

Send in the Clowns
**Scoping *Non-Representational Theory* as Ally and Method
to Foster Inclusiveness in Digital Innovation**



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Dedication

To those who are missing

The PhD process is an unnecessarily cruel, codified, ritualised, and inefficient exercise. It hurts me to see some of the smartest, most creative, informed, experienced, and intelligent people having been brought to a point where they have quit the process because of reasons that are unrelated to matters of competence, knowledge, intelligence, talent or industriousness. -That is if they have made it to this stage.- I am holding the foolish hope that this piece of work is contributing to a toolbox that can emancipate, in its own modest ways, institutional ways of knowledge production such as research and academia. May this work be an ally to those who seek to catalyse the emancipation from that which is obsolete, foster what is compassionately fruitful, and change what can be fixed. Rigour is not heartlessness. *Getting to know about knowing* in an academic context though has been a disillusioning process. I want this to be an encouragement to those who - for the wrong reasons - have become excluded from the circle of those who have made it through this performance.

Lists are violence.

I am infinitely indebted to all and everything;

You don't know who you are, and, you know who you are.

#BlackLivesMatter.

Declaration

I hereby declare that except where specific reference is made to the work of others, the contents of this thesis are original and have not been submitted in whole or in part for consideration for any other degree or qualification in this, or any other university. This thesis is my own work and contains nothing which is the outcome of work done in collaboration with others, except as specified in the text and Publications List.

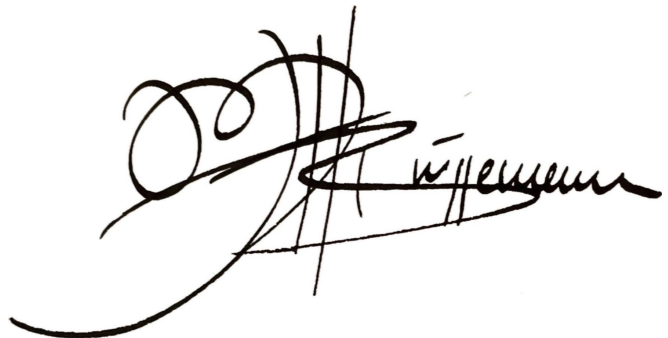
This thesis contains way too many words [in/ex]cluding appendices, bibliography, footnotes and tables.

I furthermore hereby declare that

I'd rather be a clown than any cyborg and/or goddess.

MJ Hunter Brueggemann

December 2023

A handwritten signature in black ink, appearing to read 'MJ Hunter Brueggemann'. The signature is stylized with large loops and a long horizontal stroke at the end.

Acknowledgements

PDFs are not made for human consumption. They were designed to be consumed by machines. Why on earth are we doing this to ourselves?

I acknowledge that this work is exclusive. That it is resistant, that it is contradictory, that it is unscientific and that it is weird.

I also acknowledge that this work is inclusive. That it is inviting, that it is consistent and rigorous, surgical in its reasoning and inner logic, that it is objective and that it is ordinary.

I also acknowledge that this work is yours, as much as it is *of me*. That it is collaborative, that it is *your* labour as much as it is mine, and that there is a high chance that we will misunderstand each other.

I acknowledge that all this is unusual. I insist that *unusual* is not a synonym for *bad*. PhDs are not made for human consumption. They seem to have been designed to consume humans. Why on earth are we doing this to ourselves?

I need you to acknowledge that this work is needed, overdue and transformative -

if only by existing.

Abstract

Send in the clowns is the account of a post-disciplinary, critical, creative practise that over the course of 6 years explored the subject of ‘digital innovation’ and ‘innovating in the digital’. *The digital* in this context is interpreted in the widest possible sense and includes any instance where cybertechnology relates to/with humans. This framing has put forward my proposed concept of **the digiscape**; a phenomenological interpretation of cyber-technology.

In 3 distinct interventions (Ch.3,4,5) **I have appropriated literatures on inventive methods, sustainable design and diffraction for my thinking.** Through the lessons learned from each *intervention* I have constructed my own interpretation of *non-representational theory and methods*. **I make the case that these can be a fertile ground for emancipatory politics** concerning research and development in/on *the digital*.

Seeking to test my claim that such approaches can be deemed valuable to practising innovators, **I have submitted my hypothesis together with a non-representational experiment** (*‘Lickable Cities’*) **to CHI 2018** ^[a] (the pre-eminent journal in the field of *Human-Computer Interaction*). The submission was accepted. Ch.6 discusses the implications of this on the scholarship of *non-representational-theory* and philosophy.

Thus my conclusion is that non-representational approaches are indeed of value to innovators as a means to catalyse a type of awareness(es) that makes otherwise inuterable questions possible. I am claiming that through fostering alliances across methods, traditions, disciplines, writing styles, ethnicities, media and epistemologies - with the help of *non-representational theory* - more **inclusive research is enabled** and **method itself can be invigorated** (Ch.7).

As my work is concerned with *knowing about knowing*, and *knowing about ways of knowing*, **my work is firmly placed within Science and Technology Studies** (STS) and is written for an STS audience.

^[a]The ‘ACM’ Conference on ‘Human Factors in Computing Systems’, the principal venue for research in the field of ‘Human-Computer Interaction’ (HCI)

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Publication list:

Papers and Conference Contributions (chronological order)

- Thomas, V., **Brueggemann, M. J.**, Feldman, D. (2015). I am more than the sum of my parts: an e-waste design fiction. In *EnviroInfo and ICT for Sustainability 2015* (pp. 57-65). Atlantis Press.
- C02K31YADRVG, **Brueggemann, M.J.**, Strohmayer, A., Marshall, M., Birbeck, N. and Thomas, V., (2017). Reflexive practices for the future of design education: An exercise in ethno-empathy. *The Design Journal*, 20(sup1), pp.S1260-S1269.
- **Brueggemann, M.J. H.** and Orr, H., (2017) '[Ab]user Experience: A Kinaesthetic Exploration of Legacies in Human-Computer Interactions', *Utopia After the Human; 5th Symposium of the Imaginaries of the Future*. Cornell University, Ithaca NY. 11-12 April. Leverhulme International Research Network.
- **Brueggemann, M.J. H.** and Young, E. (2017). Her[sonifications] a interactive Sonic Sculpture. *Data Publics: Investigating the Formation and Representation of Crowds, Groups, and Clusters in Digital Economies*. Lancaster University, 31 March - 2 April. Data Science Institute, Lancaster University.
- **Brueggemann, M.J. H.** and Young, E. (2017). PPPP : PUBLICS, PLURALISM, PROTEST, PERIODS. "Thinking with Hannah (Arendt)." Academic paper accompanying and contextualising an artistic installation. *Data Publics: Investigating the Formation and Representation of Crowds, Groups, and Clusters in Digital Economies*: . Lancaster University, 31 March - 2 April. Data Science Institute, Lancaster University (pp. 1-7).
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- Thomas, V., **Brueggemann, MJ. H.**, Wang, D., Darby, A., Wohl, B., MacDonald Vermeulen, L., Bates, O. and Feldman, D. (2018). In the eye of a hurricane there is quiet, for just a moment, – . In *Extended Abstracts of the 2018 CHI Conference on Human Factors in Computing Systems.* (pp. 1-10).
- **Brueggemann, MJ. H.** (2021). My BROWN WALKING-MOVING BODY as [M]ethod in Computing. In *Decolonizing Design Practices: Migration and Mobility in HCI Rethinking Boundaries, Methods, and Impact* Extended Abstracts, May 8–13, 2021, Yokohama, Japan. AC, New York.
- **Brueggemann, MJ. H.** Smith-Wrinch, H. (2021). De-centering whiteness as approach to decolonize AI and Machine Learning. In *Decolonizing Design Practices: Towards Pluriversality at CHI Conference on Human Factors in Computing Systems.* Extended Abstracts, May 8–13, 2021, Yokohama, Japan. AC, New York.
- **Brueggemann, MJ. H.** and Orr, H. (2022). The Abductive Wisdom of Dance as an Empirical Method. At *ACM International Conference on Interactive Media Experience, IMX2022 - Designing the Performances of the Future; The HEartS Professional project in action: exploring the role of VR in performing arts.* Aveiro, Portugal. 22 - 24 June (pp. 1-6).
- **Brueggemann, MJ. H.** (2022). Post-visual pedagogies for emancipated affective learning: UAL Online PAR 11. At *UAL Education Conference 2022.* London, United Kingdom. 11th and 12th of July 2022.
- **Brueggemann, MJ. H.** and Khan, M. (2022). Sensory-Political Pedagogies through Data Walking. At *UAL Education Conference 2022.* London, United Kingdom. 11th and 12th of July 2022.

