.

For this reason, the coach and club have an explicit moral code for parent conduct, weight management and athlete conduct that everyone is expected to adhere to (a social contract). However, while this provides a minimum level of protection for athletes, it is not what makes the fight-pedagogy ethical. What makes it ethical is the commitment of the coaches to generate a club culture that is always about producing “the experience of a *mutually compatible*, affirming and empowering affective relation between bodies connected in concrete relations of engagement” (emphasis added, Bignall, 2010, p. 82). In assembling a fight pedagogy, the coaches set up fight scenarios (body-events) which mutually increase the participants’ power of affectivity (as individual bodies and collective team body). This is actioned through pedagogic strategies aimed at increasing participant-bodies’ endurance,

⁷⁰ The World Health Organisation (2002, p. 4) definition of violence is “The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation”.

resilience and power to act by increasing the capacity to produce a multiplicity of connections with more-than-human others. This forms the basis of the fighter's learning experience. As Duff (2016b, p. 179) explains, "learning is a function of those encounters that enable a body to increase the array of objects, bodies and entities it may affect and be affected by. ... [B]odies affect one another in their encounters. In this respect, learning is an intensive function of thinking". Performing an ethical fight pedagogy is thus about creating the conditions for joyful affirmation in a body-event in which athletes (and coaches) encounter other athletes, equipment, technologies, material environments, intensities – and themselves.

In considering the athletes' best interests before taking action, the coaches are activating an ethical pedagogy that emphasises the cultivation of affirmative relations and a club culture of joy – an active joy that reaches 'beyond enjoyment' (Bignall, 2010). A practice of ethical obligation towards athletes permeates the coachwork in competition and leads the coach to focus on how an event unfolds, and how s/he relates to athletes as the event unfolds. Coach Ben notes that:

Win lose or draw, we don't care about the outcome. We just care about the process of what happens and how we treat these athletes and how we treat them on the court and how we treat them off the court.



Figure 33. Athletes and coach 'on the court' (bottom left and right) and waiting to go on the court (top left) at the Australian National Taekwondo Championships.



Figure 32. Coach and athlete 'off the court' after a hard loss.

This does not just happen on competition days: this way of coach-athlete relating is embedded in the pedagogy of the training room. Ben tells me, athletes are taught that “Anything that happens on the mats, particularly in training, has to be full of respect because you can’t have a training partner and beat them senseless and think they’re going to train with you again”. At a practical level, athletes need sparring partners to be able to train. Therefore, they must look after them. However, it runs deeper than this. In order to learn the art of fighting, athletes need to be able to see sparring as a game without individual blame. To scaffold this learning, Ben explicitly teaches the newest fight squad members how to depersonalise their fight-practice. He explains,

The game of taekwondo is very point orientated and scoring points. So to make sure these kids are interested in scoring points, I often have the conversation about the fact that we hit the shield and the head guard, but we are NOT hitting the body or the face. So they understand that hitting the shield and the head guard are different things from hitting the person.

This is not to say that Ben is advocating a separation of mind from body from emotion – fighting involves the capacity to make split-second responses to an opponent’s move that does not allow time for separate processes of thinking from doing from feeling. Aiden (16) explains:

If it’s going to be a good fight, it just feels like you’re going through the motions. Not in a bad way but you’re in cruise control, it’s just muscle memory, you’ve done this a thousand times before and if you’re having a bad fight then you’re like consciously thinking about everything.

An overemphasis on conscious thought results in bad fighting. Athletes need to trust their bodies to respond in the moment. In order to develop this capacity, Ben works to actively re-configure the kicking-person relation (which can produce adverse affects) to a kicking-shield-points relation which enables the athlete to move towards new, more affirmative ways of relating.

Affirmative athlete-athlete relations are further established and strengthened in ritual training practices. The chorus of kihaps and feet kicking bags in unison while doing group drills builds a collective intensity that drives the athletes to train harder. They are all in ‘this’ together: sweating together, becoming exhausted together, laughing together and crying together. Together, the athletes are capacitated in mutually beneficial ways. At the end of the session, the coach will debrief them all before they engage in a group hug and chant (Figure 34).



Figure 34. Montage of the training assemblage. Training together, sweating together, and ending the session with a group hug and team chant.

Their shared experience at training builds a team spirit that, when away from the club, is made material in teamwear. Interestingly the athletes will never swap their clubwear but are happy to swap national t-shirts for teamwear from another country (e.g., Red T-shirt). It is an individual sport, but the athletes tell me that the team is all-important. “When you’re in a team you perform at your best”, Ivy says. Helena explains further, “When you’re all there as a collective you’re there as a team, but when you’re there individually, it’s like I don’t really have that moral support to back you up. You’re not as happy as you were, you’re not having a great time”. The affirmative club culture sets the conditions for developing friendships as much as fighting skills, and it is the strength of these friendships that helps the athletes work through the difficult affects generated by losing, not making weight or getting injured. Yet the team culture is not about making all the athletes the same; quite the contrary, as Ivy (16) says: “I feel like you’re more yourself when you’re with family and friends at taekwondo because school expects you to be something that you’re not. Taekwondo just embraces all your differences”. These include different faiths (e.g., Jewish, Muslim, Christian, atheist), different ages and

stages of schooling, different education systems (e.g., public, Catholic, private and homeschool), different cultural backgrounds, different senses of humour, and different lives in an array of suburbs in Melbourne. The athletes also have a wide range of abilities and interests but share their taekwondo practice and taekwondo 'family'.

The thread of affirmative relations in a culture that respects difference continues into how the coaches assess the fight squad's performance at a competition. While the athlete's performance at a competition is an indication of whether or not the program is working, poor performance is not seen as a failure of the individual athlete – failure is depathologised and deindividualised (like the trauma relation at the human pathology museum). At the end of the preceding season, the coaches realised, "We needed to make our kids competitive", and "they were not competitive, and it was our fault! We had failed them". There is a collective responsibility here which speaks (again) to the sentiment that we are all in this together. It is a collective responsibility that is being taken by the coaches for the relative success of the athletes and effectiveness of the fight program. The program itself is collaboratively designed to meet the athletes where they are at, at a particular time. Ilya tells me, "It's done in a very loving sort of way" – that is, the program is developed and implemented in a very loving way. The 'very loving sort of way' Ilya speaks of underpins what might be called a Spinozist ethical practice – a practice that seeks to actively organise encounters that produce shared experiences amongst diverse bodies to create mutually joyful and capacitating affects:

The four coaches are very unique in our approach. I have a holistic approach. And at the opposite end of the pendulum is Ang who is very sort of competitive. But that's great because there's a balance there. If there was just one it wouldn't work, if there was just the other, it wouldn't work. But Ben and Andy are the ones that come in the middle. So we have this amazing soup that just kind of works. But we make sure it works because we have a very respectful contribution to each other.

The coaches are very different and do not seek to eliminate difference in themselves or their students. Rather, they make it their strength, working from a common ground (which is the best interests of the athletes) into their specific strengths as coaches. In a challenging sporting context that is permeated with contestation from the macro level of the sporting body to the micro level of the sparring competition itself, they demonstrate how it is possible to engage with each other and their students "in ways that will maximise ... mutually joyful affects, and minimise disagreeable combinations that reduce the complexity of ... co-existence" (Bignall, 2010, p. 92). That is, they engage in a collaborative practice that is joined in affirmative ethics (Bignall, 2010; Braidotti, 2013a; O'Donnell, 2018). Their coachwork strives towards configuring

joyful relations (affirmative affects) in and between the people, things and ideas circulating in the training and competition environments. In so doing, they do not seek sameness as taekwondo practitioners but honour difference in a common ethical practice or ‘doing-in-common’ (Neimanis, 2012, p. 216). As a result, there is choice for coaches and athletes to form different ‘on court’ coaching relationships. This is important because not all athlete-coach combinations work all of the time. In a research conversation, Seth comments that he doesn’t like to be overcoached, so he seeks out Ang or Ben on competition day because they give him the freedom he thinks he needs to fight at his best. The coaches do not take a request for someone else to coach personally. Coaching at competitions involves emotional labour and the ‘on court’ coach-athlete relationship requires a certain synergy to be successful.

They enact a dynamic of loving towards each other as practitioners, a loving founded on deep respect for each other’s contribution to the program, one that mutually increases their capacity for affectivity (power to affect and be affected). The collaborative work they do happens in planned group encounters co-ordinated by Ang. It can be a labour “of patience and resilience, of confronting (and partially dissolving) one’s own ego and learning to be responsive in ever-new ways” (Neimanis, 2012, p. 218). That is to say, the collaborative process is not always easy and is co-constituted by disagreements too. In our interview, I ask, “How do you decide what to teach in the lead-up to a competition?” Ilya responds, saying:

We’ll always have a coach connect meeting. So we’ll decide, “These are the competitions we want to do”, and Ang is a big driving force in the coach connect meeting. We get a bit like, “Oh, don’t worry, we’ve done it before”, and Ang’s like, “No. We actually all need to get on the same page”. So he really drives that, and he makes us all come. He’ll organise the lunches, he’ll organise whatever, ... So, we’ll all come together, and we’ll look at our list of athletes, and we’ll look at the competition that’s coming up. The next competition. We’ll look at every other factor (that) comes into play, are they using Daedo [Electronic Scoring] System? Are they using Gen 1, Gen 2? Are they using KP&P [instead of Daedo]? Who are the referees going to be? What state [or country] is it going to be in? So we’ll look at all the um variables, all the things that could influence what happens on the day. Then we’ll start to build our practice. So, “Ang, you’ll work on that”, “Ilya, you’ll work on that”, “Andy, you’ll work on that”, “Ben, you’ll work on that”.

The collaborative program design is complemented by each coach’s particular coaching practice in training and competition – where there is a more spontaneous ‘in the moment’ approach to responding to variables that come into play.

Assembling a Pedagogy of Fighting

While the fight-training assemblage is constituted in part by the structuring (stabilising) practices of World Taekwondo, Kukkiwon, Australian Taekwondo, Olympic aspirations, target competitions and the rules of the game, the foundations of the pedagogy are firmly located in embodied coachwork and the specificities of the club-based training environment. These emerge in the more banal, everyday relations between the built environment, athletes, coaches, parents, technologies, equipment, training schedules, skill development, and performance goals. The pedagogy of fight training is highly targeted, ordered by a weekly schedule that allocates athlete-training to specific times, spaces and coaches. The coaching team can be understood to collaboratively participate in a distributed pedagogy that, while predominantly human-centred, is still contingent on the agencies of more-than-human participants.

The coaches *appear* to utilise pedagogic affect in a didactic manner, centred around an intentional coach practice; however, the fight pedagogy is one that is never fully in the control of the coach. Rather it is contingent on various *intraactions* between coaches, athletes, ideas, equipment, technologies, smells, and even the occasional insect – all of which act with degrees of agency (or capacities to affect and be affected). A wild element, or delirious intensity, is generated in even the most tightly controlled training or competition environments: a spider crawls out of a piece of equipment and an intensive sparring session ends prematurely in a dispute over whether or not to kill it; a sparring pair lose focus and start to chat; an athlete answers what was intended to be a rhetorical question and laughter breaks out; a player goes completely ‘off script’ during a competition match; an electronic scoring system adds random points to a player or completely fails to score what looks to be a ‘clear shot’.

Contingent agencies. Sitting in the club’s training room (as researcher) for the first time, at 7.30am on Saturday morning, I note in my field notes that training mitts, kicking bags and protective gear hang in orderly rows. The coach has not yet arrived. Athletes are chatting quietly, strapping injuries or warming up. There are ceiling fans – not on. And air conditioning units – also not on. I wonder what it is that attracts my attention to the ‘not on’ fans and air con? There is a particular smell. What is it about the smell that catches my attention so (an assault on the senses perhaps)? Smell and (not on) fans become part of the fight-training assemblage along with athletes, coach (not yet here), equipment and the upcoming competitions they are preparing for. The training environment that is still warming up, not yet ‘on’, or working but not working, reveals a contingent reality – an expectation of a future that will vacillate – a future that is both fans on and fans off, revealing in this very human-centred

teaching-learning environment the constant contingency at work between human and nonhuman agencies, or more-than-human agencies.

Airflow and smell-particles are not the only more-than-human contingencies at work in the fight-training assemblage. The Daedo electronic scoring system also plays a significant role. I am told:

The electronic system has changed everything for us. It's changed the way we teach. It's changed the dynamic of the athletes. It's changed the skill set. It's changed a whole lot of things. We've had to constantly adapt through different phases of the electronic system ... [But] we can never go back to a non-electronic system because there was too much human error involved.

The electronic scoring system has superseded human scoring because it removes the error of human judgement. The electronic system still makes mistakes, but because these are understood to be random (not personal) or without human bias (not cheating), the technology is widely accepted as part and parcel of the sport. The system has also changed the dynamics of the game. Athletes no longer need to accentuate their performance to convince a human referee that they scored (maybe with a loud kihap, pop of foot on shield, and a celebratory fist-pump, accompanied by a theatrical cheer from their court-side coach); they need to convince the electronic system which measures the force of a kick through sensors located in zones on the body-protector (shield) or head guard. The electronic system is, therefore, more difficult to corrupt but still acts on the fight assemblage with agency. Ben goes on to explain:

And our training is different because the skill set on the [electronic] shields has totally changed parameters. So there's a lot of front leg fighting now where we used to do hardly any front leg fighting. So that's changed, and now, and now it used to be determined by a degree of impact where now the sensitivity is determined by the equipment [software] and by your weight, and so then you only have to be able to touch at that amount of weight in order to be able to score, and to touch the head. You used to have to form some form of impact, and now it just has to touch, and I like that, and it means less people are going to get hurt.

The electronic scoring system brought with it significant changes to the game. Some have been stylistic changes (e.g., increased front leg fighting). Another has been a reduced need to do powerful head kicks, therefore improving player safety. The technology measures the psi (pound-force per square inch) of a kick and the sensors in the head guards are set to score with a light touch. Additionally, a head kick is a kick with less power that has more speed and

is therefore more likely to score. Globally, the technology has become an increasingly indispensable part of the sport and therefore has become an increasingly prominent participant in club fight training.

The club training environment is contingent on the practices of technology, equipment, fans – on and not on – and the rules of the game as much as coach-bodies and athlete-bodies. The more-than-human participants come together at scheduled times to form swarms of affective intensity. These intensities move around the training room, accumulate between sparring pairs then disperse as the pairs are dispersed, only to reassemble between new pairings. The intensities circulate in and between bodies, sometimes congealing around a specific point, person or equipment. These intensities are patterned by the coach to a certain degree, but never fully – delirious affects ensure that no training session ever unfolds completely to plan, and in the sessions I observed, the coach works hard to adjust the session accordingly. To do so, the coach deploys specific mechanisms (teleological strategies) that form the basis of an embodied fight pedagogy – for example, changing partners, pulling back a little, creating a pressure situation, cracking a joke to lighten the tone, counting down. These strategies are often subordinate devices – not because they are less significant but in the sense that they work from the edges, or from the position of the ‘minoritarian’ (Deleuze & Guattari, 2013, p. 123). That is, they twist away from dominant machine-like devices (such as the Kukkiwon belt system or the GMS) that work from (or control) the centre to make a ‘unified’ (homogeneous) Kukkiwon-style taekwondo by activating rigid (molar) lines. The coachwork does not seek to erase the effects of the dominant devices because the structuring, stabilising (molar) lines they activate make the coaches’ ‘crackwork’ possible. Instead, coachwork creates an alternate space in which to activate supple (molecular) lines of singularity that are about inventing new configurations of pedagogic relations that carry the coaches’ intention of empowering athletes.

Coachwork as carework. Coachwork requires the coach-practitioners to engage in ongoing practices of care. Their coachwork embodies carework in training, while travelling with athletes and at competition. In an attempt to guide parents’ participation in the world of their taekwondo athletes, coaches say, “It’s our job to coach, we’re coaching your kids, all you have to do is hug them when they come off the court and love them, and we’ll do the rest”. However, Ben tells me, the reality is, “we do the coaching, *and* we do the hugging”. They love every one of their ‘kids’. And in the affectively charged competition environment, the coaches actively take responsibility for their players’ wellbeing. Ben says the winners are not usually a focus; “It’s all those other kids that lost, and then you need to spend the time with them and

then go through and debrief and talk about what happened, or if they won under circumstances that weren't necessarily good, you know, because taekwondo is a unique thing".

Coaches perform carework and also mentor their athletes into caring practices on the court. Ben describes how at Nationals he was coaching "a very experienced player" who had come up "against a developing player" so his "job was to make sure my player scores enough points to win but not win with the overwhelming devastation that she is capable of. So it was a matter of a controlled win". When athletes are not engaged in a 'controlled win' scenario they "put everything out there, and they hold back nothing and so in the end, whether you win or whether you lose, it's still very emotional". In some instances, players experience losing by the hand (foot?) of their training partner, and this can be even more difficult to process. The coaches do the groundwork for dealing with the wave of raw emotions that threaten to overwhelm athlete-bodies in the competition space back at the club: from the earliest engagement in the fight program, athletes are taught to care for each other and are cared for by the coach. They learn to take care and receive care in explicit ways. Ben gives an example:

We've got the kids that are in the red t-shirts ... so when they come into the class, I always say to the group that if you are partnered up with somebody in a red t-shirt, you need to understand that they come from maniacs [beginner fighters] and you need to show control. So having that visual thing of the kids in red t-shirts then um gets the other kids to think, "Red t-shirt, hasn't got as much experience as me, have a bit of respect". A lot of respect has to happen on the floor. You can't just go out and beat someone up.

A culture of care and respect is actively generated. Training partners from the focus club look after each other in and out of training, on and off the court. 'You can't just go and beat someone up' even though you are in an environment that is everything to do with 'beating' someone.

Building resilience, learning to take a beating. While athletes at the focus club are taught the art of the 'controlled win' and in so doing taking care of their opponent, this practice is not reciprocated by other clubs. This can lead to some experiences of "bad losses". Ben explains this further:

You get beaten in your sport but [in taekwondo] you often get a beating, and that's really hard to resolve that because it's very emotional. There's lots of things wrapped up in that. Because somebody actually physically beat you. It's not like in tennis if somebody's hit the ball and you miss the ball, or you missed a goal, or you didn't run fast enough. You are actually having somebody physical hit you so ... It's really emotional, REALLY emotional.