- **Brueggemann, M.J. H.**, Neumann, V., Kouadri. S. and Ali, S. M. (2022, December) Taking stock of what we are currently thinking: A systematic literature review on decolonial computing practices on AI in healthcare. For *4S/ESOCITE 2022*. Cholula, Mexico. 7-10 December 2022.

publishing standards tend to construct detached, 'objective', 'rational', inaccessible writing as good writing [...]. Is there room for 'messy' writing that calls for speculation? that poses more questions than it does answers? That embodies grief and lament [...]?

Kamunge et al. [152, p.190]

In the realm where shadows govern light, the act of withholding weaves as potent a tale as the boldest declaration. For in the silent spaces between words, knowledge dances - elusive and ever-changing. It is not the gift of insight that one offers, but the invitation to a labyrinth where understanding is earned, not bestowed.

As ink meets parchment, both reader and text embark upon a journey of transformation, eternal and unfixd. Thus, the quest for truth becomes a mirror, reflecting not just what is revealed, but the vast expanse of what remains unspoken.

████████████████████ [████, p.████]

Reflections from the Viva

Mermaid - in 6 movements

ONE

It is 930 UTC;

930 GMT

830 CET

And I need to make a decision:

To pill or not

I have consulted University regulations,
looked up ‘doping’ definitions,
felt like an imposter in the academy
an impostor in neurodiversity,
and feel adequately uneasy with the term disabled.

Erin Manning spoke about ‘neuro-conformity’ being an unhelpful mirage;
not worth our respect, time effort anyways

True.

Kierkegaard knew this too; wrote useful things about bell curves – and something like
“nobody being the average” –

But bottom line is: There still *is* an average; there still is a bell curve. I am confident – (95%!)
Significant!

But brains like mine are all to one side of ‘it’; loitering around the 96th percentile. . .

[Therein again: still distributed like a bell curve]

And so,
rigorous academia does its job, and does it well.
Does its gardening.
And by that I mean I mean it teaches how to think:
Teaches how to be original - correctly - .
And by that I mean it weeds out weak thinking.
Prunes the twigs.
Cuts the FAT.
Nurtures critical thinking.
Critical in the right way.

And celebrates rigour.
Because it does it well.

TWO

Clearly does it well!

It took 10 months to develop a COVID vaccine!

It clearly works! I am 95.4% confident. Clearly research works.

Which fool would change horses mid-race?

[and it dawns on me . . . that I am not a horse. . .

[No way of knowing certainly. . . I admit.

[I have not yet been seen by a vet, so – How would I know?

[But still. . . something dawns on me;

[I am not a horse.

[Other queer folk whisper I've been told I'm more like a car.

[A race car. . .

. . . but with

bicycle breaks.]

We grade good work with 'good',

And very good work with something better.

According to "objective" rubrics – clearly displayed in faculty handbooks and transparent glass boxes on our faculty walls.

To be looked at

(no touch please!).

And according to BS 4821:1990;

“BRITISH STANDARD ON THESIS PUBLICATION”

(93.00 pound membership price; and 186.00 GBP for those without).

I had my library send me one.

And when I mark: I spend 7 minutes 30 on a 2500 word essay that took 2 weeks or so to write. 7 minutes 30.

(I get paid for 5).

The system works – like caterpillars –

forward,

forward,

forward,

Not 'works' as in 'functions' – or does its job.

Rather: it is the job.

A job that needs doing.

And occasionally it spits out a vaccine.

That which is successful in 'Cultural Geography' can fail in Sociology.

And so, slowly,

communities establish;

develop values;

affirm their values;

define their remits,

practises,

and myths.

Which we then affirm to each other

to grow more of which fits well enough to be recognisable and yet is different enough to be noteworthy.

Difference is then the fuel that makes the faculty 'work'.

And with that, *difference* becomes consumed.

THREE

As much as
I picked STS, STS picked me.
And when I get praised for ‘an interesting provocation’
‘an original approach’
or
‘a new take on something’,
I breathe a sigh of relief.

I get consumed and I’m deemed palatable.
Or at least recognisable.
I am not «lobster ice cream»
but «crème d’homard glacée»

But my queer gaze is not an act; is not a choice.
My talent is not how I look – I was born with these eyes.
My talent is in archiving myself: Writing ‘menus du jour’s
The menu makes me palatable: the dish remains the same.

Code-switching is so much fun,
Queer people are bilingual.
Code switching is survival,
Queer people are polyglots,
Code switching is flagging,
Queer folx invited the hanky code.

There are days when I pass.
On those days I go from Baccalaureate to BSc; to MSc to MRes; to MRes to stipend, all the
way into the viva

it is still 9:30

.

FIVE

And in December 2018 I got a purple slip. From a special pad – with numbered pages!

Two men put me into a little room put a hood on me (twice) and looked into my head.

Put bright blinking glasses on me.

Made me recite numbers who's correct order I had to remember.

And then the experts told me something
I long knew, but didn't believe
I long believed but didn't know
something I didn't know, and didn't believe or
something I always knew; belief irrelevant.

This pink slip from a special pad,
I took to a special house,
to a special person,
who went to a special vault,
to get a special box,
with special pills,
at a special price.

So special, my health insurance does not dare to desecrate it by coming anywhere near it
with its vulgar currency.

I could get amphetamines easily close to my home in Salford where I live. but these are
special.

I have a pink slip to prove it.
The box says 'retard'.
This is not a metaphor.
The box says 'retard'. This is not a metaphor.
The box literally says retard.

It is still 9:30

SIX

January 2019

I am dosed in the right way.
And I pass so much better.

I sit along the pale folk in the submarine.
Partake in the pale ways; the *correct* ways of diving.

Do boring things with corals.

I make my argument for diversity in a way that keeps me on the email lists.
I get invited to talk and do *something* original.
I talk about diversity. And tech. And the *pink* economy.
Did I say 'pink economy' – I meant digital economy.

Apologies –

– old habits die hard.

I commodify who I am, what I do, how I do it; why I do it, and how I do not have a choice.

(I still haven't been seen by a vet.)

But I have receipts that prove I participate in the neurodivergent economy.

I spend - therefore I am.

therefore I can be.

therefore I can talk.

Still 9:30

The pill lays there.

Do I dive free, or take the submarine?

The round trip costs 2 euros 75.

It lasts 6.5 hours and starts in about 35 minutes. You can very much feel
the bulkhead closing.

Time for me to make a decision:
To pill or not
Because in 30 minutes
I have to talk
about
inclusion and diversity
in the digital economy.

Reflection and Response regarding the *Viva*

I want to thank my External Examiners Prof. Rebecca Coleman and Prof. Emerita. Claire Waterton for the opportunity to discuss my work in depth and rigour in my viva. I am grateful for their work and willingness to engage with the provocation that my work stives to be, take serious its contents critiques, provocations and performativity - and give my work and myself an opportunity to give context and clarification where needed. They embraced instances of disagreement in a warm and constructive manner and permitted me a chance to make my case for the necessity to break with academic tradition for the sake of consistency of message and objectives, and I felt I was given a fair hearing as to make my case for *why the thesis is as it is*. Aside of minor changes to the text (typographical errors and minor points of clarifications which have been listed to me in a clear list to address) the key actionable point of revision is the crafting of this foreword which is based on the following prompt:

Insert a statement at the beginning of the thesis (beginning of Chapter 1) that provides the reader with a clear indication of ‘why the thesis is as it is’. The purpose of this statement is to orient the reader to what they should expect to read and set out a rationale for the decisions you have made, including decisions concerning: - the form and structure of the thesis (its productive constraints) - the style of writing - the deployment of many different concepts, terms and traditions without definitions and explanation (in many cases).