To prepare athletes for this eventuality, Ben makes the building of athletes' physical resilience (physical tolerance for being kicked) and emotional resilience (tolerance for dealing with bodily responses to being kicked) central to his coachwork. Without resilience, athlete-bodies cannot perform in a fight scenario because negative affects build, stick and get stuck. A line of frustration (and patience) may be activated, threatening their capacity to hold onto the thread of calm and clouding their ability to understand what is happening in the fight. He notes:

They have to be prepared for those kicks coming. And we'll often if we're going to do face kicks, I'll get the kids with the hand mitts, and they'll go at each other. If you get hit in the head with a hand mitt, it's hilarious. If you get hit in the head with somebody's foot, it's devastating. Emotionally. I'll watch these kids, and they'll get the hand mitts and hit each other in the head, and they all laugh because it's hilarious.

But, I still like to think that even getting hit in the head with a hand mitt, is still giving them that appropriate response and understanding that "OK, here it comes, I gotta move", or "Here it comes, I gotta duck", or "Here it comes, I gotta block". Then if we practise that response and hopefully it'll get a lot better.

This is the starting point for teaching the members of the fight squad to learn how to "get beaten and take a beating" – which Ben tells me is a difficult thing for athletes to come to terms with within the competition space, so they need to be prepared. He deliberately uses humour to diffuse difficult affects that can attach to being hit and result in incapacitating bodily responses that disrupt performance (such as fear of failure, fear of getting hurt, excessive competitiveness, superiority, inferiority, grief). The athletes' laughter is contagious: "they all laugh because it's hilarious". As hilarity and the accompanying laughter spreads through the room, a crack opens – enabling a first (tentative) step in a slow process of raising the athlete's awareness of affect as a complex and powerful transpersonal force that exists outside of themselves and is never fully in their control.

Over time they come to learn how affectivities circulate in the training room, at a competition, in and between athlete- and coach-bodies, equipment, spectators, parents, referees, and technologies in order to bring home the idea that sparring (and the outcome of sparring, such as winning or losing or being hit) is not personal. It is precisely by learning that affects (and the affective residues that manifest in emotions associated with 'being beaten') are not personal – depersonalised affects (O'Donnell, 2013) – that the youngest athletes can begin to participate in the sport without reducing each sparring scenario to beating or being beaten. Becoming aware that affects are not personal is a significant kind of learning that may translate into a range of experiences beyond the fight squad. For example, receiving

challenging feedback and dealing with setbacks or knockbacks in life more generally. It is not an easy thing to teach or learn, which is why Ben says, “Only every now and again will I have a class that will do, um, that will do head kicking”, because, he repeats, “it is very emotional”.

It is also a complicated thing to teach because the lesson does not stop at depersonalising the loss or beating, but extends to making ways to learn from the experience of being beaten. Sofia comments on how often an athlete take a loss personally, leading them to deflect the ‘blame’ onto “the refs or the slippery mats or a misbehaving piece of equipment”. However, Sofia tells me, this is not helpful, because “It doesn’t help the athlete to get better ... And it’s not about blaming it on themselves but it’s not about trying to shift the blame [onto someone or something else] because if you shift the blame you can’t improve because you’re trying to say, ‘I did everything right’ when clearly you didn’t”. The point Sofia is making is that blame is an unhelpful practice and trying to depersonalise a loss by shifting the blame from yourself to another will not work because it shuts down the potential to learn from the experience, to recompose oneself differently, affirmatively – in ways that increase the range of things, bodies and entities one affects and is affected by in the process.

Body-events, embodied minds. Training the becoming-athlete is not about the ‘enbrainment of matter’ but about developing ‘an intelligent flesh-mind-matter compound’ (Braidotti, 2013, p. 352) who thinks-feels-acts in one dynamic process, transversing a historical Cartesian split of body and mind. The successful enactment of this dynamic is critical in the moment of the fight. At various times during my fieldwork, it came up in conversation, often being referred to by athletes and coaches as ‘muscle memory’. This might also be understood as an immanent body-event (Manning, 2009) – that is, a body-event that cannot be overthought. According to Ilya, “You can’t overthink it because it becomes a little forced”.

If the athlete (or coach) separates mind from body, they risk overemphasising the cognitive during a fight. Aiden points out that “If you’re having a bad fight then you’re like consciously thinking about everything”, or in other words, he becomes stuck in his mind. The intelligent athlete-flesh-mind-matter assemblage no longer works as a cohesive whole. He frays. As Helena told us earlier, when she is thinking about her parents watching her, she is thinking about impressing them “instead of just being there, present” in the fight. Helena alludes to the need to do embodied thinking-doing, in time and in place. There is no time to be elsewhere; stepping out of time and becoming absent even for a moment can result in losing the fight, ‘being beaten’. Overthinking, or becoming stuck in thought, places too much emphasis on cognition, leading to a diminished capacity to sense the affective tone of an encounter and do the highly intuitive bodywork that competition fighting requires – with

bodywork being understood as “work done with the body on other bodies” (Gherardi, 2017, p. 45). The athlete’s power to compose a winning manoeuvre is reduced, shifting the power relation towards the opposing player.

Coachwork (like fighting) is as much about not overthinking as it is about thinking in doing or doing-thinking in embodied practices of affecting, being affected, meaning-making, and mattering. Over-planning, overcoaching, over-analysing a situation threaten the balance of pedagogic relations patterned by affective practices of ‘in the moment responsiveness’ and intuition. The athletes themselves ‘know’ this. In the training environment, this requires attention to the unfolding body-events that form in and between athlete-bodies and coach-bodies, as well as the affectivities that pulse through them. The athlete-bodies are simultaneously affected and learning to affect, in staged scenarios (encounters). I return your attention now to the early Saturday morning training session which I observed, drew and audio-recorded.

The coach walks into the training room and the chatter that is accompanying the warming-up-athletes stops dead. Today the athletes are instructed to listen, NOT question. The first drill is explained; they break off into sparring pairs and begin. The coach has a stopwatch, whistle and stick. Every minute she shouts “CHANGE!” and the sparring pairs swap roles. The intensity in the four walls of the training room is palpable.

Coach Ilya: “As I call out your name, you’ll be on the defensive.”

“Keep going. No stopping. No talking!”

“Frustrate your partner. Close your gaps. Frustrate, frustrate, frustrate!”

“Change! The other line is frustrating now.”

“Work the other person’s patience. Look for the gaps in the attack.”

“Change!”

One sparring pair at the end of the room stops what they are doing. They’ve lost focus.

The assembling of coach-stopwatch-stick-whistle-shouting-pacing in a conventional taekwondo training environment ‘appears’ coach-centred. However, understanding the coach as the being in the centre would be to incorrectly assume the coach *to be* an individual, intentional human subject who is enacting a ‘Major’ pedagogy. It misses the highly responsive bodywork that the coach is doing, the ongoing practices in which she is *becoming*-coach differently as the training session unfolds. In the moment, incremental shifts in coach (and

athlete) subjectivities are scarcely perceptible, but over time these shifts accumulate and become noticeable.

As a researcher in the training room, I have crossed the threshold that separates onlookers from coach and athletes. I have entered the ‘palpable intensity’ of the fight-training assemblage. Attuning to the sonorous practices in the room sensitises me-as-researcher-observer to the affect of sound in practice and how it can indicate the generation, circulation and dispersal of affective intensities – as well as breaks or ruptures in the pedagogy. The room goes quiet as Ilya enters, friendly chatter subsides, and a new intensity washes over the assembled bodies. The athletes are instructed to listen, not question, not talk. However, they are anything but silent. The sound the athlete-bodies make helps to build the intensity of the training environment and is produced through athlete vocalisations (kihaps), the rhythmic ‘pop’ of feet on kick-bags, feet landing softly on the mats and the occasional ‘break’ when an athlete laughs or falls to the floor with a thud or simply bends over gasping for air. This ‘soundscape’ is punctuated by the coach, who uses her voice to offer coaching tips, raise or lower the training intensity, check-in with and check-out athletes, and anchor the training with specific instructions. Her whistle blows periodically, and when the fans come on a rhythmic, machinic squeak joins in. An energetic wall of sound (Deleuze & Guattari, 2013, p. 362) encircles the fight-training pedagogy in action, holding onlookers in the entranceway at bay. It is akin to a song, “a rough sketch of a calming and stabilizing, calm and stable, centre in the heart of chaos” (Deleuze & Guattari, 2013, p. 362). And within the wall of sound, a series of events (including body-events) are in motion. The coach walks in circles around the training room, gesturing with whistle, stick and stopwatch, responding to the athletes’ needs. As required, she adjusts her practice to re-combining relations in and between athletes, things and ideas in correspondence with what needs to happen next. So while the fight-training pedagogy is highly targeted, it is not scripted – the coach-body responds to athlete-bodies, tapping in, pulling back, dispersing, containing, applying pressure. I ask Ilya about her coachwork in the training environment and she explains:

*Sometimes I’ll tap into the kids, and I’ll see that once they start fraying, that means they’ve lost control. So I pull back a little. I stop counting the activities. I stop whistle-blowing, I just keep it free. I’m conscious of not just yelling at [the athletes] because then they’ll become incredibly dependent on that. We don’t want that. **A class is designed around giving them a sense of empowerment over decision-making.** The decision is ultimately theirs. I just give them lots of options. Then we practise, then I put them under pressure. Then I’ll pull back and see how they’re going making that decision. And so often they’re bugging it up. And then there’s “BaaaH!” And that’s fine. I’ll come back*

in and reassert, reposition everybody. Changing partners is a big one because if they stay with the same partner, they don't reboot.

Much of Ilya's coachwork is about setting up scenarios (series of encounters) through which athletes learn to be in their bodyminds (embodied minds?) and attend to how they might put affect into practice (or indeed, how affects might perform them). They learn to build intensity, activate the dynamic of frustration-and-patience, create pressure, change the tempo of the fight, develop a sense of urgency, and attack – all while remaining in a calm, embodied mind. 'Once they start fraying' (disassembling? Unravelling? Separating fleshy matter from grey matter?), Ilya pulls back, stops certain practices such as counting and whistle-blowing – practices that intensify the affectivity, build tempo, and create pressure. Instead, she shifts her practice with the intention of keeping it free, enabling the now sweaty athlete-bodies to reassemble (recompose?) before entering into new relations of athlete-partner-frustrating-sweating-in control-bugging it up! Athlete- and coach-bodies produce sweat, smell and feelings that fold into the fight-training assemblage. As the smell of taekwondo envelopes everyone and everything, it is not clear where anybody begins or ends. Together with coach-stick-stopwatch-protective-wear-hope-and-fear-and-not-on-fans, the athletes become mutually constitutive of a fight squad training body. Then Ilya's coachwork acts on the fight-training assemblage, 'coming back in and reasserting' herself on the assembled bodies. She mediates the affective dynamics in the training room by changing sparring partners, putting the pressure back on with stopwatch-whistle-and-stick.

These entities are no longer separate from Ilya but enfold into her coach-body, taking up a central role in the unfolding pedagogy. A now shouting, more-than-human coach-assemblage exerts force on the athlete-athlete relation. An intensity builds in and between sparring pairs, and the scene is set for the athletes to rehearse their decision-making process in a pressure situation. Athletes de- and re-compose themselves in relation to the changing conditions of the encounter with their sparring partner (who is also de- and re-composing him or herself). The pair enter the sparring drill with an attack or defence or evasive movement, trying to put the coach's instructions into action. "This entails that the unfolding of an affective dynamic is not reducible to properties of only one of the involved individuals" (Slaby & Mühlhoff, 2018, p. 5) – in the process, athletes are learning how to take the upper hand in a sparring exchange and claim the power to affect the opposing athlete-body, with the aim of reducing (and ultimately increasing) his or her capacity to perform effectively.

Or at least this is the intention. But this is not all that is happening. Unintended pedagogic affects infuse the training assemblage too, evident in the fraying bodyminds of

athletes, who occasionally lose focus and ‘bugger it up’. Or perhaps a foot guard flies off mid-kick, interrupting the sparring drill as its retrieval is negotiated. At times the athletes experience reduced agency. In response, they exert themselves on the fight-training assemblage through small acts of resistance, falling over and taking a prolonged moment to get up, stopping what they are supposed to be doing for a chat, laughing, walking to the changing room for a drink or toilet break. These resisting practices produce ebbs and flows in the micro-powers moving in and between coach- and athlete-bodies during training.

A line of fear and hope runs through the fight-training data, yet it is unclear for whom the dynamic works. Does Ilya work to allay fear and build hope through her body? In giving the athletes a sense of empowerment over the decision-making, is she activating a flow of intensity that results in the athletes accumulating micro-powers (and agencies)? Will this afford a realisation of the hope that athletes can make the right decisions on their own? Handing the responsibility for decision-making over to the athletes in the hope they will learn to make the ‘right’ decision, make a capacitating decision, redistributes affect. The coach relinquishes control, the athletes gain more control – if they have developed the bodily capacity to take up the opportunity and put it into action with their opponent. When they ‘bugger it up’ the dynamic shifts again, and the coach takes back some of the responsibility.

Ilya builds muscle memory – re-membering bodies, helping them not to overthink it, not to separate body from mind. She pulls back to give them a go, but they keep ‘buggering it up’. Might this indicate a fear of ‘buggering it up’ in competition? A fear that is contingent on a hope that if they keep ‘buggering it up’ now, they will eventually (with enough opportunities to practise) get it right when it counts (in competition)? Learning to fight is about learning to affect the fight assemblage and reconfigure the relations to put the athlete in a position of power. So fight training is about empowering the athletes to manoeuvre their embodied minds (intelligent flesh-mind-matter compounds) so as to take up a position of control when participating in a fight. The aim is to dominate, accumulate and hold on to power, becoming the winner. The fight pedagogy creates continuous opportunities for athletes to learn. The learning is scaffolded by the coach, creating opportunities for athletes to put the learning into practice in different contexts, under increasingly pressurised conditions.

In her coachwork, Ilya is ‘tapping into the athletes’, responding to their body-talk, modifying her practice in order to modulate the affective flows within the training assemblage. As athlete-bodies are recomposed with/in it, unmaking and remaking them both as athletes *and* as a team, their individual and collective capacities to affect and be affected shift. Ilya’s coach self is also unmade and remade in relation to the changing configurations of

the training assemblage, as are her capacities to affect and be affected (and therefore her power). Meanwhile, Ilya instructs athletes on how to put into sparring practice specific strategies that will reconfigure a competition fight scenario – modulating the intensity of the match by, for example, creating frustration, being patient, suddenly lifting the work rate. As the athletes learn to reconfigure the fight scenario in particular ways, they learn to undo the opposing player who is forced to recompose themselves in relation to the changing intensity of the fight. The aim of the athlete is to accumulate the power to affect and be affected in *this* moment of *this* fight at *this* competition.

Ilya, like all the coaches in the study, has a plan for each session. However, the plan evolves in relation to how the athletes are responding both individually and as a group – technically, physically and emotionally. The coaches are highly skilled at assessing how their athletes are performing in a variety of situations, interpreting their behaviours and adjusting the conditions of the training session accordingly. In the competition scenario, the same process is in play – just under much more pressure. Coaches in-form athletes from the coaching-chair on the side of the court, as does the athlete's own thinking-sensing-moving body – supporting them to “shift-in-form, to create-with information” (Manning, 2009, p. 212) and (with hope) move into a winning position. They improvise when unexpected situations arise, experiment when the circumstances are not favourable, and sometimes they also fail.

Intuition. Taekwondo coachwork is a practice that requires a finely attuned sense of the affectivity in play at any given time. Strong intuition is a pedagogic practice that is key to keeping athletes physically and emotionally safe at both training and competition. Tuning into that ‘sixth sense’ is what gives the coach the ability to call off a fight because they know their athlete will get knocked out or end a training session early because they know someone is about to get injured. They must trust and follow their intuition to prevent their athletes from being harmed; the consequences of not doing so are significant.

Ilya tells a story about Ang, the other head coach at the club. She describes how Ang has an uncanny knack for knowing when to end a training session before one of his athletes gets seriously injured. On several occasions, Ilya questioned his decision to finish early – Ang ‘knew’ that it was time to finish up but could not necessarily give reasons for how he came to know this. On each one of these occasions when Ang's judgement was questioned, and he subsequently pushed on – at the request of another coach who had not been in the session – an athlete got injured. Coach Ilya reflects on this during our interview, saying, “I never question his judgement now”. This intuition can also materialise in more subtle, implicit ways. The athletes are ‘out of sorts’ so Ang starts a training session with games he would normally

play with younger kids. A joke is cracked at a tense moment, and everybody laughs, the air clears. Ilya notices the athletes are beginning to ‘fray’, so she pulls back a little. These are instances where intuition has materialised in everyday practice.

The thought and unthought, conscious and unconscious are not dualistic categories that work in opposition to each other, but they are part of the one, mutually enfolded dimension (Semetsky, 2013, p. 77) connected through a multiplicity of relations, implicated in each other. Drawing on Deleuze, Semetsky (2013) further explains unthought thinking as “The deep layer of inner knowledge buried in the unconscious mind (which) expresses itself amidst the folds of experience comprising dynamic matter permeated by fluid forces” (p. 78). It is the *infrathin* (Manning, 2016a), or threshold space where body and mind mesh into *bodymind* and “we become capable of perceiving the seemingly imperceptible” (Semetsky, 2013, p. 79). It is in this space of meshed *bodymind*, or an intelligent flesh-mind-matter compound’ (Braidotti, 2013, p. 352) that a sixth sense arises – intuition, or a “presentation of the unconscious” (Deleuze, 1994, p. 192). Intuition or insight can be likened to the transversal lines of a rhizome which, because its spreading growth occurs underground, evades regular perception. The intuitive space of *bodymind* is inhabited by “subtle affects and sensations” (Semetsky, 2013, p. 83) that practise upon coach and athlete, and coach and athlete practice. Remaining open to the unthought thoughts of *bodymind* requires a practice of not overthinking.

Immersed in a sparring exchange, the two taekwondo athletes, much like Deleuze’s swimmer and wave (1994, p. 27), must learn to beat their opponent or face the prospect of being beaten, and taking a beating. In the fleeting moments of the fight, the athlete is thrust into an intense and predictably unpredictable situation whereby they must work with their *bodyminds* to anticipate and respond to the force of their opponent’s attack, counter-attack and defence in a pressure situation where they do not have time to think. They face the unknown (unpredictable relational patterns) and the not-yet-known (not-yet-predictable relational patterns) in the known situation (predictable relational patterns) as a “unified *bodymind* assemblage that includes the unconscious, as yet *aconceptual*, dimension” (Semetsky, 2013, p. 89). Similar to Deleuze’s swimmer, the taekwondo athletes create his or her “as yet unknown territory anew by integrating the unconscious into consciousness by learning how to [spar] in practice” (Semetsky, 2013, p. 87).