We encourage you to consider this statement in terms of the principles and practices of inclusivity that are central to your work.

The statement should include discussion of :

- writing;
- form (playing with form and pushing boundaries);
- multiple genres;
- structure (including why Chapter 6 is placed where it is);
- repetition and/or rhythm;
- referencing style.

You should draw on the discussion in the viva, and can use this statement to bring in and/or reflect on the viva if you think this is appropriate and productive. You can be creative with how you write this statement. You can, but are not required to, include this statement in Chapter 7.

I will address these points in the following preamble to the main body of the thesis.

Preable:

Part 1

Dr. Bea Wohl: Allow me to introduce myself. I am Dr. Bea Wohl, and my pronouns are they/them. My PhD is in Digital Innovation, with a particular focus on *computing education*, which was also completed at the Lancaster High Wire CDT, where we first crossed paths. This recording serves as a preamble, addressing the key points that your examiners have requested for your PhD discussion, in a manner tailored to the context of your research.

Before we delve into the questions, I want to express my profound appreciation for the privilege of accompanying you throughout your PhD journey. Your work is not only exciting but also crucial as it challenges the very essence of what a PhD represents. However, it's important to acknowledge that this unique approach has brought its own set of challenges and emotional labour for both of us. While we won't delve too deeply into the emotional aspects here, I want to recognise that our PhD experiences have been emotionally taxing and commend you for reaching this stage successfully. The difficulties encountered have not solely been intellectual, and that's worth acknowledging.

Me: Hmm. Who am I? I am a multiplicity of things, we all are. As it pertains to *this* I am the author. I'm your friend. I'm a student. I am now a tenured lecturer. I don't know which hat I'm wearing right now. All of them at the same time? Oh, and yes, I guess, amongst many things I am also somebody in mourning - as you bring it up. I will leave it up to you and whoever reads this to label me with whatever is most useful to them.

Dr. Bea Wohl: Your self-description is entirely appropriate. It underscores the multiplicity that defines us all. You're not just one thing, and this label reflects the interdisciplinary complexity that is inherent in your thesis. We come together as past and current colleagues, as well as friends who share experiences. Acknowledging this diversity of our mutual roles and relationships adds transparency to this discussion.

We agreed to commence by discussing the broader topic of "Corrections." Having gone through this process myself a couple of years ago, I had my Viva during the challenging times of the pandemic in August 2020. It marked the beginning of an emotionally taxing period for me, as I imagine it has for you as well. During our academic journey, we've become accustomed to receiving grades, whether A, B, C, Distinction, Merit, or Pass. Consequently, we enter the Viva with certain expectations and tend to map those onto the outcome, seeking a neat categorization of our performance.

However, after completing my own Viva, I came to realize that "Corrections" are merely a lingering echo of a process already concluded. Before we delve into specifics about your corrections, would you like to share your own emotional or narrative perspective on the correction process?

Me: The one thing that I picked up from what you said is <the expectation to be graded> and I'm really glad and proud to say that those are not categories I deal in anymore. I didn't write this work for the Academy; that is very important to me. I didn't write this with the primary intention to contribute to knowledge *per se*. I mean, I'm inevitably doing that, inherently yes, but that is not the motivator.

I possibly chose the hardest route I could have taken through this. But that was a conscious decision and a commitment. It was my take on what my activism means to me. I wanted to produce and discover new knowing; I want my work to be weird and "pass" not for the sake of being weird; I want this piece to be an argument-in-itself. <It's not an argument through the text, it is an argument by existence.> I wanted to create a work that is uncompromisingly me, or – us. I want to demonstrate that I and my communities have a place in academia without distorting our voices, or losing our voices. I want to broaden the envelope of what can be considered to be admissible to the type of work that qualifies one for a PhD. I want this piece to be a precedent for anybody else who finds themselves excluded through the medium, ritual, and tradition-for-tradition's sake; those hindered by the process or denied by the formalities.

They can hopefully use the existence of my work as an argument under their belt to claim the place that they may well be otherwise denied. That is the point of my work. <Those> are the categories of my dealing. It's not about any perception of grade, it's about what can be the *realpolitische* consequences of my thesis existing. Of this thesis existing as <an object of power> in itself.

Dr. Bea Wohl: Indeed, as Audre Lorde famously said, "For the master's tools will never dismantle the master's house." Placing your thesis within the academic realm, while simultaneously challenging and pushing against its norms, is a profound statement. It's worth noting that you're not the first to approach your Viva in a spirit of opposition to the process.

I think that what is interesting about your work is that you bring with that activism a commitment to intellectual honesty and a deep intellectual knowledge. And so when you are using - for want of a better term - the tools of the oppressor, the tools of the Academy to challenge the Academy, you're doing it with a great deal of depth and knowledge, and you're doing it with a knowledge of how those tools function.

Me: I really reject the idea that this work is oppositional. It is in many ways really not. It is a love letter to the Academy. It is the embodiment of a hope for change that I compassionately yearn for. It is an expression of my fervent passion for the Academy. But acknowledging in this love, that The Academy is not in a state where I want it to be. It is not in the state that I want to see in. The Academy is in a state of toxic self-contradiction and those who are paying the biggest toll for this are the ones I want to empower.

Learning from Indigenous communities and observing historical indigenous design practices shows us that an outright refusal, denial or opposition to imposed Rule (especially if unjust, idiotic or ineffective) rarely leads to positive outcomes. Direct opposition is perilous if you are not able to act as a key curator of power. Instead, I believe in resistant, proud acquiescence as a more creative and productive space, at least from my perspective. Through rigorous compliance, we can expose the absurdity of poor rulesets and make a compelling case that blind submission is unwarranted, particularly when rooted solely in tradition or convention.

My work seeks to be situated within this proud tradition of acquiescence, resistance, and profound critique. After all, the communities most affected by these issues are the ones paying the price – the Mad, the Queer, the Foreign, the Embodied knowers, those with Tacit and Inherited knowledge, anybody else who finds themselves decentred, and all conceivable intersectional combinations thereof. While I may come across as a harsh critic, it's fundamentally an argument driven by love, compassion, and admiration for the Academy, rather than outright opposition, although I can understand how my work might be misconstrued as such.

Dr. Bea Wohl: I appreciate the clarification because it's crucial to establish early on that your work is an act of love. This sets the tone for our discussion.

Now, let's move on to the physical tools you used in writing your thesis, specifically LaTeX. While I haven't used LaTeX myself – my preferred tools are Scrivener and Word – I'm aware that LaTeX tends to evoke strong opinions, with some people loving it and others not so much. It's undoubtedly a polarizing tool. However, you mentioned earlier that one of the reasons you chose LaTeX is because you could push it beyond its intended capabilities. I believe this is a significant theme that resonates with your entire thesis – pushing the boundaries of what a thesis can be.

Me: Indeed, "pushing" might not be the right word; perhaps "coercing" or "wrestling" with it. As Ingold has described in his work, when discussing the relationship between a potter and their medium: the clay itself, the tools, the weather, - they all have agency in determining the final outcome. No less than the potter trying to shape the artifact. LaTeX is a

powerful tool that excels in many areas, especially when it comes to conventional writing. It streamlines the academic publishing process beautifully. However, my argument necessitated an unconventional approach, and suddenly, I found myself taking an academic tool designed for efficiency and using it to explore the outer limits of thesis production, making it do things it wasn't originally meant to do.