Summary

Coaches, athletes and taekwondo itself are involved in ongoing material processes of becoming. Their realities assemble in sets of practices that recur in similar patterns across the globe – albeit anchored in the specificities of different clubs, venues and organisations. The

fight pedagogy of this study's focus club unfolds in a relatively stable fight program assemblage with pockets of productive instability. Stabilising lines (molar lines) produced by device-like strategies such as the GMS, GAL and the Kukkiwon belt system structure the practices of the dominant Kukkiwon-style of taekwondo. These structures give rise to lines of specificity (molecular lines) that produce deterritorialising affects and create space for coaches to explore the creative potential of their particular style of process-orientated coach practices.

The coaching team can be understood to collaboratively participate in a distributed pedagogy that, while predominantly human-centred, is still contingent on the agencies of more-than-human participants. The resulting fight program pedagogic assemblage is dispersed across sites and practitioners but always comes from a position of 'becoming minoritarian'. The resulting enactment of a 'minor pedagogy' is grounded in a relational ethics of affirmation, enhancement and joy. This has important implications for coachwork in an emotionally charged learning environment which necessarily normalises kicking and striking (violence?) and has the potential to make athletes vulnerable to abuse. Ethical practice goes well beyond the idea of 'athlete protection' and becomes about creating a training environment that mutually capacitates all participants, deliberately moving relations in an affirmative direction. As Bignall (2010) suggests, relations beyond enjoyment are critical.

Affect plays a significant role in the overlapping fight-training and fight-competition assemblages. A fight pedagogy involves coaches sensing and responding to the affectivity of a given scenario, actively intervening to produce desired outcomes (such as 'resetting' the athletes). It also involves teaching athletes how to do the same in order to control a fight (e.g., by reducing or enhancing the intensity of a fight). However, human actors are only part of the fight club assemblage, which is also constituted by the contingent agencies (and affectivities) of nonhuman entities. Therefore, affectivity can never be fully controlled. Affective interplays always hold the potential for spontaneous happenings, serendipitous learning encounters, and a pedagogy that has a life of its own.

Yet there are strategic practices that the coach-practitioners use to mediate affect – to a point. These act as teleological strategies that assemble as coachwork, constituted by practices of carework, building resilience, bodywork and intuition. At times, the distribution of the affectivity of a fight assemblage shifts and athletes are afforded greater influence on the unfolding affective interplays between sparring pairs. When fighting well, athletes enfold body, thought and action into a single dynamic. They become immersed in 'in-the-moment' processes (body-events) of mattering, meaning-making, and affectivity to perform with

strategy, technique, creativity, capacity to remain calm under pressure, and quick thinking-in-action.

Taekwondo is a sport that makes salient the mutual implication of reason, emotion and affect. Coaches explicitly instruct athletes on this by setting up fight scenarios which enable the athletes to gradually develop their capacity to affect and respond to being affected. The coaches know that athletes must have repeated sparring encounters with other athlete-bodies to develop their ability to fight competitively. They must have constant opportunities to put their developing skills into practice. Moreover, while the coaches can stage scenario training and pressure situations at the club to this end, the ultimate test of whether the athlete has developed is their competition performance. “To become a good competitor, you must compete”, the coaches repeatedly tell athletes.

Map Fragment VII: What Happened to Data and Me?

Topological coordinates: D5, E5

Imagine the document you have before you is not a book but a map. It is well-used, creased, and folded so that when you open it, no matter how carefully, something tears and a line that is neither latitude nor longitude opens in the hidden geography of the place you are about to enter (from Kim Mahood, Position Doubtful, 2016, p. 1).

Data as Agentic Maps

Data guided my PhD research journey, putting up obstacles here, opening passages there, pointing me in the direction of further data encounters everywhere – all whilst teaching me how to engage in the vibrant and multiple realities that constitute research. At the beginning of my PhD, data were relatively unproblematic. My masters research training had schooled me in conventional qualitative data collection and analytical processes, leaving me confident in my ability to systematically deal with ‘brute data’ that I would *find* ‘somewhere out there’ (St. Pierre, 1997) and then order, code, categorise, and thematically analyse. I had assumed a practice that subordinated data, making them a slave to the research process. And in their slavery, data lost their vitality – as Denzin (2013) points out, “data died” and it was a while before anyone noticed (p. 353).

However, data hadn’t really died, they had transgressed (St. Pierre, 1997). Data reached out from a grave dug by persistent humanism and the certainty of ‘scientific’ knowledge practices to trouble the very notion of themselves. Empirical case studies emerged that show how knowledge and reality are not distinct from one another (Callon, 1986; Callon et al., 1986; Latour & Woolgar, 1986) and researcher-researched-research relations were problematised. Taking Barad’s (2003, 2007) concept of *intraaction* (to convey the co-constitutive nature of data, researcher and researched) rather than interaction (which assumes there are separate entities that interact), I came to understand data less as things and more as doings – data *intraactions* if you will. In the process, I began reconfiguring data in this research assemblage as agentic (un)doings and (un)knowings (Koro-Ljungberg & MacLure, 2013). I entered a brave new data world that aligned much better with the research project I was doing – a world where “data are no longer an inert and indifferent mass waiting to be interpreted by our analytic ability or our systems of coding” (Aberton, 2018, p. 6). Instead, data encounters guided, provoked, resisted, and generated research practices, configuring researcher-research-researched as much as researcher-research-researched configure data. I now know this, but

this knowing still has one foot in a place of unknowing. It is a partial and contingent knowing, or (un)knowing.

What I did not know is that working with data transgressions, data (un)knowings and data (un)doings is easier said than done. Nobody writes about how hard data can be to work with – or maybe I did not read it. In getting caught up in romanticising about what post-qualitative research methodologies had to offer, I ignored the risk that comes with such possibility. In my defence, many post-qualitative accounts of datawork are celebratory, aesthetically pleasing, beautifully crafted – moving even – and thus the difficulties, the grappling that goes on, can be smoothed over. By emphasising the new, the possible and the creative, post-qualitative accounts of datawork tend to leave out the way the nitty-gritty of ‘reconfiguring data as agentic (un)doings and (un)knowings’ gets caked under fingernails and ingrained into pores – refusing to be washed out in time for dinner. Before embracing this new data world, I would have done well to take heed of that sign instructing me to ‘Beware of the Data’. But I did not.

A Rupture

Sometime after ‘finishing’ my fieldwork and before producing an analysis of data thus generated, I got stuck. An all-consuming, quicksand kind of stuck. I had done oodles of theoretical and methodological reading. I knew what I wanted to do with the data. I had found exemplars. I had made many attempts to work with my data (as if they could ever be mine). However, they systematically resisted my advances, rebelling, becoming increasingly unruly and more overwhelming the harder I tried. They would not bend to my carefully formulated analytical approach; they would not allow an order to be imposed on them – however lightly. They would not, could not, do as they were told – no matter how I cajoled them. Nor would they do any coherent telling.

My project grinds to a halt. A crisis unfolds. I call a supervision meeting. What am I to do with all this data? My supervisors do not tell me what I want to hear. No step-by-step instructions ensue. You know what to do, they say. But I don’t know what to do. A rupture. Self-doubt is all pervading. ‘Something tears and a line that is neither latitude nor longitude opens’. Is this a creative line of flight into the ‘hidden geography’ of data-space? Or a path of annihilation? I cry. I am not a crier, but I cry. Hot tears well up and then make an escape, deep sobs that will not be held back follow, snot runs, I look at my hands. A supervisor kindly asks, “Where does that leave you, Sarah?” and I choke out the single thought that is gripping me, “I just have to do it”. Then I repeat, what in that instant has become painfully clear, “I just have to *do it*”.

Becoming Arts-Based Researcher

Everything changed. This was a turning point in my PhD work. In this excruciating instant, I made some game-changing realisations. My words that were sobbed into the meeting room, “I just have to do it”, could not have been closer to the ‘truth’. I simply had to *do* the data. It had to be a hands-on practice-based doing too. A resolve formed in the rawness of the encounter. I would become a data wayfarer. I would care a little less, yet care a bit more (care differently?). I would create ways of working with data and for data to work with me. I would create entry points into this strange new data relationship. Multiple entries. I (re)turned home to my arts-based practice to ground myself, and in so doing I pulled it into my research practice. Arts-based research practice, Leavy (2015) tells us, “requires us to think and act like both researcher and artist” (p. 27). I know how to practise as an artist; it is spun into every fibre that constitutes the ‘intelligent fleshy-matter-compound’ that is my becoming. By tapping into my artistic practice and joining it with my becoming-researcher-self, I was able to escape the threat of data quicksand. My supervisors were right – I did know what to do, it was just that I hadn’t thought it yet. It was an unthought thought (Semetsky, 2013), or an (un)thought, that I was forced to think during the shock of the supervision encounter (Deleuze, 1994).

All of a sudden, I was no longer lost in a vast ocean with marauding data-monsters trying to swallow my barely seaworthy boat. I quickly ditched the boat altogether, finding the ocean was much less hostile than I had anticipated. Rather, it was teaming with life-affirming possibilities, like a veritable primordial soup. Tentatively, at first, I began to ‘do my data’ in different ways, in different spaces. I listened to data, I stopped overthinking it and started working with a more intuitive, arts-based research practice – a practice that was already my familiar from years of artistic practice, and then more recently teaching in visual arts. I performed data – *The Gadfly: Doing Data Differently* – in collaboration with a colleague (Healy & Morrison, 2017). I re-membered data, coming to understand an installation I had made with data (Figure 29) – *Red T-Shirt* – as part of my research (Healy & Frencham, 2016b). I became data, as did the various sketches of the human pathology museum and the fight squad training sessions. I mapped data (and data mapped me) – spending one day per week together in a visual art studio at my host university in Semester 1, 2018. Then, with these maps, I entered another collaboration with a digital artist, and together we produced an animated cartography (Figure 35), *Folding Apart I, II* (Healy & Dockerty, 2018b).

I collaborated with data too. I coded them – they decoded and recoded me; I pulled them together, then they burst apart. I introduced theory to data and data introduced me to theory. Finally, after many months of grappling with each other, this datawork became the

three cartographies of my (our?) thesis. The *intraactive* process was messy, bodily, sweaty, affective, creative, artful, collaborative, material work. Accompanying this was the growing realisation that there is no beginning or end to datawork. It is a continuous process that defies the stop and start dates on ethics applications or funding agreements or PhD enrolment.

Arts-based research practice acts as a lens, or better a method, through which research can be done. And undone. It is a process-orientated view of research that blurs the boundaries between different research phases, producing “synergy between the form and content, as they shape each other and, in turn, expand how we think about our role in shaping knowledge” (Leavy, 2015, p. 23). As such, it aligns with studies (like this one) concerned with the emergent nature of social, material and affective life – offering a variety of ways to explore their (our?) unfolding relations. It is an approach to doing data that embraces the experimental while allowing for flights of fancy to be made. Most flights of fancy did not land on these pages, but they did perform an important function nonetheless. This was to open up multiplicity in my contingent practices of meaning-making, mattering, and affectivity. Spontaneity, experimentation, intuition, gut feelings all participated in the datawork alongside more established analytical processes of coding, writing and storying. I never did tame data. I know now that any attempt to do so would be futile – harmful even. However, through a series of arts-based engagements interspersed with coding and written analysis, I made something vital *with* data. Data did not die.

Each day I ask, how are data today?

Interlude: Folding Apart

Topological coordinates: E6



Figure 35. *Folding Apart* (Healy & Dockerty, 2018b). Animated map exhibited in 'Community: Becoming With' at the seventh annual Teacher As Practitioner Exhibition, studioFive.

Click on map to see animation

Alternative access

<https://doi.org/10.26188/5cfoae132c9cc>

"This cartographic styled work is as much an artefact of research as it is an artwork. It is the product of a collaboration between Sarah (as researcher-artist) and Hannah (as digital media artist). The map is not an accurate representation but a creative engagement with a site where not only did Sarah's PhD research take place, but also where Sarah and Hannah would connect annually on summer holidays. The map itself is now a site of (re)connection as we continue to develop our professional and personal practices in different cities - becoming together apart" (Artist statement in exhibition catalogue, Healy & Dockerty, 2018a, p. 25).

Map Fragment VIII: What Intense Pedagogic Affects Do

Topological coordinates: B6–D6

At the start of this project I asked, how is pedagogy practised ‘in’ intense learning environments? I wanted to generate empirical material that would illuminate how affect worked to enhance or reduce the potential for learning in a range of contexts, with a particular focus on intense affects. A key realisation to emerge is that affects are constitutive of the dynamic forces that emerge in *all* practices, pedagogies and educational programs – forces that may or may not be pedagogic or intended. Put simply, there is no such thing as ‘affective pedagogy’, as this would imply that there is pedagogy that is not affective. Instead, my analysis shows how *pedagogy that occurs ‘in’ intense learning environments works predominantly from the crack as a ‘minor’ pedagogy* – or pedagogy in a minor key (Deleuze & Guattari, 2013).

Minor pedagogy has value because of its power to crack open taken-for-granted pedagogic orthodoxies, not by opposing them but by creating space(s) for inventive, expressive, intensive practices to emerge in and between existing regulatory forces. Minor pedagogies are doings. They are produced in processes of minorisation and can be understood as an ‘ethics in action’. Braidotti (2006a) claims that “Cultivating the ethics of living intensely in the pursuit of change is a political act” (p. 251). In an extension of this, I argue that cultivating an *ethics of learning intensely* in pursuit of change is also a political act. Pedagogy in the crack is an affirmative act of resistance, involving everyday activism in all kinds of ordinary, localised contexts that create the conditions to learn intensely. There is extraordinary power in the ordinary, with the potential to make incremental educational and broader social change through the everyday practices that play out on a micropolitical level.

In what is to come, I mobilise the topology of lines introduced in the methodological section of the thesis (Table 3). In effect, the topology of lines works as an analytic approach that anchors the process of mapping the cartographies of a sculpture event, human pathology museum and fight club onto each other. The analytic of lines provides the tools to better account for the pedagogic practices that produce and are produced by micropolitical forces of pedagogic affects. I break this mapping work into two parts. The first part is this part, Map Fragment VIII (topological coordinates B6–D6). It engages with the first sub-question of the research: What do intense pedagogic affects do? Or in other words, what do intense pedagogic affects *produce*? It may come as no surprise that the short answer to this is bodies. Pedagogic affects produce bodies that are variously in/vulnerable and prone to cracking. In educational

contexts, bodies are chief sites of the learning event. So this is where I start my discussion, before introducing the concept of pedagogy in a minor key.

To achieve a cohesive account of how a minor pedagogy unfolds ‘in’ intense event-assemblages (learning environments), I found it necessary to augment the conceptual tools offered in a Deleuzian philosophy of affect with an after-ANT approach to practice (Feldman & Orlikowski, 2011; Fenwick, 2014; Law & Mol, 2002; Mol, 2002, 2008; Orlikowski & Scott, 2015; Singleton & Law, 2013). This allowed me to extend my account of how minor pedagogies emerge in relation to the Major, are activated, and then are ordered through particular *malleable mechanisms* that I call crackwork.

This leads into the second part of the mapping work, compiled into Map Fragment IX: Cracking Open Pedagogy (topological coordinates A6–C6). Part two engages with the second sub-question of the research: What are the effects of intense pedagogic affects? Or in other words, what is the ethical and political work that intense pedagogic affects do? In this section pedagogy is cracked open, as are the spaces of pedagogic practice, to show how the dynamic flows of affect act on learner-bodies and pedagogical bodies – to open up and close down possibilities for ethical action.

Bodies

The cartographies produced in Map Fragments IV, V and VI, take up the idea that “we may affect matter but matter also affects us in profound, although often subtle or hidden and inescapable ways” (Hickey-Moody & Page, 2016, p. 15). These affects can be fleeting or more enduring, and also have effects on bodies which are often evident in bodily responses. Bodies themselves are varied and multiple. They may materialise as detached bodies, fragmented bodies, pathology in the body, body parts, museum bodies, sporting bodies, athlete-bodies, coach-bodies, artist-bodies, bodies of knowledge, bodies of artwork, fungi bodies, earth bodies and so forth. For Deleuze and Guattari the body is an assemblage of dynamic relations and capacities to affect and be affected (Deleuze & Guattari, 2013, p. 260).

A body is actualised in relation to its ongoing encounters with and in the world. Human bodies assemble at a molecular level and can themselves be thought of as intelligent, rhizomic assemblages pulsing with affectivity. These take human form for a time, a life-time in fact. From conception, the body grows, shrinks and changes. It is organised, regulated and activated by internal and external forces that render the body more or less vulnerable. The human pathology museum serves as a stark reminder of the human body’s vulnerability to disease and death but also speaks to the adaptability and endurance of bodies. When an individual dies, the body assemblage may live on posthumously, sometimes in a reassembled

state. At the museum thousands of fleshy bits from human bodies quite literally reassemble in the body of the museum to create a veritable Frankenstein, replete with medical technologies, preserving materials, display cabinets, and an app, forming an ongoing connection with the wider world via social media. “There is never a ‘final state’ of identity, because the body is always in a process of becoming and thus is an endless multiplicity” (Zembylas, 2007c, p. 24); therefore, emphasis is not on what a body is but on “what a body is capable of doing and consequently, what embodied affects can do” (ibid).

Vulnerability. The diverse settings from which the cartographic work extends express what pedagogic affects looked, felt and sounded like in a wide range of scenarios to an equally wide range of bodies involved in learning – for example, the learning that occurred through an encounter involving fungi, viticulture waste stacked into a tower, an artist and children with a growing sparkle in their eyes straining to hear the fungi eating. Or the learning that occurred in the moment the NZSL group encountered *Untitled - Whakanoa* and were confronted by the realisation they had unwittingly entered an urupā area. Or the learning that dawns more slowly as taekwondo athletes gradually increase their capacity to control a fight by training under increasingly pressurised conditions. Despite the diversity of learning going on, what is common to the experiences is that they stem from an embodied encounter or series of embodied encounters. And not just any encounter(s), but those where the learner-body is affected⁷¹ – because if affect does not act on the learner-body then the encounter is merely one of re-cognition. Without affect, Baker (2008) explains, “Facts may be imparted and information about a subject or object accumulated but without leaving a strong impression. In re-cognition people receive what they largely expect to receive; they remain contained within their usual thoughts” (Baker, 2008, p. 26). It is the capacity of a body to be affected, an openness, *a vulnerability to affect*, that enables a strong impression to be received.

Becoming vulnerable is a critical part of a learner-body developing the capacity to affect and be affected. A pedagogy that sets the conditions for vulnerability is critical because learning, as demonstrated in the empirical component of the research, is inextricably connected to affecting and being affected. M. Lloyd (2015) notes that ‘becoming vulnerable’ is a process of becoming sensitive and responsive to that which is beyond the bodymind. Vulnerability in this sense is not about being physically susceptible to disease or injury but is instead about developing a sense of openness to being affected – and in turn affecting others. In the museum, an encounter with the collection entails a confrontation with one’s own

⁷¹ While learning is understood as a dual process of learning to affect and be affected, the focus here is on the latter part of the process. The former will enter the conversation in due course.

mortality. However, while the reality of death is accentuated, it does not make death or disease disabling. Instead the encounter may make the bodymind more susceptible to entering crack-spaces, shaking it out of familiar lines of thinking as argued when discussing the *Zombie Apocalypse Survival Course*. Conversely, invulnerability shuts down learning by shutting down the capacity to affect and be affected, and therefore learn. As demonstrated when a taekwondo athlete refuses to acknowledge their role in losing a fight, making themselves invulnerable to criticism by shifting the blame to the equipment (e.g., slippery mats or misbehaving electronic scoring system), or the referees, or the coaching. As a result, the learning opportunity that the losing experience presents is lost on the athlete.

Lines of promise-and-threat are future-orientated, and always exist in relation to the realm of what is possible. Threat closes down possibility and promise opens it up, with opening and closing sometimes happening at the same time. A vulnerable body can be thought of as being positioned on the cusp of promise-and-threat, positioned on a potentially generative threshold. For example, the Emergency Broadcast sets the scene of the zombie apocalypse by activating a very palpable dynamic of promise-and-threat whereby zombie-scientists are launched into action, open to the possibilities for learning intensely in the museum. This dynamic allows them to endure the threat of the zombie apocalypse *and* the confronting nature of the museum collection *and* to enter into a sustained (generative) engagement with disease science in the process. However, an accompanying threat (such as becoming overwhelmed) is ever-present, as evidenced by the children who were too scared to come into the museum or could only engage with replica specimens (such as plastic teaching models).

The promise-and-threat dynamic works to produce vulnerability in bodies and the broader assemblage – and thus cracking – which functions to enliven a pedagogy or, as Leonard Cohen (1992) sings, let the light shine in. However, the promise of the crack is always paired with a contingent threat of it ‘deepening irredeemably’ and ‘cleaving in two’ – as when a taekwondo athlete never learns to take a beating and leaves the sport altogether. Or alternatively when *The Journey of a Million Miles* becomes a new exhibit at a maritime museum and the ARCC are not acknowledged in the museum’s marketing material, actualising the ARCC’s fears of betrayal.

Cracks. Thinking through the concept of cracks affords an account of how a body learns with/in an intense encounter. It is this that I now explore briefly before moving onto a discussion of the main events of this research, which assemble around the notion of pedagogy in a minor key.

A body may enter a crack or the body itself may crack, breaking up (or down). Cracks can also become inscribed or actualised on bodies (Deleuze, 2015, p. 160). It starts with “a *movement* of becoming aware, which begins with some dim and vague sense unaccompanied by a *what* that sense might be about. This is so because the person is affected by something initially alien ... the sense grows until the grasp of something becomes definite” (original emphasis, Roth, 2016, p. 100). Thus, re-presenting the sculpture event, the children are invited to approach Chris’ *Kinetic Fungi Tower* and press their ears up against the gnarled trunks to hear the fungi munching – but hear nothing. A crack line forms. Listen harder? No? It slowly dawns on the children that they cannot hear the fungi eating because, while they are numerous, they are also so very small and eat so very differently from how a human would eat – silently. A crack line is silently inscribed, and a ‘sense impression’ occurs as meaning is wrapped around the event (Zembylas, 2007c, p. 26). As the children interpret the encounter, a sense impression forms, thought occurs, and with it the potential to respond (act). The children have a sparkle in their eyes as they start asking questions.

When the actualisation of cracks on bodies occurs over a series of encounters, it might be understood as a process of sedimenting patterns (flows) of affectivity in bodies and things and spaces, to produce a future-orientated affective disposition (Slaby et al., 2019).⁷² This provides a more nuanced understanding of what the athletes and coaches both refer to as ‘muscle memory’, or as Aiden (one of the taekwondo athletes) describes it, as the capacity to ‘go through the motions’. The fight pedagogy involves countless rehearsals of fight scenarios with the intention of laying down specific response patterns, which present themselves as the potential to act in sparring encounters to come. These rehearsals are repeated under different conditions with increasing amounts of pressure (intensity) until the athlete responses become predicable (sedimented patterns), effortless even, able to be performed in-the-moment without overthinking, now or in the future – exactly like going through the motions. It is a thread that connects the athlete-body with training (in the past) and competition (in the future). Past relational patterns will not determine future actions “but act as tendencies in present affective relations” (Slaby & Mühlhoff, 2018, p. 7), co-shaping the athlete’s present performance in relation to a number of other contingencies in the moment, including the skill and affective capacity of their opponent. Coaches continually change-up the conditions under which athletes train to make them more adaptable to always-changing contingencies of scoring systems, referee decisions, time of day, energy levels, slipperiness of mats, and most

⁷² ‘Affective disposition’ is not to be confused with the idea of learning dispositions, an established concept in the field of student motivation that is currently popular in Australian state curriculum documents.

importantly what their opponent brings to the game. Would this suggest there could be an optimal level of sedimentation in a given context? Perhaps there is a ‘tipping point’ where laying down specific patterns of affectivity incapacitates an athlete; s/he becomes over-trained, stale, no longer able to go through the motions. Perhaps this occurs when the ‘e’ (emotion) goes missing from the motion, rendering the athlete unable to receive a strong impression. This is a big problem in the sport, with many clubs unable to hold athletes in their fight programs post-school.

In any case, it links back to the concept of ‘elaborative rehearsal’ (Rinne et al., 2011), whereby a series of learning encounters become linked to each other through processes of meaning-making thus establishing what Rinne et al. (2011, p. 90) call “a more elaborative memory trace”. With this idea in play, it reminds us that interpretive work is still important. Deleuze (1994, p. 27) notes, “To learn is indeed to constitute this space of an encounter with signs”, and Whitehead suggests that it is the capacity to story encounters that produces continuity to experiences (Woodhouse, 2011). Yet we are subsequently reminded that learning also involves both sensing the affective tones of an encounter and doing – a swimmer can only learn to swim in the water, not on dry land (Deleuze, 1994, p. 183). As the empirical material worked suggests, elaborate rehearsal encompasses established patterns of meaning-making, mattering and affectivity. This connects with Watkins’ suggestion that “affects can accumulate to become dispositions providing, at one and the same time, the content of mind and impetus for action” (Watkins, 2006, p. 2), activating the desire and capacity to learn.

Pedagogy in a minor Key

A pedagogy that works with/in intense learning environments is characterised by cracks – cracks in the learning assemblage, cracks in and between its constitutive elements including bodies, cracks that seep intensity. This produces a generative vulnerability in bodies that sets the conditions for learning (as opposed to recognising). These cracks may be entered into, or may themselves become inscribed on bodies, to produce embodied knowhow through a process of elaborative rehearsal. They may also activate the desire to learn. But what are the practices that activate pedagogy in the crack? How is a pedagogy in the crack sustained? How does pedagogic affect vary with/in these practices? And how does an analysis of pedagogy in the crack inform educational practice more generally? I now go on to address these questions in the remainder of this map fragment, framing the discussion with the concept of ‘minor pedagogy’, with the notion of a minor pedagogy being derived from the concepts of the minor text or minor science (Deleuze & Guattari, 2013).

Pedagogy in a minor key has similar aims to that of the minor text, which is “to give rise to *intense*, and *intensive*, *expression* ... [and] ... *express intensities*, to capture forces, to act” (emphasis added, Lecerle, as cited in Honan & Bright, 2016, p. 734). It is a pedagogy with a sensibility that aligns with what Hickey-Moody (2013a, 2016) refers to as an aesthetic pedagogy.⁷³ The dynamics and characteristics of the affects flowing through an assemblage give the pedagogy its particular sensibility or aesthetic. The minor’s sensibility is to do with *becoming*, heterogeneity and distributed flows (Deleuze & Guattari, 2013, p. 421). It is a subsystem composed in and of crack lines and has “a high coefficient of deterritorialization” (Deleuze, as cited in Bogue, 1997, p. 104). In an educational context, a minor pedagogy ‘minorises’ a Major (regulatory, structuring, determinant) pedagogy by introducing an element of indeterminacy. It is likened to pedagogy in a minor key “in the sense that a minor key in music may be said to chromaticize and destabilize the harmonic order of a major key” (Bogue, 1997, p. 105). Conceived in this way, the minor is not a ‘thing’ but is more precisely a *process of minorising* the Major (Honan & Bright, 2016): an undoing of established pedagogies and essentialised notions of the pedagogic body. In the same way that political satire minorises the dominant political discourses of the day, minor pedagogies minorise Major pedagogies underwritten by dominant educational discourses such as social constructivist accounts of learning which have historically privileged social, rational, cognitive and linguistic ways of knowing.

The Major emphasises the constant, replicable, normative and categorical. It is to do with *being*, homogeneity, fixed boundaries and predictable outcomes. In contrast to the minor, which is located on the edges, pedagogies in a Major key work from the centre to replicate themselves and overcode minor variants with standardised and/or regulatory practices. The standards of standards-based assessment provide an educational case in point. In Australia the Major is enacted in its drive for student-centred models of learning and the roll-out of a national curriculum. Another example is the adoption of “prescriptive formulations” of emotional literacy and emotional management pedagogies which enact normative “ideas of what counts as ‘correct’ and ‘proper’ or suitable emotions” (Boler & Zembylas, 2016, p. 27). Major pedagogies are associated with systems that categorise, e.g., the

⁷³ I do not take up Hickey-Moody’s line of work that positions ‘affective pedagogy’ as a stand-alone concept because it problematically suggests that there are pedagogies that are not affective. Since all pedagogy produces affect, including orthodox and regulatory pedagogies that align with the Major, I suggest that Hickey-Moody’s (2013) proposal of affective pedagogy (which she also connects to aesthetic pedagogy) might be better understood as a pedagogy in a minor key.

Australian Tertiary Admissions Rank (ATAR), and endorse normative educational practices, e.g., SEL or the National Assessment Program: Language and Numeracy (NAPLAN).

In the research event-assemblage, an obvious example of a Major pedagogy is the World Taekwondo endorsed ‘Kukkiwon Taekwondo’. However, there were also less obvious Major pedagogies at work with/in the targeted events, co-existing with/in the minor pedagogies. For example, the master narrative of the heroic scientist enacted through the Hollywood genre of zombie movies can be seen to act as a Major pedagogy. This is because it is intentionally incorporated in the program design to produce an overarching storyline that holds the zombie learning assemblage together, connecting past, present and future events in a structured and predictable way. Likewise, the Olympic narrative produces an overarching storyline for athletes (and possibly coaches) to grasp when the going gets tough, holding them in the fight club assemblage. The point here is that the Major and minor are not mutually exclusive. They occur simultaneously. And while the Major may produce controlling and regulatory affects, these are not inherently good or bad; they simply *do* different things.

Major pedagogies can play a significant role in structuring a given learning event-assemblage and sometimes, as in the case of Major Taekwondo pedagogy, not only creates the conditions for a minorising pedagogy (e.g., the fight program) to emerge but also acts on this pedagogy in ways that hold it together. The more didactic conditions of learning produced by Major pedagogy may threaten diversity and complexity but also promise stability and conformity. This can be productive. As Watkins (2006, 2015, 2017) argues, there is value in the didactic pedagogic affects produced in both human and nonhuman instruction, whether performed in a human-teacher-centred literacy classroom or by the built environment in order to promote orderly conduct in a shared social space. This is demonstrated by practices of explicitly teaching children “a particular social ethics of the body within the institutional space of the school” through a didactics of ‘human instruction’ *and* ‘non-human instruction’ as performed by the built environment (Watkins, 2015, p. 26).

The minor functions to undo what ‘is’, creating space for new becomings. When this undoing generates affirmative relations, the minor gives life to the Major, keeping it alive, “turning its freezing potential into a stream, an ongoing process” (Lecerle, as cited in Honan & Bright, 2016, p. 735). For example, the fight program becomes the heart of the taekwondo club, although the majority of students engage in the Major Taekwondo pedagogy. They must progress through the Kukkiwon belt system to achieve their black belt in order to become full fight squad members and be eligible for a World Taekwondo GAL. The fight program energises the practice of future athletes and the coach-practitioners in various ways. It

provides a ‘post black belt pathway’ that motivates athletes to continue in the sport, it creates (exciting) opportunities for national and international travel for all abilities, it brings international athletes to the club to train, it keeps coach practice current and connects coaches with the international taekwondo community. Once in the fight program, training alongside Olympic athletes and World Champions also allows the athletes to dream of making an Olympic or World Championship team themselves one day – they dare to dream because past athletes have already done so and succeeded.

When approached affirmatively, didactic lines of a Major pedagogy can transform into enabling constraints, which “is positive in its dynamic effect, even though it may be limiting in its form/force narrowly considered” (Manning & Massumi, 2014, p. 93). The concept of enabling constraints is useful for understanding how affective flows that have regulating effects still have the potential to provoke learning – they are not forces to oppose but forces to work creatively and critically with/in. For example, when children visited the human pathology museum without the structure and focus that the zombie program provided, they would stay on average 20 minutes. Flows of unconstrained *intraactions* were not sufficient to enable creative practices to unfold (ibid). However, when the children did the *Zombie Apocalypse Survival Course* (or the *Brain Science* program), they stayed for two hours – even though they were free to leave at any time after the Emergency Broadcast had been played. The constraints of the program enabled the children to connect with the museum collection in multiple ways and experience learning that was not overly predetermined by the pedagogy at hand.

To reiterate, Major and minor pedagogies are *not* opposing forces. They depend on each other for their existence, and often operate simultaneously. In this study the fight program carves out a crack-space in the orthodoxy of World Taekwondo assemblage and the master story of the Olympic dream. At the hSOTG event (as outlined in the exhibition catalogue) a Major pedagogy is to celebrate and reinforce Waiheke Island’s reputation as a creative and artistic hub located on the jewel of the Hauraki Gulf. Yet *Untitled – Whakanoa* quietly undoes this by insisting people remember Matiatia is a culturally significant site of burial, and providing the materials (water source) for visitors to enact a new way of knowing the cultural history of the land. The zombie program carves out a crack-space amongst the more conventional science-museum educational programs like the permanent exhibit *Know Your Enemy* and Higher School Certificate exam revision. Yet it also makes use of the master narrative of the zombie-scientist, which runs along a Major line, emphasising the significance of what Major *and* minorising processes do.

But how do minorising pedagogies emerge in the situated practices of affect-intensive event-assemblages? And how best to talk about the complexities and complications that arise when the Major co-exists with/in the minor? The language of lines is useful, with the Major aligning with the molar or rigid line, the minor aligning with the molecular or crack line, and the additional concept of the rupture. However, the line analytic did not fulfil my need for the conceptual tools to think and talk about the mechanisms that activate and modulate the different lines. Turning to Singleton and Law's (2013) empirical engagement with practices as devices, I now introduce the concept of 'pedagogic devices' to enable me to better account for the complex practices that produce the pedagogic affects that unfolded at each learning event-assemblage of this research.

Pedagogic devices. Devices are mechanisms of repetition that promise a stable reality or an enduring assemblage, resisting the threat of instability but also risking creative potential. The pedagogic affects of Major and minor pedagogies are ordered by different types of devices; some are more explicit and others are more implicit. *Explicit devices* such as the World Taekwondo's GAL and GMS systems travel along rigid lines and tend to align with Major pedagogies and their orthodoxies. These pedagogic devices have a high degree of intentionality and dominance. They work from the centre to reproduce, structure and stabilise but also divide, categorise and stratify learning into grid-like formations. In the school education system, explicit pedagogic devices might materialise at a system level as a National Curriculum or Australia's NAPLAN; at a school level they might take the form of the timetable and separation of select entry students for accelerated learning.

Explicit devices become pedagogic when bodies learn (or are disciplined) through the didactic affects they produce. However, sometimes bodies resist and become undisciplined. Bodies connect with other bits of bodies to affect change with/in each other – a process that can be combative if one body (such as an authoritative pedagogical body) dominates other bodies (such as learner-bodies). In highly regulated educational spaces, "particles of bodies, the body fragmented in affect, continually batter against the armour of the pedagogical body, they thrust fears and curiosity into the center stage of the classroom" (Probyn, 2004, p. 37). However, there is always a possibility that the students' fears and curiosity will fracture the authoritative armour of this type of pedagogical body and create openings, possibilities for invention.

At the sculpture event, OH&S regulation acts as an explicit device by configuring practices of the sculpture event in deterministic ways. OH&S inductions are conducted. Pōhutukawa trees are wrapped in orange cloth, everyone on-site wears fluoro safety vests, and

signage alerting the public to various threats is erected. The artists and their volunteer crew must report to the site manager daily and wear protective gloves, hardhats and sunscreen, and are subject to random OH&S ‘walk-throughs’ by local government officials. The sculpture-walkers are instructed to clean soil off shoes at Kauri dieback stations, stick to the track, walk in the ‘correct’ direction of the loop, and obey warning signs. Volunteers ensure the sculpture-walkers comply – or at least reduce the threat of non-compliance. Didactic affects are (re)produced in all these practices. Individuals are compelled to participate. However, there are cracks. Resistant practices interrupt the work of the structuring devices, creating breathing spaces where invention can take place. People vote for orange-wrapped Pōhutukawa trees to receive the People’s Choice Award; the OH&S inspectors get caught up in a joke about a volunteer’s wobbly legs at the top of scaffolding. Most of the artworks also perform a minorising function. The social practice artworks do so by activating a dynamic line of advocacy-and-antagonism⁷⁴ to deterritorialise the regulated spaces of the sculpture event, making room for minorising pedagogies to take place. The buried gemstone does it by infiltrating the bodyminds of the sculpture-walkers – deterritorialising a space in thought.

The focus of the minor pedagogy is not on producing a constant pedagogic system but on the process of minorisation, or entering the crack. Within the crack, recurring practices (refrains) perform *device-like*⁷⁵ functions and thus can be understood as *implicit devices*, or *malleable “mechanisms of repetition* that work by resonating with, and reproducing patterned – and patterning – relations” (emphasis added, Singleton & Law, 2013, p. 265). Rather than imposing a rigid system like explicit devices, implicit devices work to hold open a new space ‘between’, a space in which local realities may be enacted. They therefore inhabit “a threshold of diminishing resistance, or a rising threshold of demand” (Deleuze & Guattari, 1983, p. 73). They mobilise “untapped forces and energies and set(s) them to the task of sustaining processes of de-territorialisation” (Braidotti, 2013, p. 353). In other words, the pedagogic work of the coach, museum educator or artist may either “hold off the demands of devices with colonising ambitions” (Singleton & Law, 2013, p. 261) or alternately hold off “the forces of chaos” (Deleuze & Guattari, 2013, p. 362).