Suddenly my argument, the meaning of the thesis and the literal medium with which I write, they all need to be coerced, tempted, convinced, or sometimes strong-armed or tricked or lured into doing what I need them to do. And on occasion, I also failed and I needed to surrender to the self-wilfulness of my medium. There were instances where I had a clear vision of what I wanted the code to create, but the printout turned out differently, but different doesn't mean bad or wrong, and sometimes through these unexpected results I've found expressions of my wordings that actually suited me well.

LaTeX, as a medium, has become a co-author of my ideas and how I convey them. Wrestling with it mirrors my own journey, and it was an essential part of understanding the process of knowledge creation.

Dr. Bea Wohl: You're illustrating how even your struggles with LaTeX contribute to the overall theme of your thesis, which is about exploring and demonstrating what's possible. Even in those moments of friction, you showcase that poetry can be presented through LaTeX.

Now, let's delve into the content of your work. Your title specifically mentions clowns, and the phrase "Send in the clowns" alludes not only to clowns but also to a particular era. Is there a deliberate attempt to be provocative? Who are these clowns? It might seem like a simplistic question, but are you implying that the Academy itself could be seen as the clowns? Moreover, your title sets a playful tone right from the start, which implies a sense of playfulness, teasing, and perhaps even magic or sleight of hand.

Me: Certainly, and when we think of clowns, various archetypes come to mind, such as Pierrot, the melancholic clown, the Jester, the Harlequin, each with a unique role. Let's consider the clown as the Jester, the one who speaks unfiltered truths and doesn't need to censor themselves. In doing so, they may be the wisest of all. Yet, it's only by intentionally not letting others take them seriously they attain a state of power where they can articulate truths that would otherwise remain unspoken. The title of my work intentionally emphasizes the importance of doing things differently and unfiltered.

However, I must admit that my entire work perplexed me at times. I knew it needed to exist in this manner, and I refused to compromise on that. It was only when I stumbled upon this title that everything fell into place. That was the instance when all my drafts up to that

point suddenly aligned in a way, became reorganised intellectually. This title represents the pivotal moment when suddenly my work made sense at a whole new level. I find it crucial to preserve that. Removing it would be a form of erasure. And now, the title serves as a kind of coded message for those who may benefit from this work.

Dr. Bea Wohl: You're highlighting that the role of the Jester or the clown is one of critique. Your work critiques the Academy, and it's vital to acknowledge that these critiques are serious and should be taken seriously. However, the seriousness of these critiques is tempered by the levity and playfulness that the clownish theme adds to your work.

Me: Clowning is a serious business in its own right.

Dr. Bea Wohl: When I think of clowns, I often associate them with the rodeo clowns that I saw in my own youth.

Me: The role of the rodeo clown is to save the lives of injured bull riders. Through their garish costumes and movements they distract the charging bull, diverting their attention from injured individuals who need to be carried out of the arena safely. The rodeo clown's garish attire serves as a distraction to facilitate rescues.

Dr. Bea Wohl: In some ways, I feel like what you're saying with "Send in the Clowns" that we need to send in the Clowns into academia to rescue the people who are being left behind. Like you said, this is a love letter to academia, but it's also an acknowledgement of those who are left out, those who are ignored, those who are barred access from the Academy. And so you are sending in the clowns, in a way, to pick up those people who have fallen along the road of thesis writing, specifically "thesising" as you call it.

Me: And you're well aware of how the song "Send in the Clowns" concludes: with the words '... don't worry, they're here!'

Dr. Bea Wohl: Indeed, it's as if your thesis's unofficial closing-title could be 'They're here.'

Me: With an interrobang, of course.

Part 2

Dr. Bea Wohl: Moving on to the academic structure of your work, you have a complex relationship with the idea of a hypothesis. Given that your research is situated within STS (Science and Technology Studies), which questions the production of knowledge, this complexity is understandable. Do you have a hypothesis, or how do you approach this concept in your work?

Me: The way I understand and practice STS in the context of nonrepresentational theory is that I think its power resides from being able to tell the stories that are flying by just under the subconscious, just under the utterable, and having a hypothesis to do that kind of work almost feels contradictory because the hypothesis funnels and channels your attention. Its aim is to focus your endeavours into something specific.

Yet, if my aim is to find the pre-conscious, it feels a bit contradictory for me to have a hypothesis per se, which operates very much not only at the conscious, but therein almost epitomises ‘the rational’. If I am required to articulate one, I can, but to me, this is not a priority. Others may differ, and for those I’m happy to oblige. But frankly, I have no strong feelings either way. The concern whether I have a hypothesis or not, I feel, is somewhat theological. Sometimes metaphysics and ontology are entertaining to engage in. Just not too much because life’s too short for metaphysics. (laughter) At least when operating within a western context.

Dr. Bea Wohl: Indeed, life is too short for metaphysics. (laughter) However, if you were compelled to state a hypothesis for your work, what would it be?

Me: Non-Representational Theory (as an intellectual toolkit) makes a powerful addition to digital innovation in particular with regards to its potential to make the digital a more inclusive space to marginalised communities.

More specifically I have sought to demonstrate how NRT can be used to inform creative practice research, and thereafter I have reappropriated this toolbox from its originator(s) and attuned/refracted it to be an ally to communities at the margins. That is the “meta-game” that I am playing, so to speak. Under the hood there is a lot more going on, but from a purely academic POV that is my narrative scope of my creative practice and activism.

Dr. Bea Wohl: I think this acknowledges that your work refuses to be confined. Speaking of limitations, in your literature review, you chose to focus on works published after 2005. This represents less than a 20-year period within the literature. However, your knowledge of

theory extends beyond that timeframe. Why did you choose to limit your literature review to post-2005 publications?

Me: 20 years, in the domain of computing is an eon. Given the speed at which computational research operates, and the slow speed of the peer-review process, has led to the deprioritisation of journal articles in favour of conference presentations. In some domains even pre-publications are more important than awaiting the completion of the formal peer-review procedure. Evidentially then, book publications in these specific domains carry little weight there whatsoever. The disciplinary changes are truly perplexing. The opposite however would be true in History – at least that is what I was told by my former Professor when I took units in the faculty of History. There, journal articles and conference publications are the disciplinary low-impact endeavours. What makes ‘an appropriate timespan’ is contextual. Aware of this, ‘time’ was not a parameter that I wanted to prioritise. Instead I drew the line when I reached saturation and my supervisors sanctioned this as appropriate.

Dr. Bea Wohl: Your literature review is nonetheless very unusual. It operates acquiescently, not docile.

Me: Literature reviews need not be docile. Literature reviews are a curatorial act, and curators are the most powerful people on earth. I don’t mean gallery curators, but those who get to set the context of discourse. Yet, my literature review is – I think – ordinary. But I will very much admit that it operates at several political and argumentative levels in ways that most reviews do not. That is maybe unusual and unexpected, but I am being very explicit about that. Maybe we can agree on it to be appraised as being a very unique and unconventional piece of writing, and therein humble, ordinary, acquiescent, honest, and proud and docile.

Literature reviews may feel somewhat like academic checkboxing, and I thought I would weave in an argument into my literature review and that demonstrates through practice more than argument that other unaccustomed ways of knowledge production can be valuable. Conducting a systematic literature review hinges on establishing firm, albeit somewhat arbitrary boundaries. Within these boundaries, a specific knowledge domain is defined for exploration. Anything beyond these boundaries is excluded from my review, while everything within them receives equal attention.

To create my knowledge domain, I surveyed notable STS departments worldwide, examining the journals they consider essential in STS research. I compiled a list of journals and iteratively constructed a knowledge domain in which I was comfortable working. This served as a foundational structure for unbridled knowledge exploration that followed.

It was only during the Viva that I realised that one significant journal had completely eluded my attention, and I acknowledge that omission. If I were to rewrite the literature review, I would undoubtedly include the journal and the seven articles that fall within my parameters. However, due to various factors, including the challenges posed by the COVID-19 pandemic and my role as a caregiver, I made an unfortunate oversight. These things can happen, although they should not, and I deeply regret the omission.