The Emergency Broadcast is an excellent example of an implicit device in action. In the absence of a central human body, the staging of the Emergency Broadcast video at the beginning of each program acts as a refrain, deterritorialising a space for the survival quest to

⁷⁴ As explained previously in the cartography of Sculpture in the Gulf chapter.

⁷⁵ The terms ‘device-like’ and ‘implicit device’ are more or less interchangeable. They are ‘subordinate’ in that they are generally associated with the minor although not exclusively so. Similarly, the terms ‘device’ and ‘explicit device’ are also interchangeable. They are ‘dominant’ because they regulate, impose and do Majoritarian work.

unfold in what might otherwise remain a conventional archive of specimens. The Emergency Broadcast functions to stage the event, activating the museum as an archive of affect while giving purpose to the zombie-scientists' material engagement with the museum collection. It is mechanistic but does not seek to control or eliminate the delirious flows of affect. Instead, it creates the conditions for the delirious-and-didactic dimensions of pedagogic affect to activate the zombie apocalypse scenario, and act on the becoming-zombie-scientist-bodies. The Emergency Broadcast is one of many teleological strategies that are constitutive of the survival quest – another device-like mechanism that gives order to what might otherwise be a chaotic or overwhelming experience. While the survival quest structures the zombie learning assemblage, it is not a colonising or hungry device in the sense of the GMS of World Taekwondo. It is not imposed on the zombie-scientists but acts more like an invitation to play along – always with the option of opting out or changing the storyline. As an implicit device (or a refrain), it folds into the minorising processes of the pedagogy of the (un)dead. The minor pedagogy works from the crack to become what Braidotti (2013) describes as a “privileged starting point for active and empowering processes of transformative becoming” (p. 344), such as becoming-zombie-scientist, becoming-zombie, becoming-(un)dead.

Crackwork. In their study on learning affectively in the museum, Mulcahy and Witcomb (2018) note that “learning only opens up if museum visitors are sufficiently *attracted* to want to invest their labour long enough to gain insight into the issues at hand (original emphasis, p. 228). So what attracts interest and draws somebody into the experience, activating the pedagogy at hand? The cartographic work of this research indicated that without activation, an intended pedagogy would remain latent and the intended learning would fail to come to life, although delirious affects ensured unexpected learning did happen, as for example when the *Kinetic Fungi Tower* inspired the sculpture-walkers to burn it down – not as an act as vandalism but to realise its potential as a beacon and to connect with historical practices in far-off lands.

In all event-assemblages, a range of pedagogic affects acted on athletes, sculpture-walkers and zombie-scientists in encounters that forced thought, capacitating bodies to act newly or differently, and introducing to the pedagogy a sense of a ‘being-aliveness’ (Braidotti, 2009). Watkins (2006) asserts that activating pedagogy is critical to the work of teachers in more conventional classroom spaces too. She shows how practices used to ignite and sustain student interest when coupled with direct instruction enable students to successfully complete set tasks, and learn. Stepping aside from well-worn debates about teacher-centred pedagogy versus student-led learning, Watkins discusses how intensities generated in teacher

practice spark interest, then sustain students in ongoing processes of learning (Watkins, 2006). At the sculpture event, ‘seeding practices’ such as artist talks, guided tours, catalogue and public program events were fundamental to sparking interest and engaging with the *intended* pedagogy of certain artworks.

Practices that activate learning are practices that jolt bodies into thought and action, moving them into a crack. For example, the museum is activated as an archive of affects by the Emergency Broadcast, the fight pedagogy is activated by a coach entering the training room with stopwatch-whistle-stick, a family’s curiosity about fungi is activated by being invited to listen to the fungi eating, a buried gemstone in an unknown location activates a fascination with that which can(not) be seen or found. However, it is not always (immediately) successful. Nor is it necessarily a comfortable experience for the learner – as sculpture-walkers, zombie-scientists and fighters would all attest – so practices that jolt also need to be accompanied by contingencies to support learners to ‘stay with the trouble’ (Haraway, 2016b), or, returning to Mulcahy and Witcomb (2018), to “invest their labour long enough to gain insight into the issues at hand” (p. 228). Practices that (re)activate latent pedagogic affects, or ‘seed’ a pedagogic encounter to come, or sustain the liveliness of a pedagogy over time, do so through the affects they generate, accumulate, circulate and disperse in an iterative process of ‘becoming with’. This crackwork is performed through implicit devices that engage practices of laughing, collaborating, spatialising, storying, moving, and not overthinking.

Laughing. Humour, and the laughing response it often triggers, was one such practice that, because of its transgressive nature, does significant work within a crack. Laughter infiltrated all research event-assemblages, often unexpectedly, sometimes a little inappropriately, and was usually accompanied by a shift in the affective dynamics. Laughter may activate (and is activated by) an unexpected release of delirious affects.

At the museum and during fight training, humorous practices did particularly important pedagogic work, enabling the program participants and athletes alike to endure the confrontational nature of the museum collection or full contact sparring by ‘rendering it small’, reducing its power. Implicit devices act as refrains and “*are ways of making enough space [holding open a crack] to enact local realities ... disconnecting sufficiently from other entanglements to create breathing spaces [cracks] within practices*” (original italics, Singleton & Law, 2013, p. 269). The point about disconnecting is important here. It is what laughter does – disconnects or momentarily detaches the individual or group from the assemblage they are caught up in, releasing them from the particular trajectory of promise-and-threat they are on, moving them into an untethered space, in between that which is known and that which is not.

Often laughter did this by producing a moment of comic relief and shared embodied experience, strengthening the connections with/in the collective.

Collaborating. Collaborations, “doings-in-common” (Neimanis, 2009), are places of pedagogic potential. They are where ‘magic happens’. Collaborations in this research gave rise to intense and intensity producing practices. Collaborative practice is varied and does varied things depending on the affective dynamics of the practice. The collaborative practice through which the *Kinetic Fungi Tower* moves opens an almost imperceptible crack. Fungi, vine trunks and artist join to ‘do’ the fungi tower. This coming together was not effortless but involved a type of active reciprocity that was not about mutual recognition but instead, mutual specification (Braidotti, 2013a). It was marked by a refusal of the vine trunks to conform to the artist’s vision and a necessary surrender of the artist’s control over the artwork and the fungi-work (which mutually constitutes the artwork through ongoing consumption).

The more-than-human collaboration activates a hope that fungi may actually be the salvation of the planet and fear that humanity will realise and actualise this knowledge all too late. And so the audience is drawn into a minor pedagogy enfolded in a (collaborative) performance of vulnerability that also incorporates the macro scale of the planet and the microscopic activity of the all-important yet barely perceptible fungi. Stemming from social arts practice is a line of advocacy-and-antagonism which cracks open an awareness of fungi’s role in creating a sustainable planet while provoking the audience to consider the plight of the planet and our (their) complicity in jeopardising the ‘natural’ environment – why might we (all who co-exist on the planet) need the salvation of fungi? Everyday practices that produce flows of advocacy-and-antagonism are activisms in the crack, or minor activisms, or what Horton and Kraftl (2009) refer to as *implicit activism*, “modest, quotidian and proceeding with little fanfare” (p. 14). Importantly, by moving in the direction of the “affirmative and potentially transformative” (ibid) they are accompanied by an ethical practice. Chris Booth’s radical collaborations with nonhumans are examples of ethical activisms that work in and between the contingent agencies of nonhuman bodies and matter and the environment. They consist of “multiple micro-political practices of daily activism or interventions in and on the world we inhabit” (Braidotti, 2009, p. 46).

Collaborative practice is not always easy to sustain and can often occupy a contested space. For example, when individuals from the resettled community are threatened by the prospect of narrating their own stories of forced migration for *The Journey’s* soundscape, hope-and-fear oscillate, and fear takes over. The project is shaken up. Crack lines appear, though not irreparably deep. Media personalities slide ‘in between’ to do the narrating and the

collaboration grows – extending the reach of the pedagogy inherent in Tiffany’s social arts practice well beyond its original scope. Its promise is realised in an unanticipated way, and in the crack. In a different scenario, one taekwondo coach questions another coach’s decision to end a training session early. A hairline fracture appears. There is potential and risk in training harder. He pushes on. An injury happens and the risk is realised. A deep fracture now. The decision to end a training session early is not questioned again and the fight-training assemblage restabilises. The coach’s intuitive practice becomes more deeply respected by his collaborators.

These three examples show how collaborative practice works in the space between, pulsing with dynamic flows of promise-and-threat, advocacy-and-antagonism. They also show how the collaborators are involved in an ongoing negotiation of micro-powers and agencies. These negotiations are affected by the affective dynamics of the broader context too. In *The Journey of a Million Miles* collaboration, resettled New Zealanders are threatened by the prospect of taking on a speaking role in the arts collaboration. Their stories are published in a book, and while the media personalities may speak them, they also remain unspeakable. The arts collaboration promised to disrupt the antagonistic dynamics of government and public debate *about* refugees but could not ask the collaborators to do something they do not yet have the capacity for. In the crack thus formed, the unfolding pedagogy shifts in relation to the affective dynamics of the growing and changing collective. Some individuals have greater capacity to act (and refuse to act) than others. Vine trunks and resettled New Zealanders increase their micro-powers by an act of refusal. Inaction becomes an implicit activism too. Conversely, the fight coach does not refuse his colleague’s request; his power to act on his intuition is reduced until an injury-event shifts the relations once more, restoring his power to act on his intuition.

Collaborative work involves the ability to negotiate complex affective dynamics that are also infused with power relations. The practitioners in this study were expert collaborators, and brought the capacity to work with/in the affectivities flowing through their programs and projects to the task. They also understood that they often exerted an unequal amount of control in an arts encounter, a training session, or a competition, and actively worked to (re)configure those relations to achieve greater balance – as when Ilya actively set the conditions to give athletes power over decision-making or when Tiffany called in the media personalities to narrate the stories of seeking refuge, circumventing the power imbalance altogether. And sometimes this imbalance is absolutely necessary – as when athlete safety is on the line. The differentiated distribution of micro-powers (in favour of the coach) is

reproduced by the ruling that the act of throwing in the towel to terminate a fight is one that only the athlete's coach can perform.

Spatialising. Spaces are made and remade in relation to bodily encounters with/in them – encounters that may involve a hidden gem, talking boats, an emergency broadcast or a fight scenario. The zombie learning assemblage shows us how, when a zombie apocalypse event is *staged* at the human pathology museum, a crack opens. From the crack, the museum's 'fusty lab-chic décor' and collection of specimens and medical technologies are remade as an archive of affect. Unlike a conventional archive, the museum as an archive of affect repels or invites bodies to the museum quite differently. It arguably gives the (becoming) zombie-scientists greater capacity to enter and act on (or inhabit) space. The pedagogic force of the zombie program can be understood as circulating in ways that enable zombie-scientist-bodies to "extend themselves and create the contours of space while spaces extend the body's capacities to act" (Snaza et al., 2017, p. 32).

The fight training space activates as the fight squad assembles for a scheduled session, with *intraactions* of the athlete- and coach-bodies playing an integral role in producing the training space. It is an *everyday space* that is continually (re)activated through the contingent agencies of not on fans, mats, mirrored walls, smell, vocality, sweating-bodies, hope, the Olympic story, and coach-stopwatch-whistle-stick. And while the space is performed, it is not 'staged' in the sense that the zombie apocalypse is staged at the museum. Yet when in full swing, like the zombie program, the training space is orientated towards the future (a taekwondo competition) while remaining grounded in a specific pedagogy that mobilises the affective experiences of learner-bodies in a range of directions – with the ultimate goal of empowering athletes to make 'good' decisions as fighters and as a team (collective). They are not only taught how to take care of each other in training and competition, but also take care of the built environment, with the high-performance athletes taking turns to mop floors, clean mirrors and empty bins at the end of the night. It is not unusual to see some of the highest-performing athletes in Australia engaged in this carework, and engaging in banter with coaches, team mates and parents while they do so.

An ethical pedagogy activates a "space of empowerment (*potentia*) and becoming that is capable of producing spaces of intimacy, experimentation and relation to others" (Braidotti, 2013, p. 353). This can occur in a range of practices in which space participates with varying degrees of intensity, force and intent. Spaces of empowerment can be formed in recurring everyday practices in a fight program or through a one-off, carefully staged zombie apocalypse event. They can also be formed in pockets of practices distributed across a large geographical

area, like a sculpture event. Spaces can also empower by acting through planned, didactic affect. Drawing on data from the institutional space of school, Watkins (2015) tells of the ways in which space orders and regulates bodies as they learn to navigate a shared social space. This ordering effect on children, parents and teachers is not understood as repressive, though. Instead, it capacitates the individuals to ‘hang together’ in a larger school community by teaching orderly conduct and the rules of successful cohabitation.

The large numbers of families that attend the taekwondo club are similarly enabled to hang together by the didactic affects of spatial practices. At the club, it is expected that parents will remain in the reception area as the fighters enter the training room, pausing to bow in the doorway. The desired behaviour is signalled by a strong sense of a clear-cut division between the parent-friendly space and the athlete-spaces. Parents generally have no need to enter the athlete-spaces and their movement in the club is restricted. The doorway to the training room is in the far corner, tucked behind the reception desk. There is not enough space for parents to stand in it and a sign says ‘Do not stand here’. Instead, a big glass window replaces much of the wall between the reception and the training room. Parents who choose to stay can watch through the window; however, they cannot interact with their son or daughter.

This practice of separating parents from athletes begins when the athletes first enrol in taekwondo and is an often unspoken rule. It is another example of the process of establishing an elaborative memory trace whereby the body retains “impressions or traces of objects [and actions]” (original emphasis, Spinoza, 2018, p. 95). Silently, imperceptibly, a crack forms along the regulatory line and the space acts on parents in a form of ‘dressage’ (Lefebvre, as cited in Watkins, 2015, p. 84). Their bodies are being trained over time in multiple, almost unnoticeable spatial practices, in preparation for entering the competition space. Thus, athletes arrive and gather in the warm-up area, with parents seating themselves in a separate spot in the stands. This is reinforced by authoritative signs, barriers and security personnel who will physically stop parents from entering the athlete space during an event. An authoritarian line is activated again.

The didactic affects of space can create the conditions for possibility because, as Watkins notes, they “can free the body to perform in other ways” (2015, p. 84). Routinised spatial separation of parents from athletes allows the athletes to develop the capacity to act independently from their parents and to fully participate as a team member while positioning the coach as the responsible (response-able) adult in the scenario. It also develops the sense of being a team (a collective) and sets the conditions for coachwork and carework to flourish.

Containment of parent-bodies (and the threat of their anxieties and expectations) becomes an enabling constraint. Parents are not sidelined though; without them the sport could not operate, but they must find a way to participate that is outside of a single focus on the child-parent relation. So they volunteer at competitions, provide transport, organise social events, engage in fundraising and pay the fees. While training is on, however, they are freed to do the food shopping or take a coffee break or catch up on some work or even read a book.

Storying. Practices of storying activate particular affective lines and work to give continuity to experiences over time. Stories can be powerful pedagogic devices (and Devices) because stories do things. Sometimes the pedagogy hinges on a story. At the sculpture event, the story of a precious gemstone buried in the headland spreads like a contagion, sparking interest, thought, laughter, imagination. In the zombie program, the story of a zombie apocalypse event is re-enacted daily. It is an implicit activism, a refrain that makes a space for the zombie program in the ‘fusty lab-chic’ museum, activating the program and permeating the zombie learning assemblage – which promises survival, thanks to the help of the becoming-zombie-scientists. Like all stories, the story of the imminent threat of a zombie apocalypse is material, and has material effects, and is affected by its effects. It has a particular sensibility and does powerful pedagogic work by weaving together what might otherwise be disparate experiences, ideas, bodies, and things. The past is connected to the present so that all might come to exist *in thought*. Narrative practice is performed when zombie-scientists (and zombies) engage in acting out the zombie narrative to now do the story – sometimes taking up several roles in the narrative as they slip from one subjectivity to another, getting inside the story, becoming the story. In this sense, while the zombie program is set up as a survival quest, it is just as much about enacting a story and inventing new subjectivities, connections, and relations as it is about playing a game.

Sometimes there is no single story that is carefully wrapped around a pedagogy but lots of small acts of storying that emerge in everyday practices – sometimes resisting the dominant narratives that frame those practices. In the fight program, coaches create continuity, maintain the thread of learning using stories. Coaches regularly use anecdotal stories to link training to competition (and competition back to training), thus connecting the athlete-training and athlete-competition assemblages across time and space. Athletes gradually build power to think, affect and act in a variety of contexts. In another scenario, Ilya announces to the assembled athletes at the end of a training session that “We need to start telling our own stories”. She is saying this in condemnation of the media reports on the perceived failure of the Australian swim team at the 2016 Olympics, a team plagued by close

media scrutiny, high public expectations and harsh criticism, and which has also seen a number of high-profile athletes struggle to transition into life after elite sport. A crack. And in the crack Ilya is activating a line of advocacy-and-antagonism by empowering the athletes to think differently, act differently, as elite sportspeople by starting to tell their own stories. Stories of shared experience, stories that redefine what it means to be successful, stories that empower, stories that resist the notion that success (or failure) in sport ‘belongs’ to an individual or a nation.

Occasionally stories and practices of storying take flight. They might have nothing to do with the intended pedagogy of an event-assemblage but, if allowed to take place, have transformative potential. Wada is intuitively drawn to the human pathology museum in the wake of her son’s death, bringing her grandchildren with her. In a sense, she also brings her son into what might be understood as an embodied process of reconciling her experience of his cancer-diagnosis-dying-death event in a present and future that is both with and without him. In the museum Wada can story and (re)story death and disease and come to know it differently overtime. She takes her time in the museum, “dealing with it”, as she tells me. The zombie program gave her a reason to do this and, to the credit of the program, it created a breathing space where she could take her own line of flight from the crack opened by the zombie apocalypse to somewhere else entirely.

Explicit storying devices do not work the same way as those that work from the crack. When storying strategies become less about storying and more about telling, they might be understood to activate a rigid line. In a sense, the story becomes demanding, potentially imperialistic. However, this does not increase its effectiveness in producing desired outcomes. In a colonial heritage site at Greenough, West Australia, didactic re-storying and interpretive strategies are put into action through an exhibition designed to “encourage a poetic form of engagement which leads to a recognition of one’s personal relationship to established narratives about the past” (Witcomb, 2013, p. 257). Yet the negative effects on the target audience are contrary to the aim of the exhibition, which is to destabilise dominant narratives of white settlement on ‘terra nullius’ land.

It could be said that the heavily didactic nature of the pedagogy restricts the target audience’s capacity to *intraact* with the story and re-story the story differently, generatively, creatively. Learner-bodies are made vulnerable by the disorientating effects of the exhibition, but in this instance vulnerability carries a real threat of incapacitation. This entails ethical consequences. Museums and heritage sites that set up emotional encounters with traumatic histories can elicit experiences of negative affect and the confronting “impossibility of undoing

the harm and suffering that has taken place” (Zembylas, 2018c, p. 199). Practitioners therefore have an ethical responsibility when working with difficult knowledge and practice to “organise the learning experience in such a way that it creates new openings from which individuals can reclaim trauma from the past in productive (e.g., reconciliatory) ways” (ibid).

The point here is to show that storying practices of a minor pedagogy have a very different sensibility to storying practices more associated with a Major pedagogy. Arguably, this sensibility cultivates practices that perform ethical good by increasing participants’ capacity to act in affirmative ways. In the crack, storying is about opening the possibility for making a multiplicity of new connections or combinations. It is not about driving home a single, predetermined narrative. Neither is it about overcoding an existing narrative (of white settlement) with another (about invasion), or erasing the grand narrative of the Olympics, which arguably promises stabilising affects and is shot through with delirious affects that fluctuate along lines of promise-and-threat. Rather, storying in the crack works to draw bodyminds into a correlative interplay of affecting and being affected with a non-deterministic view of the outcomes. We are not just recipients of stories but weavers of stories. There is agency and power in that, and so acts of storying are political acts.

‘The story’ is always more than one. And in the crack, it remains open to being iteratively reconfigured through an ongoing *intraactivity* with those caught up in the story or participating in the practice of storying. This is an ethical approach that prompts practitioners to take ethical responsibility for those implicated in storying practices. As Barad explains, in the world’s ongoing *intraactivity*, the ‘past’, like the future, is open to change and thus storying in the crack creates the possibility for reparation (interview with Karen Barad in Dolphijn & van der Tuin, 2012, pp. 66–67).

Moving. Bodies do things. They exist, feel, reproduce, become still, endure, die, cease to exist. They move, and moving is acting, and the power to act is integral to learning because “any thing that increases or diminishes, aids or restrains, our Body’s power of acting, increases or diminishes, aids or restrains our mind’s power of thinking” (O’Donnell, 2018, p. 5). The mind-and-body is one thing, after all. Movement connects bodies to space and time, creating body-space-time relations – and rhythms and routines and refrains. Lefebvre (1991) notes that “Rhythms in all their multiplicity interpenetrate one another. In the body and around it, as on the surface of a body of water, or within the mass of a liquid, rhythms are forever crossing and recrossing, superimposing themselves upon each other, always bound to space (Lefebvre, 1991, p. 205). Bodily routines are formed through recurring movements (refrains) through particular spaces – and so the body is taught, in space.

Moving bodies, in the crack, can create space for minor pedagogies to unfold. “For sublime deeds”, we are told, “one draws a circle, or better yet walks in a circle as in a children’s dance, combining rhythmic vowels and consonants that correspond to the interior forces of creation” (Deleuze & Guattari, 2013, p. 362). Walking in circles (a refrain) with whistle-stick and stopwatch, a coach marks out the territory of the fight training, commanding the movement of bodies in space. Athletes join her (and the refrain), also walking in circles as they warm up, then spinning in circles doing turning roundhouse kicks as they complete a circuit of the room. Affects, sweat and smells accumulate with the movement of bodies, building the intensity of the training room. The coach engages in highly attuned bodywork, reading the athlete movements and moderating the rhythms where necessary. The collective nature of the training environment amplifies the energy – and the assault on the senses – connecting the athletes. They tap into the collective energy and push harder, do more than would be otherwise possible; the team becomes more than the sum of its parts. Fans eventually join in the refrain too, oscillating in time with the circle work being performed. Parents and other potential intrusions are kept at bay. They stand in the foyer of the club, separated by a categorical line but still connected by the smell, sound and energy seeping through, and (of course) the sights afforded by the window.

In the museum, becoming-zombie-scientists also mark out their territory with movement. A chaotic star-like formation emerges – pushing its points outwards with repeated visits between the centralised learning station and the activity stations positioned around the museum (another refrain). The exhibits and activity stations slow them down, causing them to become still for a time before the desire to complete the survival quest spurs them on again. As the space becomes familiar, the zombie-scientists relax and become playful, experimenting with becoming-zombies or perhaps scaring the pants off their younger siblings. Sometimes their accompanying adult moves with them but more often the adults mark out a different territory with one or two slow circuits. Likewise, sculpture-walkers mark the territory by foot just once – a much larger circle that takes a much longer time to complete, with the help of the bus. If they repeat the circuit it is usually on another occasion.

Movement not only marks territory but is also a means by which bodies may enter into specific encounters much like Deleuze’s swimmer enters an encounter with a wave. To not know how to fight, become-zombie-scientist, or engage with art is to be at the mercy of an encounter with an opposing athlete, a collection of specimens, or an artwork. To know how, or gain ‘*knowhow*’ (O’Donnell, 2018), is to develop the capacity to negotiate such encounters by doing, an *in situ* knowing-in-doing. Deleuze reminds us that an individual cannot learn to

swim on land; he or she must enter the water, learn to dive at the right moment, breathe at the right moment, kick in the right way, achieve “this deeper knowledge of encounters where the rhythm of bodies is composed directly with other bodies (and) expresses concretely what is common between bodies” (O’Donnell, 2018, p. 8). This knowhow may be gained with the help of direct instruction from coach or teacher, or not.

Moving is also thinking: thought happens in the act of an encounter that causes a shock to thought – a shock to thought that might actualise as new relational articulations while also releasing the possibility of generative transgressions (Zembylas, 2007c, p. 28). In moving, the bodymind is opened to an encounter with something in the world and “thought is jolted and disturbed and shaken out of its familiar lines of thinking” (Deleuze, 1994, p. 252) – cracked – so that invention may take place, or a transgression might occur. Semetsky (2013, p. 79) explains that a Deleuzian process of learning can be understood as becoming-other by way of “immersing oneself in intense bodily encounters with uncanny and yet unthought of experiences that can produce a shock to conscious thinking”. With/in a body-event, the process of an incorporeal crack line actualising on a body occurs.

Not overthinking. Bodies think. And thinking bodies are vulnerable bodies. In order for a body to find something it cannot think, Henderson (2014, p. 2) tells us, “a loss of certainty is critical”. This destabilisation of knowing can create alternative spaces where “subjectivities of the self and other can be constituted *relationally*; knowing and unknowing, self and other, are not as opposites, but as aspects of our relational encounter with the world” (Zembylas, 2007a, p. 9). Knowledge and ignorance are not possessed by individuals but are relational articulations of the world.

Pedagogy in the crack involves a practice that doesn’t overthink – a practice that honours the risk inherent in the various intersecting lines of experimenting, bugging it up, tinkering, and caring. There is an artfulness, a curiosity and sense of humour that seems to accompany the crackwork in the practices of practitioners who participated in this research. This involves resisting the urge to over plan, be completely in control, or remove the discomfort of working in the crack. This ‘not overthinking’ is the enactment of a type of unknowing that activates a dynamic of promise-and-threat, enabling an (un)knowing pedagogy that simultaneously has one foot in the known and one in the unknown. A pedagogy in the crack where thought, and bodies in thought, are “able to move back and forth engaging in forms of experimentation which are always already in the process of coming about” (Henderson, 2014, p. 2).

Not-yet-on fans suggest an oscillation between stillness and movement and the speeding up and slowing down that this entails. They work as a figuration of (un)knowing; a crack between stability and chaos opens in knowing and doing. A crack where a fighter can ‘go through the motions’ relying on muscle memory built through repeated elaborate rehearsals. A crack where intuition reigns. “You can’t overthink it” and “buggering it up” become refrains that create space for experimental, future-orientated, vital learning to happen. In so doing, there is an acceptance that tinkering in the pedagogy will be necessary. The pedagogy of the museum practitioners is built on this premise. It is experimental and programs do not get planned then executed; rather, they emerge out of trial and error.

This requires entering the space between the thought and the unthought – the as yet unthinkable space so as to open up future possibilities and not end up stuck in the same ruts: “We go toward the best unknown thing, where knowing and not knowing touch, where we hope we will know what is unknown” (Cixous, as cited in Davies, 2018, p. 119). The crack lines, and the minor pedagogies they compose are powerful because they deterritorialise the regulatory lines that bind and blind us, re-territorialising them in a new (not yet thinkable) direction. This is about “opening the possibility of acting differently in the world in ways that matter” (Davies, 2018, p. 119). In the crack, a minor pedagogy is continually emerging from a place of knowing and unknowing, (un)knowing. Even once a program is assembled, there is refinement, change, adaptation; things get added and other things drop off along the way. There is always drift.

Drifting. Flows of pedagogic affect emerge in practices that are endlessly specific. At the museum, for example, the unfolding pedagogy is contingent on who attends, what was in the news today, how the technologies behave, the weather, which specimens may be absent or present (have they been borrowed for university teaching purposes?), how the activity stations have been (re)arranged after the last session and so on. The unfolding pedagogy is ordered by devices, yet the way it unfolds meanders overtime, causing drift in practice. So while a pedagogy enacted one day resembles the pedagogy enacted on another, it will never be the same twice. It is useful to think of the difference produced in repeated practices as drift, or as forming lines of drift.⁷⁶ Drift lines form as “the crack pursues its silent course, changes direction following the lines of least resistance, and extends its web only under the immediate influence of what happens” (Deleuze, 2015, p. 160). It is a line of evolution (drift) rather than revolution (rupture).

⁷⁶ Deleuze and Guattari speak of “lines of drift” in their Chapter 1837 of *Of the refrain* (2013, p. 363). It is an element of the refrain, or what I more commonly refer to in this thesis as the implicit device.

The pedagogies of the sculpture event, zombie program and fight program assembled somewhere, sometimes somewhere quite traditional – as was the case of the human pathology museum – and made incremental shifts in practice over an extended period to become what they were for this study (but no longer are now). A journey of a million miles starts with one step – not by systemic rupture but achieving change through incremental steps (drift) towards performing ethical good. A ‘natural drift’ is the path of least resistance. It may also translate as a wander line (wonder line?), or become caught up in deliberate practices of wayfaring. It entails movement but does not necessarily move toward a set outcome. Instead, the movement adopts a criss-crossing path configured by the dynamic flows and intensities of an event-assemblage. Take for example the path of a river travelling from the mountains to the ocean. While the water will always travel from higher ground to lower ground, the route itself will change from week to week and season to season. If the watercourse is left to form its route, it will, over time, change in size, shape and number of constitutive stream beds. It will on occasion break its banks or completely dry up or otherwise dramatically shift its course – unless walled in as it passes through a city. This idea of natural drift can be used to explain practice loops and shifts in established practices, over time. It is perhaps more promising and less threatening for educators than the line of flight which, while producing the radical potential for change, also carries a risk of annihilation.

I argue that purposively manipulating drift is a sustainable approach to making change. Adoption of this approach requires consideration of how drift takes place, and what practices are useful for intervening in drift. I suggest that any intervention in the course of drift must be made with a commitment to moving the relations of the associated collective towards the mutually affirmative. Two approaches to working the drift line emerged in the datawork – tinkering and carework. Interestingly, both connect to recent empirical studies in medical education and practice.

Tinkering. Tinkering challenges the ideals of ‘best practice’ and standardised, evidence-based models. Mol (2008, 2009) and Fenwick (2014) show how tinkering is critical for providing good care in medical contexts where the reality of good care is rarely the result of ‘best practice’ protocols being enacted. “As if things ever unfolded according to plan. As if they were well behaved and predictable. But no. In practice, caring is complex and erratic” (Mol, 2009, p. 1757) – life, with its complex web of contingencies, cannot be controlled. And neither can pedagogic outcomes. The best-laid plans can become unstuck. “Have a plan and be prepared to change it”, a coach tells his athletes. Ruptures occur, and there is no way to accurately predict what didactic and delirious affects will emerge on a particular occasion or

how they might make, unmake or remake a learning assemblage. Tinkering is about adjusting practice in response to the actions of fungi and weather and technologies and learner-bodies to guide but not control them. It is about fixing up artworks that have gone astray or blown away. It is providing just-in-time teaching, not dissimilar to the ‘doctoring’ that goes on in Mol’s (2009) ethnography of medical practices. Of doctoring, Mol writes, “the task is that of attuning everything to everything else, one way or another. What to fiddle with and what to keep fixed is rarely obvious. What you try to do may not work out. Try something else. Keep on tinkering” (Mol, 2009, p. 1757).

Mol (2008) notes that “Good care depends on specification” (p. 67). And so does good pedagogy. Specification involves ongoing differentiation, in practice – mending the crack a little, or perhaps widening it just enough to extend it but not deepen it irredeemably (Deleuze, 2015). It does not mean engaging in practices that privilege the idea of the self-contained individual (or essentialist understandings of the ‘elite athlete’ or ‘gifted student’) but is an alternative, complex and inclusive process of individuating the collective. “This means openness to others, in the positive sense of affecting and being affected by others, through couples and mutually dependent co-realities” (Braidotti, 2009, p. 49), and this, in turn, connects back to the idea that bodies are inherently vulnerable because they do not, cannot, belong to themselves: “To survive, bodies depend from birth on what is outside or beyond them” (M. Lloyd, 2015, p. 170).

Pedagogy that operates in the crack is relatively fluid. “The realities that it enacts in its patterned relations *unfold* in the course of tinkering” (original emphasis, Singleton & Law, 2013, p. 264); therefore, it incorporates an experimental ‘trial and error’ approach in some guise or another. Tinkering itself is performed in a variety of heterogeneous practices. Sometimes practitioners tinker. The fight coach pulls back a little, gives the athletes space to regroup. The coaching team notices other clubs are ‘smashing out the head kicks’ and adjust their program accordingly. The museum practitioner notices that inconsistency in how the material is presented at the activity stations hinders some of the zombie-scientists, so streamlines it. The artist adds a ‘parental guidance recommended’ sign to the artwork. Sometimes the learner-bodies do the tinkering themselves: survival course participants switch roles in the unfolding game-play, an offering of a baked good is regularly placed next to *The Journey of a Million Miles* during the sculpture event. Without an authoritative teacher figure, the pedagogy is more inclined to be horizontal. At the museum, it unfolds in relation to multiple contingent agencies of technology, learning stations and specimens.

Nonhumans tinker too. The overturned boats respond to the changing weather conditions, providing shade on a hot sunny day and shelter from the rain during inclement weather, and at night go silent. Sometimes technologies tinker too. The electronic scoring system tinkers in taekwondo practice at a macro level, altering the game in unpredictable ways, leading to rule changes and adjustments to training schedules. It also adjusts its psi to match the capacity of players of different ages, weights and genders, although no two scoring systems work the same way and some require much more attention than others. As Mol (2009) notes, technology can be demanding and often has a mind of its own, “rarely do[ing] what is promised on the package. Instead, they do more, or less, or something entirely different” (p. 1757).

Carework. Caring and tinkering are sometimes the same thing. “Care is a process of continuous attunement and adjustment to and with the assemblage as it evolves” (Fenwick, 2014, p. 48); working to allay fear and threat, the carework of taekwondo coaches activates hope and promise. However, caring is something other than tinkering too. Caring implies an ethical stance – an enactment of empathy perhaps? Vulnerability intersects with carework too – caring works with vulnerability but does not eliminate or prevent it because, as Zembylas (2019), drawing on M. Lloyd suggests, vulnerability is wrapped up in learning to affect and be affected. To be vulnerable can indicate a shift into an uncomfortable (confronting?) space where critical reflexive thinking and doing can take place. Children were vulnerable at all sites and received care also. Adults were mostly vulnerable at *The Journey of a Million Miles*, yet often refused care.

Observation is carework and an essential part of tinkering. What is an individual doing when he or she is engaged in careful observation? What is her body doing? How is she making meaning from what she is sensing, perceiving, feeling? How is she reading the context? How does she act on her observations? To tinker or not to tinker? Ilya arrives late to the taekwondo competition and takes the time to observe how the day is unfolding, how the coaches on the floor are connecting with the athletes and how the athletes themselves are doing. She decides how she will enter the competition-fight assemblage based on this careful and expert observation. Coaches have expert knowhow developed through regular contact with their athletes, over a long period (something that was not in the scope of the other two sites). The time spent both actively coaching and quietly witnessing their athletes, week in and week out, year on year, produces repetition (and difference) that characterises the patterning of the affectivity of the unfolding pedagogy – fluctuations of fear-and-hope, promise-and-threat. The coaches know their athletes, they know how to interpret their behaviour and see them as a

collective and individuals. They also know how to respond as events unfold, enacting care for the collective, then care for the individual. They are also committed to teaching the collective how to perform care as well as receive care. Athletes learn to care for athletes.

Like tinkering, carework is not the exclusive domain of human bodies. Other entities get caught up in caring practices at all sites. The technology cares for athlete safety. An opponent does not need to convince a human judge with a powerful kick that risks excessive harm but instead convinces a technological judge with a light touch and technique.

Overtured boats care for the sculpture-walkers, providing refuge and a place to sit and eat while listening to the confronting stories. The boats care for the audience's physical and emotional wellbeing. They also alert the audience to the neglect of people from refugee backgrounds and the harm that established but ill-considered use of language can do. So they enact a caring towards the resettled community. *Untitled - Whakanoa* also cares for sculpture-walkers, providing a water source to enable 'proper urupā conduct' which in itself is about taking care of the spiritual, emotional and physical wellbeing of both land, local iwi and sculpture-walkers.

In a medical setting, care ethicists claim that 'good care' is not an ideal that can be defended in general terms, as a matter of principle (in the way that the ethical tradition has sought to defend an ideal like justice). Instead, it is something that people shape, invent and adapt, time and again, in everyday practices (Mol, 2008, p. 4). The shifting ethical code of the human pathology museum is one example of this point, in action. The question it raises is, what principles can be used to guide not only carework but all tinkering in the drift of established patterns of practice? And is *not* engaging in carework, and *not* engaging in tinkering, performing neglect? In the concluding section of this discussion, I propose an ethical practice based in Braidotti's rendering of a Spinozist ethics of affirmation (2006a, 2009, 2011, 2013a) as a way to navigate this space.