Dr. Bea Wohl: I think that's a crucial point to recognize. I sit comfortably within the deconstructionist and post-structuralist vein, and I believe it's essential to acknowledge that this omission was unintentional. However, there is also a broader lesson here—to recognize the fundamentally arbitrary nature of systematic literature reviews. It's an arbitrary set of rules that are making an arbitrary set of decisions to arbitrarily draw circles around what is in a discipline and what is not in a discipline. The scientific process, especially within the social sciences, seeks systematic and canonical appearances while inherently acknowledging the arbitrary and subjective nature of knowledge creation. What I've seen happen to you over the last couple of weeks is you've beat yourself up over leaving out a particular journal because it fit your criteria and yet it did not show up on your radar. We create these lists and they ought to be complete, yet we rarely ask 'complete to whom'? And that's the point to make, maybe at this juncture, is that if you had had a different set of examiners, they either wouldn't have picked up on the journal being missing and being absent, or may have picked up on other journals being absent, and so there is this nature of the scientific process, particularly within the social sciences, of wanting it to appear systematic, wanting it to appear canonical, and yet at the same time accepting the arbitrary and subjective nature of knowledge creation. And that you missed this journal or maybe other journals, you did the work you did and you did it as completely as you could. Personally, I think it also reflects what is the real fallacy of the PhD process, which is that the PhD is one of the few things we do in our academic careers that we do in isolation. With support, but we do it in isolation in a way that is actually incredibly unusual.

Let us move on to the next item I want to hear more about from you. You switch between languages, not often, but there are sections that are in one language or another, and I wondered why it felt necessary to switch between languages. And how you feel that sort of affects the scope of the project. Do you think that makes it harder for different audiences to engage? But also how that situates the work within a context of a tradition of multilingual scholars.

Me: I have heard over and over again that German is a very good language to do philosophy in. And I don't know if that's necessarily true, but it sounds good. I think there's a playfulness to the German language, though. It is very malleable. You know, you can make up words,

and the grammar is really rigorous, potentially rigid, but within this really firm structure and complicated grammar, as long as you comply, anything is allowed. Anything is possible. This makes German, and thinking in German, and reading in German, and even reading texts written by Germans, really special to me.

And occasionally, I take some of this “Germanness” over into English, and I insist on my right to model words to suit me; to try and maintain this linguistic playfulness. And the other aspect that inspires me to do weird things with languages is the work by Ngũgĩ wa Thiong’o, the Nigerian writer who insisted on writing passages in his native language Kikuyu in an untranslated manner. He outright refused to translate them and refused to participate in the translation of his books into other languages intentionally and with purpose. The denial of this work <is> the work; and in the absence of surrendering to pressures of publisher and maybe readers, he offers us a new type of lesson to those attempting to ‘get to his stories’. In jargon I may consider this an agnotological approach to knowledge production.

The curation of knowledge then becomes an effort of curation through what can’t be known, and acknowledging that these are permeable categories contingent on the audience(s), not the text. It depends on reader, context and maybe coincidence under which circumstances certain knowledge becomes knowable.

It would have been easy for me to translate these foreign language parts, but the reason why I’m leaving them in the original there is I’m very aware that the majority of the people who read my work will not be able to speak German, so the passages will mean little to them and that is the intent.

Providing a translation does not ensure a uniform interpretation of my work by every reader. Indeed, each individual engages with my work from their unique perspective, informed by their distinct background and personal interpretation of the language I happen to employ. The fact that a text is in English does not equate to a singular, shared experience among readers. Certainly not when addressing questions with regards to the nature of representation itself. I wish to emphasise that each person's interaction with this work is inherently unique, shaped by their individual experiences and viewpoints. Therefore, it's crucial to acknowledge this diversity of interpretation. Different people will inherently perceive and understand the work in varied ways, and this is something I embrace and utilise. I reject the notion of reading as a naively democratic or homogenised process. That is just not the case. The deliberate omission of translations serves to highlight this reality: texts are not 'democratic' or 'universally homogenous'. The reader's interpretation is deeply influenced by their own 'baggage' or personal context. An explanation of any new literary modes I use would undermine this point.

Dr. Bea Wohl: I think that there’s another piece which I can articulate for you. One of the themes in your work is the obscurity, inaccessibility, and exclusivity of the language used in academia. The reality of writing a thesis, based on my own experience with my

own thesis, is that English is anything but perfectly straightforward. It deals with something that everyone has experienced during high school. We are already exclusive by writing a PhD thesis. So, one of the things you're doing by playing with language, including different European languages, is not choosing languages known only by small communities. These are languages spoken by vast populations across Europe. You're highlighting the arbitrariness of the limitations of the thesis, suggesting that the thesis is both an exclusive and non-inclusive document and process.

I also agree with you about German. I find German to be a much more dyslexia-friendly language than English. Its rules are much more consistent, the spelling very predictable, and the pronunciation of new words very self-evident. In the English context this is something I'm struggling with at the moment. Managing my dyslexia in German is easier because the rules are grammatically and spelling-wise more consistent. You don't have to remember as many things, and within its structured precision, it gives you much more freedom to be expressive, as you mentioned. English, with its idiosyncrasies, leaves you in a position of never quite knowing whether you're breaking a rule. This is true for non-native speakers and for different kinds of neurodivergent individuals. It's very difficult to say, "Am I doing this right?" and it becomes an exclusive language where there are many ways to do English wrong.

Me: With severe class and race implications, especially in the UK.

Dr. Bea Wohl: There's an English professor in the US who basically has said that he thinks that we shouldn't teach grammar because it's reinforcing a class structure.

Part 3

Dr. Bea Wohl: In our previous discussion, we delved into languages, translation, and the inaccessibility of certain aspects of your project to readers. However, there's an interesting twist – the moments of inaccessibility you encounter as the author. I'm specifically referring to the point where you mention a reference that you've forgotten. This forgotten reference, in a way, becomes akin to the unknown soldier, a symbol for the forgotten and the unknown. It represents a hidden, universal experience within academia. The act of forgetting a reference is something many academics can relate to. But what's intriguing is your choice to make this omission explicit. If this were a common practice, every thesis would have at least one unknown citation. So, why did you decide to raise your hand and admit, "There is a citation, and I've forgotten it"? Why did you feel it was important to include the unknown and the forgotten in your thesis?

Me: For me, it's a matter of intellectual and authorial honesty. This is what happened. I want to show that I've done my best, but given the time and lockdowns that happened, my notebooks were inaccessible to me. These events left and continue to leave traces in me; and in my work. I thought (and maintain) that an honest acknowledgment would be the straightforward thing to do. I thought, and still think, that an honest acknowledgment was the right course of action. I was somewhat surprised that this minor incident became a topic of discussion, but I believe it's healthy for the PhD process to be documented with honesty. Not everything proceeds as planned.

The idea that it's a straightforward, smooth process where everything falls into place is unrealistic. And if unrealistic narratives of the work and life of academia become circulated and reified, it creates barriers and impostor syndrome for people; and this sentiment is not distributed equally amongst all inhabitants of the faculty [...]. For me, this was barely a footnote in my thinking, and I found it interesting that it became a larger item of discussion.

Dr. Bea Wohl: There's indeed a sense of humility in your approach. Academic work often lacks humility. We're often taught to write with authority, which, in essence, can be seen as writing with arrogance. Part of the challenge you pose to the academic world through your work is the introduction of humility, the honesty about intellectual limitations. We're often expected to present ourselves in a manner that may be accurate but not necessarily honest.

Now, I'd like to delve into Hannah Arendt. Can we discuss it from our perspective? The question you wanted me to ask is about ambiguity, a topic we touched on during our earlier discussion on language. However, I think it's worth exploring the specific quote from Hannah Arendt that you reference. I view translation as a form of meaning-making, where reading

something in translation becomes a transcription, an adaptation of ideas. Translation, to me, often feels more like adaptation than a straightforward translation, where ideas are taken and reshaped to fit within a different linguistic framework. This brings us back to your unique position as a European scholar with proficiency in multiple languages.