Map Fragment IX: Cracking Open Pedagogy

Topological coordinates: A6–D6

Thinking ‘on the line’ (Deleuze & Guattari, 1983) produces insight into how minor pedagogy acts to deterritorialise learning and the Major pedagogies that determine what legitimate learning is, or at least ‘should’ be (such as the Kukkiwon-style Taekwondo program at the fight club or social constructivist accounts of learning in schools). It illuminates the cracks. The crack has significance since it is “only by means of the crack and its edges that thought occurs, that anything that is good and great in humanity enters and exits through it” (Deleuze, 2015, p. 165). To enter the crack, pedagogically speaking, is to crack open the regulatory to make space for minor pedagogies to unfold – with the minor being characterised by an expressive, artful, almost poetic sensibility (Bogue, 1997, p. 116). Minor pedagogy is a doing – an artful-thinking-doing, to be more precise. The process of minorisation which constitutes minor pedagogy involves an act of cracking open pedagogic regimes, and engaging in practices that ‘give rise to intense expression’ and ‘express intensities’ to create an impetus for action (Honan & Bright, 2016).

Entering the crack means working intensely with affective flows, which are imbued with power and agency. “Affectivity is the power that activates your body and makes it want to act” (Braidotti, 2011, p. 312): the museum ignites its *Zombie Apocalypse Survival Course* with an affectively charged Emergency Broadcast. The Emergency Broadcast activates a line of promise-and-threat, which produces cracks evident in bodily responses like fear, excitement, fascination, as well as a (stabilising) sense of purpose. What is important on a micropolitical level is the change it produces in the respective bodily capacities of those involved. Affect, and by extension pedagogic affect, “designates specifically those encounters between bodies that involve a change – either enhancement or diminishment – in their respective bodily *capacities* or micro-powers [or agencies]” (original emphasis, Slaby & Mühlhoff, 2018, p. 1). Mostly, the encounter with the Emergency Broadcast creates desirable change by enhancing the capacity of survival course participants to enter the museum, become-zombie-scientists (and zombies), and become fully immersed in the event. This corresponds with an enhancement of the zombie program’s power to teach, and the museum body’s capacity to act as an archive of affect. It becomes activated as a space of an extinction-level event where a future-orientated pedagogy is performed. Therefore, the micro-powers and agency of the (now) becoming-zombie-scientists *and* the zombie program *and* the museum increase.

However, the affective force of the Emergency Broadcast also threatened to overwhelm. One research participant was too scared to enter the museum body – gripped by fear, Matt wanted to leave. A rupture. His capacity to become-zombie-scientist was diminished along with his micro-power and agency. At the same time, the capacities of the zombie program and museum body were also diminished. There was a blockage, and pedagogic potential was lost as a result. This example demonstrates that the effects of pedagogic affect on bodily capacities is not only political but also has an ethical dimension – not an ethics stemming from what Braidotti (2009) describes as a “Kantian-Foucauldian coalition that stresses the role of moral accountability as a form of bio-citizenship” (p. 43), but an ethics that steps off from a Spinozist “politics of life itself as a relentlessly generative force” that is located “in a set of interrelations with both human and nonhuman forces” (Braidotti, 2009, p. 44).

A pedagogy grounded in a relational, Spinozist ethical practice emphasises the generation of affective flows that enhance a learner’s capacity to form relationships and relate affirmatively with their world. This means attuning to how the dynamics of pedagogic affect work to either capacitate or incapacitate those involved and actively engaging in processes that engender and empower modes of becoming (Braidotti, 2009): “Ethical behaviour confirms, facilitates, and enhances the subject’s [joyful affirmation as] *potentia*, as the capacity to express his/her freedom ... Unethical behaviour achieves the opposite: it denies, hinders, and diminishes that impetus” (Braidotti, 2006a, p. 245).

Just as significantly, a pedagogy grounded in ethical thinking-doing is about developing the bodily capacities of learners to respond (response-ability), and thus *learn to affect* as well as learn to be affected (becoming vulnerable). Arguably, building the capacity (power) to affect needs to be coupled with a pedagogy that increases learners’ bodily capacities to act in ethically affirmative ways, such as the highest-performing sparring athletes being taught the art of the ‘controlled win’ when competing against an inexperienced player, or sculpture-walkers learning from an encounter with *Untitled – Whakanoa* to conduct themselves appropriately on an urupā by making sense of a water source to do so. A pedagogy that enables individuals to put affirmative ethics into action involves attuning to connections amongst those individuals and numerous other forces (affective flows). It involves understanding reality as a process of iterative becoming where “all bodies, including but not limited to human bodies come to matter through the world’s iterative intra-activity, its performativity” (interview with Karen Barad in Dolphijn & van der Tuin, 2012, p. 69).

This is where Barad's concept of *intraactivity* intersects with a Spinozist-Deleuzian philosophy of affectivity. *Intraaction* is a key 'ethical concept' (Davies, 2018; Dolphijn & Van der Tuin, 2012) that overlaps with Deleuze and Guattari's proposition that "We are not in the world, we become with the world" (Deleuze & Guattari, 1994, p. 169). The idea that 'we' exist in our continuous *intraactive* becomings produces the Baradian ethical sensibility referred to as "*ethico-onto-epistemology*" (original emphasis, Dolphijn & van der Tuin, 2012, p. 68). The implications of taking this idea seriously are wide-ranging. For educators, it starts with shifting the pedagogic focus from outcomes (such as test results, or medals) to process (such as the ongoing development of an athlete's capacity to remain calm in a fight situation through carefully sequenced training scenarios). This draws our attention to the affective forces at work in the complex processes of becoming. It makes way for pedagogy that fosters the becoming minor subject, and the becoming-ethical subject, that is not about "the recognition of Sameness" but is attached to the creation of "affirmative otherness" (Braidotti, 2009, p. 46). The radical more-than-human collaboration between Chris Booth, fungi and vineyard waste that generated the *Kinetic Fungi Tower* is a poignant example of this ethics in action. Each co-labourer is dependent on the others for their emergence in an affirmative relation to the others, made possible through a doing-in-common.

Critical and Ethical Thinking-Doing

An ethics of affirmation has significant implications for navigating the power relations in a learning assemblage. If we are to move beyond oppositional thinking⁷⁷ where power is assumed to be a force that should be resisted, there need to be alternative approaches to thinking critically about practices that differentially distribute power and agency. I argue that the decision to intervene in a set of power relations can be guided by questions about how the affective flows are moving, how the pedagogic space has been activated and, how the collective is moving towards enhancing both individual and collective capacities for affirmative relations. This allows us to think about the complex effects of the differential distribution of affects, micro-powers and agencies on individuals, local organisations and global communities.

Sometimes inequality in the distribution of power is necessary, for example to allay fears for athlete safety during training and competition, or to realise the potential for orderly conduct that enables the successful cohabitation of shared spaces such as schools. In these

⁷⁷ Refer to Braidotti (2010) for a detailed critique of oppositional thinking. The main trouble with it is that opposition easily slips into negation, forming a binary relation with what is being opposed. This leads to the deletion of practices and reduction of complexity – which in itself is a political act because it reduces the possibilities for forming connections with multiple others.

circumstances, asymmetrical power relations are capacitating for individuals and the collective. In the classroom context, Watkins (2010) argues that teaching effectively (like coaching effectively) involves actively generating “a force of productive potential” (p. 281). This may involve the teacher (or coach) taking centre stage and ‘performing’ to first spark interest (activate pedagogy), then keep the interest fired up (sustain pedagogy). The teacher (and coach) engages in practices to accumulate affects that produce the desire to learn (Watkins, 2010, p. 284). In this situation, much of the power to act pedagogically initially lies with the instructional body, which is the coach and teacher here but also extends to artworks, museum collections, technologies and architectures in other instances.

An important question to ask of a situation where there is an imbalance of power or agency is whether this jeopardises someone or something in the learning assemblage? In these particular examples, I would answer, no one, no thing or no body is jeopardised. The asymmetrical distribution of power still leads to the mutual capacitation of the class or fight squad and is associated with effective teaching (and coaching) practices. That is, the outcome of instructional pedagogy (with a good measure of didactic affect) can be to increase the capacity of *all* learners (or athletes) to think and do, affect and be affected. Ethical good is performed when the effects of the pedagogic affects move the relations of the collective (e.g., class or fight or zombie assemblage) in the direction of the *mutually* affirmative, or joyful (Bignall, 2010).

In scenarios such as the classrooms of Watkins’ study or the training room of the taekwondo club, the unequal distribution of micro-powers is still in the best interests of the learners or athletes – both as a collective and as individuations of that collective – showing that power that materialises as pedagogic affect is a force with generative potential (Watkins, 2010). Affirmative ethics “proclaims the need to construct collectively positions of active, positive interconnections and relations that can sustain a web of mutual dependence” (ibid). In the absence of a strict moral code or scripted approach to ‘best practice’, how do we decide how to guide minor pedagogy? If we are to accept that power imbalances can be productive, how do we guide practice, so that pedagogic affect works to perform ethical good? How do we actualise pedagogic affect as a capacitating force rather than a colonising or imperialistic device? I argue that it is not so much the pattern of affectivity (distribution of micro-powers) that makes a practice ethical but the fact that affectivity remains dynamic and blockages get attended to if and when they occur.

Pedagogy becomes ethically compromised when it sets the conditions for some bodies to come to matter more than others, or at the expense of others (Taylor, 2018, p. 9). Mitigation

of potentially harmful effects of pedagogic affects demands active engagement in practices that produce affirmative ethical values. A purpose of engaging in an affective pedagogic practice, therefore, must be to re-envisage and enact “more humane and sustainable social systems” (Braidotti, 2013, p. 347) that acknowledge the co-dependency of all participating entities. The fight pedagogy of this study is a particularly potent example of this re-envisaging in action. Taekwondo in Australia exists in relation to a cultural context where individual athletes are routinely singled out at a very young age and privileged as the ‘sporting elite’. The fight program of this study resists this practice while creating an alternative approach to developing taekwondo athletes (elite and recreational). What the coaches have produced is a ‘minor pedagogy’ for high-performance fighters that does not essentialise individual ability or achievement but actively works towards empowering the athletes as a collective. The result is a program that is sustainable for both coaches and athletes, as evidenced by their longevity and ongoing love for the sport. It becomes a model of practice that could inform sporting organisations that are looking to build affirmative sporting environments for young athletes.⁷⁸

Tinkering (and carework) is central to sustaining a pedagogy in the crack and is also central to ethical practice. This is because tinkering intervenes in the existing distribution of affects, agencies and micro-powers – making small adjustments to practices in response to the always-changing conditions of the learning assemblage. Choosing to tinker or not to tinker is an ethical decision. Will tinkering activate affirmative and sustainable alternatives? Will the force of the ethical relations thus produced support “the actualisation of virtual possibilities geared to the empowerment of higher forms of interrelation with multiple others” (Braidotti, 2013, p. 354)? The fight program enacts this relational ethics. The programmers guide their decision-making with the question, “What’s in the best interests of the athletes?” This is a complicated question because, in practice, the coaches always prioritise the best interests of the athletes as a collective first, then they individuate their coachwork as and when needed, on the court and in the training room – often in the moment. Fighters are debriefed after a fight and hugged when required.

Ethical thinking-doing in such a Baradian and Spinozist-Deleuzian sense is based on a strong sense of collectivity that positions the individual subject quite differently to the individualistic, contained and self-determining ‘neoliberal’ subject. Rather, collectivity can be understood as “mutually embedded nests of shared interests” (Braidotti, 2006, p. 250) that promote a non-unitary, assembled, fluctuating, decentred sense of subjectivity. From this

⁷⁸ For the most recent IOC (International Olympic Committee) response to the need to safeguard child athletes from violence and abuse in sport see Mountjoy, Rhind, Tiivas, and Leglise (2015).

position, an ethical pedagogy becomes about activating sustainable flows (lines) of iterative becomings which instantiate joyful energy or an affirmative life-force (vitality) with/in collectives and individuals that co-constitute them.

Ethics of Radical Openness

Deleuze's Spinozist inspired ethics is about "a radical openness to the emergent, multiple being of the other, where that other is both human and non-human, organic and inorganic" (Davies, 2018, p. 119). This means ethical practice needs to be understood as emergent – it cannot be predetermined by a set of rules, procedures or 'best practices'. What is in the best interests of the athlete(s) differs from day to day, space to space, encounter to encounter. How athletes come to matter and come to matter differently over time is influenced by the thinking-doing of the coaching team and the minoritarian work they perform, very often in-the-moment. "Ethical practice requires thinking [and doing] beyond the already known, being open in the moment of the encounter, pausing at thresholds and crossing over" (Davies, 2018, p. 121) – ethical practice is not only about the pedagogy of the unknown or the unthought but also about teaching students how to inhabit the space of the unknown. It is about becoming comfortable with the discomfort of disequilibrium that the unknown can induce. It is about enacting a pedagogy of radical openness *and* teaching learners how to engage with 'the other' through a radical openness – and the basis of this is understanding learning as a process of increasing mutual capacity to affect and become affected: "The point is to become different from ourselves, to evolve creatively in the space that we open up between and among us" (Davies, 2018, p. 120).

A shake-up (or shake-down) is required so that the pedagogic affects may have the space to oscillate in the crack-space between hope-and-fear, promise-and-threat, potential-and-risk, or as Deleuze and Guattari explain, "oscillate between tree lines that segment and even stratify them, and lines of flight or rupture that carry them away" (2013, p. 589). The datawork from this study has shown that a two-pronged process is required to do "just enough to extend the crack but not deepen it irremediably" (Deleuze, 2015, p. 162). This dual process involves practices that activate a space between, *and* those that sustain it by ordering the space and sequencing a series of encounters through which audiences, athletes, learners learn. It is a process of minorising that requires a measure of deliriousness or "crazy" (ibid) to shake up the status quo.

Minoritarian Work

Affect as an analytic or a focus of study is often used to better account for the contingent agencies of matter, and to move from an oppositional space into a 'trans' space. It shows a

viable alternative to engaging oppositional debates to 'what works' in education – not reducing arguments (or teacher practices and children's lives) to simple either/or, public/private, direct instruction/student-led inquiry. It attends instead to the complexity of what happens in what will always be highly contextualised spaces full of the contingent agencies of people, things, ideas, and spaces. In one of his later works, *Literature and Life*, Deleuze (1997) talks of the necessity of inventing new (minor) languages within the Major (established) language, by minorising that language – producing a grammar of disequilibrium transversality. "Every writer is obliged to create his or her own language. Language seems to be seized by a delirium which forces it out of its usual furrows" (Deleuze, 1997, p. 229). Likewise, the task of educators is to invent new pedagogy, allowing it to be seized by 'a delirium that forces it out of its usual furrows' – or habituated practices that are no longer fit for purpose. This is not an ideological project but an ethical task.

Each minor pedagogy deterritorialises the Major through recurring practices. Practices make space for themselves in the crack or on the edges, engaging both practitioners and learners participating in processes of becoming minoritarian. Deleuze and Guattari insist that "we must distinguish between: the majoritarian as a constant and homogeneous system; minorities as subsystems; and the minoritarian as a potential, creative and created, becoming. The problem is never to acquire the majority, even in order to install a new constant" (Deleuze & Guattari, 2013, p. 123). And the task of the minoritarian teacher and a minor pedagogy is to make "possible a becoming over which they do not have ownership" (Deleuze & Guattari, 2013, p. 123). How this unfolds is endlessly variable because the recurring practices (malleable devices or refrains) that make space for a minor pedagogy span the secular to the sacred, the spectacular to the mundane, the explicit to the implicit. What they share is the enactment of becoming.

Becoming is inseparable from crackwork. "Becoming is a passage between things, a decoding that proceeds via a mutative interaction" (Bogue, 1997, p. 109) between binary power relations such as man-woman, or in the sporting context, elite-recreational, won-lost. Becoming occurs in the crack, it is a deterritorialising process that happens 'in relation'. "A becoming-woman is a passage away from the dominant values of maleness" (Bogue, 1997, p. 109). Likewise, becoming-recreational undoes codes of elitism in sport, becoming-lost interrupts inclinations to 'win-at-all-costs'. Similarly, becoming-resettled unsettles assumptions about forced immigration and decodes racist behaviours. It is the trans-space that the process of becoming inhabits. Becoming-ethical disrupts the tendency to link ethics with a moral code of conduct and moral accountability, focussing instead on the ongoing

process of producing affirmative affects while being sensitive to the emergence of negative affects (sticking points, blockages and paralysis).

Minoritarian work understands that all affects are dynamic and can, therefore, undergo transformation, “even those that freeze us in pain, horror, or mourning ... An ethics of affirmation involves the transformation of negative into positive passions: resentment into affirmation” (Braidotti, 2006, p. 247). Ethical practice enacts an affirmation of hope by building capacity to displace the hurt, deindividualise the trauma and bring time, movement and transformation back into the equation – as we saw at the human pathology museum and on the taekwondo mats. Events that produce adverse affects and blockages present practitioners with an opportunity to intervene and rework the negative relation in the direction of the affirmative. Doing this successfully may well be aided by individual practitioners having experienced working through trauma themselves, or having ‘cracked up a bit’:

*A certain amount of pain, the knowledge about vulnerability and pain, is actually useful. It forces one to think about the material conditions of being interconnected and thus being in the world ... it is those who have already **cracked up a bit**, those who have suffered pain and injury, who are better placed to take the lead in the process of ethical transformation ... Their anomaly deterritorializes the force of habit and introduces a powerful element of productive difference (Braidotti, 2006a, p. 249).*

To reveal vulnerability (cracks) is to open up to the possibility of transformation of negative relations. As Braidotti puts it, “The ethical subject is the one with the ability to grasp the freedom to depersonalise the event and transform its negative charge. Affirmative ethics puts the motion back into e-motion and the active back into activism, introducing movement, process, becoming” (2009, p. 50). The pathology museum can be understood as providing conditions of possibility with regard to becoming an ethical subject. An encounter with the museum can and does produce negative affects. However, the museum is sensitive to these negative affective flows – in fact, it anticipates them – and actively works on making it possible for visitors to remain in the space by transforming the negative affective relations. To do so, it variously sponsors humour, game-like practices such as the survival quest, opportunities to be playful, connections to popular culture and mediating technologies.

In the fight program, coaches actively engage as ethical subjects by depathologising and deindividualising the act of being ‘beaten’. Moving the ‘beaten/beating’ relation towards the affirmative empowers athletes to develop their sparring practice further. It works to reinscribe the crack formation on the athlete-body – differently this time, more generatively.

Trans-individuality is a helpful concept here; “It emphasizes both, the separate and unique character of individuals once constituted, and the essential sharedness of the formative relational domain ... in which individuation takes place” (Slaby & Mühlhoff, 2018, p. 4). ‘Applying’ the idea of trans-individuality to the taekwondo athlete at taekwondo allows an understanding of how a program might be developed for the collective fight squad, and how athlete difference is catered for in processes of collectivisation. The fight program becomes strong and enduring not by performing medal counts and celebrating the individual successes of a few, but by privileging practice that is highly attuned to the affective intra-plays of the collective. The coaches tinker with the unfolding pedagogy through carework and coachwork, always looking to mutually empower the group while asking, “What is in the best interest of the athlete?” It is an act of considering the individual in relation to the whole and anticipating how action will change the dynamics of the pedagogic affects in a given program and its participants, and not just the human participants.