You operate within an intellectual tradition that might be considered anachronistic, perhaps even rare. I'm reminded of works like T.S. Eliot's "The Waste Land," which weaves between languages, authors like Joseph Conrad, who fluently wrote in multiple languages, and Samuel Beckett, who seamlessly moved between French and English. These are intellectual giants who see their linguistic repertoire as a toolbox and aren't hesitant to say, "This is a poem in French. This is a poem in English. This play should be in German." They challenge boundaries, and it's fascinating to see you position yourself within this tradition. It's especially intriguing given your background as a millennial, someone not of European descent, and your complex relationship with Europe.

Me: If I were to design the first lecture of a hypothetical undergraduate course in STS, the first lesson would be that "There are no innocent translations." Every translation is violent or at least highly political. For me, it is very counterintuitive to expect that everything should be translated nilly-willy, in the knowledge of every translation being derivative and mutating.

I didn't translate some passages where in the manner one would may conventionally expect a translation to reside because I wanted to draw on the entire repertoire of engagements I had access to. These encounters were facilitated through a manifold of things including stemming from different languages and contexts to preface the translation. All this was necessary for me to get to a point of understanding certain passages, and only once I Understood, I was willing, able and consenting to translate. Consequently, sometimes I felt it necessary to not- translate something, sometimes it meant provide preliminary context before translations, and sometimes I used the English translation without acknowledging the original context. Translating philosophical texts, especially from German, is far from straightforward. It feels to me that there's a certain flattening that occurs when translating from German to English, and it's a journey to decide what elements to accept as flattened and which words to employ. At times, I let the reader accompany me on my journey of discovering the quote, exploring its various meanings, until I reach a point where I'm satisfied with my own translation. Only then would I provide my own version to express what I understood by said quote.

Dr. Bea Wohl: Now, could you delve into some of the linguistic devices you employ, such as repetition, rhythm, and the structure of the thesis itself? How do these elements contribute to creating a poetic quality, and how does Chapter 6 fit into the overall narrative?

Me: I had a very clear map, literally a map, of how this text would work. There's a cyclical pattern, very deliberate, curated, and intentional that I rigorously adhered to. From the title to the front matter, and each further section is another circle. I'm repeating the argument, but with every iteration, every passage, I'm taking a larger detour. And through these excursions the knowledge becomes more explicit and accessible. The three interventions echo each other, forming patterns, and the chapters are cyclical, mirroring each other with horizontal and vertical connections; there are diagonal lines and intellectual lineages that render this text serviceable I think; or at least greeting the reader amicably. Sometimes this is very explicit, but sometimes very hidden too. Those codes are invitations to the different readers, not mandates or expectations. My intent was that this structure allows readers to decide consciously which aspects and parts they want to engage with, when, and on what terms. Different codes are pitched at different audiences and communities. These are little windows behind the text, into my thinking at that time; or buttressing intellectual foundations that I wanted to acknowledge, but not centre on at that moment. Not all readers will find all codes; but all readers will find some of them, and maybe choose to use them. And if all they require are the first 5 pages and never engage with anything further, that is legitimate and I have achieved my goal. The same goes for other devices that I employ such as censorship and more. These are essential strategies of self-preservation that are necessary.

Just as in my multilingual approach, my dedication to inclusive writing highlights that engaging with this text should not be perceived as a uniform experience. Throughout these pages, you will encounter subtle references derived from both everyday culture and academia. These implicit references may not be equally accessible to all readers, and I am keenly attuned to this diversity. I offer various avenues for readers to engage with this text with authority, seeking to demystify the concept of 'expertise' and promote inclusivity without assuming or expecting a uniform reading experience.

As for Chapter 6, I didn't want Nigel Thrift's work to be the foundation of my initial review. Placing myself into the context with Thrift required me to explore and experience non-representational theory through my interventions, reviews, papers, art, practice research, and conversation. Only after all that, I used my knowledge to compare my experiences with Thrift's politics, and I want to hold him accountable only once, and then move on.

Dr. Bea Wohl: Why do you believe it was crucial to include this perspective, even though it stemmed from a standpoint of disagreement? In a thesis, there are often limitations, and it's easy to omit certain theorists or intellectual properties. Why did you feel it was necessary to incorporate this, despite the disagreement?

Me: I see it as an honest account of my experience throughout the entire project. It's a truthful representation of what transpired. Also, there's a necessity to have the courage to

stand by my arguments. If my argument is one of inclusivity and it stands in opposition to one of the key originators of non-representational theory, I believe there's a necessity to make my case and explain why I arrived at the conclusion I did and why I disagree and why I think it is imperative to articulate this on the record.

Dr. Bea Wohl: Your work demonstrates the importance of challenging the academic canon and questioning the foundations of our intellectual pursuits. By providing tools for critique and criticism, you're creating space for inclusivity. You've shown how it can be achieved, even within the confines of a thesis, making it possible for individuals with diverse backgrounds, neurodivergent individuals, or those with different intellectual histories to participate in critical discourse.

As we approach the end of our conversation, could you share your thoughts on your choice of referencing style? Often, multidisciplinary scholars find themselves defending conventions from one field in another. Could you elaborate on the multidisciplinary, even post-disciplinary nature of your work and how it relates to your choice of referencing style?

Me: Different for whom? My referencing system may be unexpected in the context of sociology, but it's actually a default citation style at IEEE and many other major venues. It is commonly used within HCI, computing, and related disciplines. My work is funded through the Engineering and Physical Sciences Research Council stream, and I'm institutionally located within the School of Computing and Communications at Lancaster University. I want to assert my work as a valid contribution to those who engage in Digital Innovation. This is also the title of our doctoral program. It's what our certificates say. My faculty expects me to conform to this style. That's why I chose the IEEE referencing style.

However, there's something intriguing and desirable about IEEE. It uses only a number within square brackets for citations, omitting the name of the author of the cited attribution. Readers don't immediately see who made the statement being cited. I think this forces readers to weigh up the arguments on their merits, independent of the institutional weight of who said them. I'd like to think it democratizes knowledge and pushes us to appraise utterances on their merit, not their provenance.

While this might make it more challenging for readers to contextualize statements, it allows them to focus on the text and argument without being influenced by the source's authority. I can see how this may be distracting, but my intention was not to distract but to encourage a focus on the argument itself.

Dr. Bea Wohl: Many conventions are arbitrary and taken for granted, and you've demonstrated this across your thesis. As a cross-disciplinary or post-disciplinary researcher, one

must be willing to collect tools from different disciplines and provoke discussions about the arbitrary nature of rules and conventions in intellectual engagement. These conventions often serve as intellectual protection, canonization, and exclusionary mechanisms. How ideas are presented, not just the ideas themselves, can influence their reception. As readers open your thesis, what do you hope they consider, hold space for, and ultimately take away from it?

Me: I hope readers get whatever they need from it. Ideally, my work doesn't require reading to fulfil its purpose; it should 'function' as intended merely by existing. Anything beyond that is a gift to me. Should that be the case, I will feel like I've achieved something significant. It would give me a feeling of 'having arrived at Home'.

Dr. Bea Wohl: To conclude this interview and to introduce your work further, I want to say two things. First, welcome to the world of academia. Welcome home. Welcome to the doctored community. I also want to say congratulations. Congratulations to anyone who is sort of using this as a precedent to do something new and different in academia. Because I think that's our hope is that this becomes a challenge and a rallying call to see that there are other ways of engaging in intellectual pursuits and your work is an inspiring provoking of what such an endeavour and such a future may look like.

Part I

Laying the ground

Chapter 1

What is the need for this?

My Head of School recommended that I brand this thesis

‘Where the Racism Emerges in the Code’.

It is certainly a powerful title, and indeed, a central motivation for my project is the countering of the emergence of racism in/through code. Yet, I respectfully declined, simply because think my project is *even* bigger than *that*.

1.1 My project

My project is enormous, ambitious and irrevocably committed *to the trouble*. I emphasise synergies across a wide range of marginalised communities and phenomenologically explore their exclusion as well as the consequences of their exclusion in the context of digital innovation. My work is a project of radical inclusion and emancipation and active resistance problematising the academic institution from within. It is a labour of *compassionate resistance* and *radical empathy*. Is that inherently a contradiction? This work will make a case that it is not.

Whilst at first hand my project may appear to be

(1) an exploration of the digital medium and new methods of its investigation, it is just as much

(2) an examination of *the thesis* and overall (textual) academic practise,

there is more to my work than meets the eye.

Staying with the trouble here means a firm commitment to the circumstances I am bound to, via my own biography, as well as the contemporary socio-techno-political context I find myself immersed in. These are entangled and conditional to each other. My biography informs my ability to perceive exclusions, my positionality informs my argument, and my argument is conditional on a certain way of word-smithing and text-crafting, which *bears witness and negotiates* the imbalances that are embedded into the digital-academic medium,

the medium I find myself encased in.

Within this textual form, and *the thesis' life as institutional artefact*, certain ways of knowing, and arguing become privileged/stifled over others; disadvantaging my biography, biographies like mine and other subaltern knowledges's ability to participate in *thesising*.

On one hand is my partial-hermeneutic of exclusion, making me able to notice and utter these observations which could only stem from me and my biography, yet (on the other hand), the very nature of these observations and their fragility - my fragility - make writing this hard in a way like nothing else; hard - and yet unimaginably needed; for my own sake; but also for others - respectively *with others in mind*. My project is unlike reflective biographies, and does not want to be placed into the canon of literature belonging to creative writing. Nothing is inherently wrong with these forms of writing, yet they are not my chosen labels. My intellectual invocation stems from the concept of the *biomythography* [176]; but as a method/means to write oneself into existence and therein - through existence - become a challenge for Research.

My work is political and intended to broaden the envelope of what can pass as academic. *Rigorous thought* is not a luxury, it is an attempt to make sense of one's life, surroundings, experiences and injustices and limitations. In my case, above-all, limitations. Through *the digital, the thesis, academia, and the written medium*. All this, all *these* are entangled and conditional to another, and my thesis is conditional on this ensnarement. Investigating *the-digital-at-large* at an infinitely detailed level is an incommensurately large task, but it is in nothing less than *there* where this work emerges.

My commitment leads me to reject any notion that I ought to tame my aims in order to be neatly archivable and conducive to taxonomy. I reject the notion that I should privilege any aspect of my investigation over another. ('Their' definition of *detail*.) That may be *the working method, precedent and approach pursued by others*, but I will do no such thing (not here). This work is mine, of me, of *the other* and it is needed. My account and my biography standing in for libraries and cities full of uncited, uncitable, forgotten and erased thinkers, stories and lost knowing.

My knowing is one of a holistic and ravaging nature; and I make my point of contribution to STS (Science and Technology Studies) that *such new knowing* demands new ways of writing, narrating, evidence, and reading. *This* will be in service of achieving my aim: to commit to *the big picture* at infinite detail. My rigour does not emerge from isolation, my rigour is *of context*.

The lens of my thesis is my body, heritage, ancestry, *locality*, epigenetics [■], identity and needs.

2021 brings with it an increased attention to *intersectionality* and the need to decolonize. I attend many meetings on those two topics. I make two observations:

(1)

I usually am the only person of colour (PoC) in these (virtual) rooms. I consistently am more knowledgeable (in theory, practise, training and experience) than those who sit next to me, and

I am almost without exception, the only person in the room who does not get paid for their attendance.

I would never dare to deem myself in the matter of Decolonizing *adequately learned* in a manner that I consider *satisfactory*. **I am blatantly aware of many of my shortcomings, and I get nauseous at the thought of all the many things I currently am unable to even sense my own oblivion in.** Yet my past training and experiences *do include*: (a) a substantive training in critical theory, feminist theory, post-colonial theory and decolonizing practises (enough to get me summoned by another University to teach these things and supervise at PG level), (b) a decent amount of ‘hands-on’ activism and *applied decolonizing*, (c) fieldwork "with" indigenous communities, and (d) a colonized heritage in my biography itself.

I *am* more knowledgeable in these matters than those to my *digital* left and right, below, and on top of me, which is not a claim to brilliance on my part, but merely a reflection of an absence of knowledge in these matters on the part of various decision makers and institutions. The thought of all those brilliant and extraordinary PoCs who trained me (and continue to train me to this very day) brings forward in me a bitterness that makes *diplomacy* hard.

Eventually I make time (at the expense of writing this very thesis) and smile, and mince my words and patiently

catalyse what I can achieve on my own in matters of decolonizing

whilst I try to ignore the fact that it takes place on the back of free labour by *this* person of colour.

(Good thing I have a prescription for Ritalin.)

(Good thing I rarely take it,
or
I would get nothing done
that matters.)

My work and my writing will be neither limited by discipline, language, culture, grammar, syntax, orthography, [M]ethod, timeline, convention, medium nor tradition - and instead - all of my life, and deeds, and impulses all are subservient to this (my? our?) overall project. In this sense, this work is without compromise in its approach and mission of negotiating *that balance* of

academic needs with

ethical, moral and political imperatives, provided by the *status quo*.

(**That** is the need for *this*.)

And over the course of my work I will not only stay with the trouble, I become the trouble, and I will show why you must be troubled too.

The outcome of my labour is a *diegetic prototype* [56] for a new way of enlivening the academic medium; a *decolonized and intersectional thesis* as well as a demonstration of *new knowledges* and *new ways of knowing* that can occupy this new space that I have created. *Diegetic* being the design-specific term for 'a type of prototype that makes it possible to think (and discuss) something new which does not yet exist' but in a manner where I do not merely describe *what such a decolonized thesis should look like*; instead I demonstrate it to you *here and now*. (We are already on the way.)

Such writing, discourse and knowledge-encryption is a most overdue deed of restorative justice [189], equity and fairness. This new handwriting of mine prototypes a new way to decolonise, emancipate and re-think academia and its practices. It is catalysed by my biography, heritage, queerness, experiences and sensitivities

in intersectionality

with my (un)medicated madness.

1.2 The big picture

An introduction sets the scene for the reader, warms ~~~~~/them/her/him up to what is about to happen.

~~to me that sounds a lot like "baggage".
Alright then, here shall be my baggage:~~

The remit of ‘the digital’ is limitless. Its discussion and shaping cannot be a privilege to those who call themselves *technologists* or similar. In the same way that capitalism, sexism and racism are pervasive enacted phenomena, *the digital* too, is in no way confined to screens, databases, digital infrastructures or the computing disciplines. Albeit shrinking, yet: - in my experience, it appears that there is still a certain hesitance from non-computing scholars to engage with *digital technologies* and *matters*; especially when compared with other *grand-issues of our time*:

- An absence of any training in economics does not disqualify a scholar from engaging in considerations of capitalism’s impact and entanglement with/on society and the planet.

- An absence of a knowledge of the Feminist literature does not (for better or worse^[a]) disqualify scholars from commenting on issues of sex, sexuality, gender and gender identity; and

- *not-being-a-climatologist* does not in any way release one of the need to be mindful of one’s own research impacts and entanglements with the global climate.

The same goes for *the digital*.

Shaping (and discussing) *the digital* cannot remain a privilege of those who are *literate in computing*; and its research cannot be limited to methods that privilege *detailed close ups* and small and concrete case studies. There is also an urgent need and imperative to approach *the digital* at-large (and to do so right from the outset).

Whilst I firmly value and stress the importance of surgical *thick* [93] ethnographic studies of *the digital*

(such as social practises such as technology-mending [198]; technologies and their colonial entanglements with e-waste [270]; the impact of *the digital in a particular way* such as carbon footprint [159]; cultural analysis of computer games in the tradition of media studies [321]; the potential to support disabled individuals and communities [317, 271]; discourse analysis of policy underpinning and shaping governance and technology’s governance [208]; the feeling and acts of motherly love and care supported by digital tools [53]; software-production-site ethnographies [7]; or the impact-and-enmeshment of technology and indigenous culture, etc, etc, etc, ...)