Summary of Map Fragments VIII and IX

This research builds on the growing body of literature that testifies to both the presence and power of pedagogic affect. It brings empirical data together with theory to extend Baker’s (2008) museum-based account of the delirious and didactic dimensions of affect into a range of spaces with pedagogic intent. The datawork shows that just as affect is ubiquitous in the world, pedagogic affect is ubiquitous in educational contexts – being produced in all kinds of sociomaterial practices. Therefore, given that all practices and all pedagogies produce affects, the study stands with Watkins (2016) in refuting the notions of ‘affective pedagogy’ and ‘affective practice’ as subtypes of pedagogy and practice. Mapping an analytic of lines onto three cartographies of intense learning environments shakes-up the existing concept of ‘affective pedagogy’ (Hickey-Moody, 2013a, 2013b, 2016). In the crack that opens, I fold the idea of ‘affective pedagogy’ into pedagogy in a minor key, characterised by its sensibility and function – which is predominantly to minorise the Major (Deleuze & Guattari, 2013). A connection is formed between the workings of pedagogic affect and literature on minor writing and minor literature (Bogue, 1997; Honan & Bright, 2016) and more broadly with the ‘minor’ as conceived by new materialism (Dolphijn & van der Tuin, 2012). In so doing, I enfold Spinozist-Deleuzian ethics (as taken up by Braidotti and informed by Barad) into my account of pedagogic affect, showing how an attunement to affect illuminates how minor pedagogy is conducive to producing ethical subjectivity.

This has implications for educational practices that are presently caught up in political ideologies that privilege individualised learning, results driven teaching, and personal

accountability from a very young age. It challenges the notion that there can be a singular definition of best practice. Instead of joining in with oppositional debates⁷⁹ about ‘what works’ in education, the study suggests that creating conditions for minor pedagogies to flourish coupled with the development of an ethical attunement to affect might be a realistic and sustainable pathway to improving educational practices both in schools and beyond. This is not a call to overcode the Major with the minor, but about supporting practitioners to engage in implicit activism in their everyday teaching practice, be it in the museum, the sports field, the training room or an outdoor site.

⁷⁹ By oppositional debates I mean debates about *this*, and *not that*. For example, should phonics be taught in contrast to a more context-led reading for meaning approach in literacy education. Or, is Reading Recovery a program of work worth continuing with when the ‘latest research’ suggests not?

Map Fragment X: Activating a Line of Hope

Topological coordinates: A7–E7

Focussing on the next experimental step rather than the big utopian picture isn't really settling for less. It's not exactly going for more, either. It's more like being right where you are – more intensely (Massumi, 2002a, p. 3).

In the opening map fragment or legend, I posed the question 'How is pedagogy practised in intense learning environments?' Then, as the datawork unfolded, I specified two further sub-questions: what do intense pedagogic affects do? And relatedly, what are the effects of intense pedagogic affects? I wanted to explore how a focus on affect-intensive pedagogies might extend knowledge of what an assembled pedagogy can do and how a given pedagogy might do more. I was also interested in what an intense learning environment could do and how a learning environment could do more, in practice.

While I return to the questions once more, I do not provide conclusive answers or make a simple claim to new knowledge that can be removed from the situated practices that produce(d) it. Instead, I take up Koro-Ljungberg and Barko's (2012) suggestion of living and loving the research questions as a viable alternative to answering them. This requires attending to how they have, in their various iterations over several years, produced a partial and situated knowing that is nonetheless *not lacking*. It acknowledges the research as a knowledge event-assemblage of sorts that may be brought into composition with other bodies of knowledge or bodies of artwork. Or, perhaps, nested with/in other event-assemblages.

This is a research practice that is concerned with thinking through the middle – or what Springgay and Truman (2018) refer to as speculative middles – “in the middling of its coming to be” (Massumi & Manning cited by Heimans, Singh, & Glasswell, 2017, p. 191). This “middle can't be known in advance of research. You have to be 'in it,' situated and responsive. You are not there to report on what you find or what you seek, but to activate thought. To agitate it” (Springgay & Truman, 2018, p. 4). So it seems that instead of reaching the end, we have now come to the middle of things, hopefully, to activate new lines – perhaps an array of lines. Lines of queer vitalism which pulse with un/intentionality.

In this middle, I now connect the enactment of this research project to the idea of research in a minor key (Heimans et al., 2017), showing the parallels with pedagogy in a minor key. I go on to discuss how the minor pedagogy that emerged in the three event-assemblages

of this research inhabits a propositional space. Then I put forward a series of five propositions through which I think about the implications of minor pedagogy for educational practice.

Research in a minor Key

Over the course of this project, I have come to conceptualise research situated in art-based practice as minor key research (Honan & Bright, 2016) that is performed with/in the strictures of Major research agendas but not in direct opposition to it. Major key research examines, reveals and finds, *taking* from the research site at hand (Heimans et al., 2017, p. 189). Minor key research involves uncertainty, speculation and inquiry, emerging with/in the research event-assemblage. Minorising research practices take a range of forms and may be small, e.g., resisting ‘gap talk’ when discussing literature, or large, e.g., resisting the perceived need to do a literature review altogether. However, while such practices may push boundaries, they are still constitutive of a PhD thesis that must meet certain expectations in order to ‘pass’. Minorising research practices breathe life into the established order of things. They introduce indeterminacy, uncertainty, intensity and expression into the research process. They become a site of (in)tension (Springgay & Truman, 2018).

In the previous map fragments, I connected pedagogy in a minor key with ethical practice. Likewise, in an educational policy context, it has been argued that research in a minor key also has significant ethical implications (Heimans et al., 2017). Interestingly, my research not only aligns with this position but un/intentionally enacted a parallel inquiry into how arts-based practice might be activated in a range of research contexts to not only enliven our thinking-doing but also to enact an ethics of response-ability (Barad, 2012). For example, *Topology of Thesis* (Figure 1) becomes a device that minorises the Major structure of the thesis, breathing life into a conventional ordering of introduction, literature, methodology, case studies, analysis of themes, conclusion. *Topology of Thesis* co-opts embedded hyperlinks to open a crack for you (the reader) to enter the research event-assemblage and navigate its offerings from with/in, creating possibilities for engagement that undoes the inevitability of a linear progression of a doctoral Grand Narrative. This is an ethical research practice because it creates the conditions for you (the reader) to respond while increasing the capacity for the thesis to respond in kind. Through an enabling of responsiveness to ‘the other’ the conditions for mutual response-ability are created, drawing the reader inside the thesis, and the thesis inside the reader to create a becoming-thesis-reading-topology-navigating assemblage. The possibility of a ‘live reading’ of thesis unfolds.

The topology is not the only thesis device that does crackwork. The Prelude, Interlude I, Interlude II, and What happened to data and me? are deliberately positioned to create

fractures in the thesis assemblage and introduce intensity, indeterminacy, un/doing and invention. Most importantly, these devices introduce what Barad (2012, p. 216) refers to as “poetics as a mode of expression”. The purpose of this is not “to move away from thinking rigorously but, on the contrary, to lure us toward the possibilities of engaging the force of imagination in its materiality” (ibid), or in other words, to invoke an intensity of expression to put “us in touch with the possibilities for sensing the insensible, the indeterminate” (ibid). This becomes a minor use of the language that is co-constitutive of the thesis. It acts to destabilise expectations of Major terms such as ‘methodology’, ‘case study’ and ‘data analysis’ (Honan & Bright, 2016). The thesis thus becomes a thesis in a minor key, and I become a minoritarian “writermachine” (Honan & Bright, 2016, p. 735), doing research in relation to the Major doctoral research constructs.

Propositions for minor Pedagogy

The dilemma for me has now become about how to activate a line of becoming in what could well be the ‘final’ map fragment for many readers. I wonder how, instead of it being an imposition, might this ‘ending’ become a transition point, or better a transition event-in-the-making where new lines are activated through the encounter between reader and the assembled text? So it has come to pass that this research project does not define what a particular type of pedagogy or learning environment ‘is’. It does not define or determine anything. Rather, it is concerned with how pedagogy happens ‘in’ the situated practices of intense learning environments and how the conditions for learning intensely are produced in the messy specificities and contingent agencies of a given environment.

The analysis presented in Map Fragments VIII and IX enables me to propose a (re)theorisation of ‘affective pedagogy’ as a minor pedagogy, which in turn, connects with a Spinozist-Deleuzian ethics of affirmation. I will now put forward five propositions for thinking about the implications of minor pedagogy for educational practice. As Springgay (2015, p. 78) notes, a proposition is not an instruction (or definitive research finding) but is intended to trigger “conditions of emergence”. Propositions exist in the queer space between active and passive vitalism. The purpose of the propositions that follow is to activate the new lines of thinking-doing educational practice. As such, I couple each of the propositions with a speculative ‘so, what if?’ question.

Proposition I: minor pedagogy as creating conditions for learning intensely.

What emerged in the sculpture event, the zombie program and the fight club were unique expressions of minor pedagogy that generated potentials to experience intense learning. Creating the conditions for intense learning involves increasing the capacity of a body to be

affected. The bodily openness required to receive a strong impression can be conceptualised as *a vulnerability to affect*. Becoming vulnerable is a critical part of a learner-body developing the capacity to affect and be affected. A pedagogy that sets the conditions for vulnerability is critical because learning as demonstrated in the empirical component of the research is inextricably connected to affecting and being affected. The social and material practices that give rise to intensity and intense expression may also give rise to a minor pedagogy. Minor pedagogy has value because of its power to crack open taken-for-granted pedagogic standards. It creates space(s) for inventive, expressive and intensive practices to emerge in and between existing regulatory structures in what Massumi (2002a) refers to as ‘a margin of manoeuvrability’.

So what if we shifted our focus from measuring educational achievement through testing regimes to creating the conditions for intense encounters with learning to occur?

Proposition II: minor pedagogy as crackwork. This research suggests that pedagogic regimes can be cracked open and invigorated with minoritarian work – activating, tinkering and caring – that energises Major (standardised) education practices. This requires actively tinkering with the unfolding pedagogy from the crack and involves malleable practices that I designate as ‘crackwork’. Crackwork attends to the range of contingencies in a teaching-learning assemblage, including the learning environment and the practitioners who have the primary responsibility for directing the practices that produce the learning environment. Crackwork hinges on the idea that difference is made possible in ongoing flows of affirmative relations (Deleuze, 1994), or the world’s iterative becomings. Crackwork also speaks to lines of drift (Deleuze & Guattari, 2013), with driftlines being useful ways to conceptualise the ever-changing flows of affectivity generated in situated practices of research as well as of learning.

So what if we took the significance of crackwork in pedagogic practices seriously? And, what might we learn from further inquiry into lines of drift?

Proposition III: minor pedagogy as ethical practice. The research connects minor pedagogy with an affirmative ethical practice. Ethical practice in this sense is concerned with an *accountability to the other* (Barad, 2012). It is not a moral code or a pre-existing procedure. A pedagogy grounded in affirmative ethics emphasises the production of affective flows that enhance a learner’s capacity to connect with multiple others, to connect and experience connectedness, and to relate affirmatively with the world.

However, this does not necessarily involve practices that seek equal power relations. Indeed, there are times when asymmetrical distributions of power are necessary and other times where trauma and pain arise unexpectedly – as it did at each one of my research sites. Nor does it involve avoidance of trauma and pain. Rather, a pedagogy grounded in affirmative ethics makes ways to transform such relations. For example, the study finds that the museum (when performing as an archive of affects) creates the conditions for individuals to develop a de-pathologised and de-personalised relation with trauma. Strategies that support individuals to de-pathologise and de-personalise the affects of trauma in the disease learning assemblage are critical steps in transforming an individual's negative attachment to trauma into something more generative (capacitating) and enable them to learn.

So what if we attended to how affirmative ethics might activate the potential for transforming the way we engage young people in significant yet difficult or discomforting issues?

Proposition IV: minor pedagogy as a site of radical collaboration. The research indicates that minor pedagogy can be enacted in any number of different ways – as can affirmative ethics. When minor pedagogy becomes a site of radical collaboration with nonhuman others, a pedagogy with a decidedly posthuman flavour arises: a posthuman pedagogy that is infused with affirmative ethics.

At the sculpture event, for example, artist, fungi and viticulture waste (in the form of grapevine trunks) co-labour to make *Kinetic Fungi Tower*. In the process, an accountability to the other is practised. All entities participating in the artwork assemblage are mutually empowered – that is, through their relations, they can do more. As co-labourers, artist-fungi-viticulture-waste are greater and more potent than the sum of their parts. And only together can they enhance the audience's capacity to (among other things) perceive fungi, then enter into new relationships with fungi as great recyclers of waste and powerful creators of movement – since it is through their 'eating' that the fungi tower gradually (over decades) moves towards the ground and is deemed noticeably kinetic. The radical collaboration becomes a pedagogic act.

So what if we translated the radical collaborative practice that generated Kinetic Fungi Tower into a range of educational and research event-assemblages?

Proposition V: minor pedagogy as response-able and response-abling. The research also connected minor pedagogy and response-able pedagogy. At the heart of response-able pedagogy is *caring* for the relating of things. This entails accepting the idea that

the complex realities of any given learning environments require a degree of ongoing tinkering and crackwork that creates the conditions for *mutually empowering* processes of collectivisation. Response-able and response-abling pedagogies not only open individuals up to being affected but also develop the bodily capacities of learners to respond, and thus learn to affect. Response-able and response-abling pedagogy is concerned with creating encounters where entities experience both connectedness to each other and connectedness in the worlds in which they live (Massumi, 2002a). The crackwork that this entails “involves tweaking the interference and resonation patterns [in and] between individuals. It’s a relational undertaking. You’re not acting on yourself or other individuals separately. You’re acting on them together, their togetherness, their field of belonging” (Massumi, 2002a, p. 14).

So what if the emphasis was shifted from individuals and their individual performances to affirmative processes of collectivisation that cater to difference?

Implications for Educational Practice

Arguably, minor pedagogies have the potential to make new ways of relating possible, acting in small ways to deterritorialise regimes of accountability (Biesta, 2004) and de-intensify individualism (Davies, 2018) in contemporary Western education systems. The research suggests promise in attending to the ethico-political dimensions of affect which, while still concerned with the best interests of the learner-subject, always considers those interests as ontologically, ethically and epistemologically imbricated in the best interests of the collective. Conversely, the research poses a challenge to educational practices that responsabilise and individualise the learner-subject, while undoing the idea of a self-contained individual or a pre-existing learning environment. In so doing the research raises issues with educational practices that essentialise understandings of the ‘elite athlete’ or ‘gifted student’ – or ‘innovative learning environments’. At the same time, the research troubles our cultural attachment to high-stakes testing by questioning current practices that focus on individual bodies and their individual performances *above all else*.

This research makes salient how standardised (Major) models of pedagogy and learning space design rub up against the complex realities of situated pedagogic practices which always already involve the contingent agencies of a range of participants – including but not limited to humans. With this said, the research does not oppose educational orthodoxies, which are understood to play an important role in stabilising and ordering the (school) learning environment. Nor does it consider the Major or minor practices as inherently more desirable or even stable. There is no essential hierarchy. Rather, if we are to understand these practices, we need to consider what they do and what is made possible by what they do.

Encountering a Climate Activism Learning Assemblage

My youngest son is now roughly the same age as I was when the French bombed Greenpeace's flagship, the Rainbow Warrior, in New Zealand amidst fierce opposition from the Pacific Nations to the French nuclear testing program in the region. Fast forward thirty-plus years and the environment is again in a state of emergency. This problem is one of grand proportions and is shaping up to be the biggest problem my son's generation will negotiate in their life-times. Yet Australia's politicians and global leaders are seemingly deaf to scientists' dire warnings that the time for action may soon pass. The fight for a nuclear-free Pacific in the 1980s and 1990s pales in comparison to the fight for a sustainable planet now. But there is hope. For example, there are some inspirational young people leading the charge, with support from their families and communities. In an intense speech to the Annual Meeting of the World Economic Forum held in Davos (January, 2019), Greta Thunberg announced to the world that our house is on fire, and that we need to act like the house is on fire and do whatever needs to be done to limit the climate crisis that is unfolding before us. She tells the 'global elite' before her, "I want you to panic" (The Guardian, 25 Jan, 2019)⁸⁰.

Greta's activism coupled with the distributive capacity of social media has helped galvanise young people around the world who are troubled by the deteriorating climate in a way that was not possible during the nuclear-free Pacific protests of the 1980s. She has helped to build individual *and* collective capacity to respond to the climate change emergency in an organised, collective school walk-out as part of a global climate strike in a few weeks – with the support from the adults in their lives, small business and trade unions. Meanwhile, Australia's prime minister of the moment, Scott Morrison, paternalistically responds to our young people, telling them to get back to school and leave politics to people 'outside of school', or in other words, adults (The Guardian, Tues 27 November, 2018)⁸¹. To this, the School Strike 4 Climate Change organisation says, "Our politicians clearly aren't listening to the educated, so we have to take to the streets to make them. Why should we learn about history and then not be allowed to make history? Activism is learning" (email correspondence from schoolstrike4climate, Tues 26 February, 2019).

And so, on March 15, 2019, I accompany my eleven year old son to the School Strike 4 Climate protest to activate him-me-our engagement in an Activism, which maybe, just maybe, might set off new lines of de- and re-territorialisation that will generate the impetus for radical

⁸⁰ <https://www.theguardian.com/environment/2019/jan/25/our-house-is-on-fire-greta-thunberg16-urges-leaders-to-act-on-climate>

⁸¹ <https://www.theguardian.com/global/video/2018/nov/27/scott-morrison-tells-kids-going-on-climate-strike-to-get-back-to-school-video>

change in ethical-thinking-doing climate on a global scale. A throng of 20,000 mostly young people gathers in Melbourne city. The teenaged student organisers ask the crowd over the loud speaker, “What does democracy look like?” and the crowd shouts back in a chorus, “Democracy looks like this!” and then the chant repeats, becoming a refrain. My son pauses mid chant and looks across to me, holding his homemade ‘Unf*ck the World’ sign high, a flash of realisation crosses his face. He says “Mum! Mum ... do we live in a democracy?” I nod and the crowd chants, “Democracy looks like this!” In *this* moment, the un/intentional pedagogic force of *this* encounter creates the conditions for *this* experience of learning intensely to occur.

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