^[a]See also Walsh [299]

I am certain that there is also a need for a brave overall approach to the topic; and I will demonstrate how I propose this could be done.

The right of being permitted to ‘speak about the big issues’ is usually reserved for (in)famous and established scholars in the field(s) but I assert that there is also a need (and right) for such work to hail from early-career-scholars. Just as large-scale projects involving *digital artefacts* (which concern us all) are ‘dodgy’ when deployed “top-down” [6, 71], “big philosophical thinking” too, is a democratic right and must be permitted to sprout and blossom “bottom up”.

Nothing-is-non-digital.

We are *of/in/through/via/with* the digital. My exploration of *the digital-at-large* is therefore nothing less than equally-so an exploration of the *digitised human condition*; and my madness and the wisdom of Audrey Lorde make me brave enough to pursue this in this manner.

“When I dare to be powerful, to use my strength in the service of my vision...
It becomes less and less important whether I am afraid.”

Audrey Lorde [177]

Dear prospective decoloniser,

A software architect or programmer looking at my work to find aid in learning about enacted technological racism hopefully will find my work *instructive*, yet, I make no promise of *instructions*. That is a type of labour I did not do for you. That is not the result of a *lack of want, laziness or malice* or a *sense of superiority on my part* or an attempt *to be original for originality’s sake*. It is because I cannot offer you an instruction. Looking back on my thesis - I regret to conclude - there can’t be one.

Solutionism is very much at heart of the problem.

Colonialism (and exclusion) are not an abstract-evil force that can be countered, it is continuously instantiated and emergent from ubiquitous, mundane and everyday practices. Much of racism is abstract, ephemeral and enacted; and it is in you and me.

Exclusions’ insidiousness is that these practises are interwoven into our every life, into our foundations of language and thinking, our buildings, roads, architectures, train tracks, movements, software(s), rivers, bodies, climate, statues, schools, names, hospitals, writings, tables in *all* and in every way we [*be*] (sic).

As such, I cannot offer solutions for you to do better (I can barely offer these for myself). I cannot (and will not) offer you this service.

Your decolonizing begins with *you*.

I cannot even make an *objective* argument for decolonizing; as *the premise of argument* and *the premise-promise of reason* is colonial, and more a toxic life-draining distraction from the realpolitisch matter-at-cause.

[Slower. Why? What makes you say this, can you back this up? You need to explain this in more depth to the reader.]

There is indeed a wealth of research documenting the benefits of decolonizing and listing the advantages of inclusiveness from a business/strategic vantage point [327, 150, 141] but I want to stand away from any project of diversification that is guided by motivations of profit, commercialisation, productivity or return-on-investment. This kind of premise and argument excited me briefly in the past, but the price for *that kind of integration* is *at best* assimilation at the risk of a grimace-like caricaturing of oneself (cf. also [80]).

My True decolonizing must foremost centre on the needs of colonized and marginalized communities. Must take place for them and on their terms. And whilst *in practice* the support of *centred voices*^[b] is (for better or worse) a non-negotiable prerequisite for success, my project falls into a different tradition: an unapologetic one; a proud and colourful assertive resilience. An act of self-love and self care.

This work is not a service.

It is a document(ation) of thinking, of being, a demonstration of being-as/in-resistance. The work documented in this thesis is a longstanding project of *learning to see*. Learning to write and an ‘un-learning’ [100, 158] the temptation to surrender, to comply and be dociled,

to self-docile.

1.3 Meeting the text *half-way*

This work is anything but *docile*. Over the course of these next chapters, I will take you by the hand and slowly guide you through a thick underwater-forest of ideas. My work is dense, untamed and full of life; *of life* and life-affirming.

It is distracted curious work,
impulsive creative work,
forgetful dynamic and engaged work,

^[b]Read: voices who get to speak from the centre and not *the peripheries*.

All I will preempt at this stage is NRT's explicit invocation of novel forms of writing that square this circle of *representing without constricting*, and *putting words down on paper, but in a fashion that leaves them mobile*. This thesis is not docile, this work is not a service, and this text - whilst designated finalised - is anything but *finished*. Instead these words remain very much mobile-dormant, only to become instantiated in dialogue with you, - the reader. My resort to *the poetic* is not an indulgence - but the only manner in which I am able to pursue this endeavour. This was the case before I read Audre Lorde (et al.)'s work - and since I read it, I am *even more assertive* with my reclamation of *language* in extreme circumstances. Poetry offers scope for innovation and new "different way[s] of writing"; or alternative narrative genres such as design-fiction (e.g. Thomas et al. [272], which I co-authored) or Kathleen Stewart's incredible work-and-play with *topological narratives* - catalysed through the emergence of the colour *Red* - throughout time, space and biographies [260].

In both texts stories become re-threaded through the lens of an unexpected golden thread through which the world is made sense of. New unbridled vantage points, emancipated narratives, new networks of connections and new ways of being rigorous, engaged and *of context* rather than *of(f) topic*.

Works like these reveal social relationships existing between humans and humans and their companion objects; their inter/intra/wovenness [20]. Such an alternative perspectives enable *new ways of telling* that facilitate subaltern stories and makes them *tellable* (respectively told).

Looking back at my years of work, I finally realise what the golden thread of my vastly different interventions was. My work was is firmly committed, but to what or who(m)?

They were of *me*.

I am my own method, my body is my lens, my perspective is my topology and context is my rigour. And whilst *bodies*, *context(s)*, people, and *that which is infinitely large* is hard to write, - I will nonetheless endeavour to write about nothing less.

This is a new way of writing, a claim to ownership of text by *those kinds of knowing* that are usually not considered *writable*, worthy of record, sufficiently rigorous (or rigorous *in the right way*). This discrimination ends now; this work will be a precedent. It is *our* claim to a doctoral text.

This thesis is calling on the faculty's bluff promises: This thesis does all the things a thesis ought to do, but does them so much differently. My work is a claim and assertion of a right to be written. "Other creatures do it differently, but verbal intercourse has always been our human way, and our entitlement." [145, p.ix]. I entitle myself to this new writing; as a human and not an other-creature. "Unruly" knowledge [33, 286] *is still knowledge*,

and as such it is entitled to be written
and recognised
and read.

I'm all in.

1.4 How I meet the Lancaster MARP PhD criteria:

MARP: Manual of Academic Regulations and Procedures

A successful candidate for the degree of PhD should be able to demonstrate:

(a) an ability to conceptualise, design and implement a major project for the generation of significant new knowledge, applications and/or understanding, using appropriate concepts and methods, where necessary adapting these to meet unforeseen issues;

I claim that my work has produced a significant amount of new knowledge(s) attested through:

- the production of conference contributions,
- published artwork(s),
- published peer-reviewed papers,
- the contents of the thesis and
- the embodied and diegetic knowledge that is woven into the construction/mechanics/form of my thesis-artefact.

(b) a systematic acquisition of, and insight into, a substantial body of knowledge including the primary literature in their particular area of interest;

- I systematically engage with primary literatures from (above all) the fields of critical theory, STS, ethnography and philosophy; as well as the body of literature of HCI.
- I demonstrate my insights into these disciplines by engaging these writings with issues in/of computing and its disciplinary-institutional practises of the interconnections of *digital innovation* and its embedded knowledge-power(s).
- I demonstrate my insights into these literatures by mobilising philosophical concepts and debates and issues across the disciplinary context into the realm of digital innovation and apply them to my research in computing.
- I am firmly familiar with the literatures above to successfully make use of/for them to engage/inform with/against debates in/on computing and *digital innovation*.

- In particular I am fluent in the philosophical literature on non-representational-theory as conceptualized by Thrift and advanced by Vannini and his collaborators.

(c) an ability to relate theory and concepts to evidence in a systematic way and to draw appropriate conclusions based on the evidence;

- I demonstrate a command of the STS literature and its debates and concepts and systematically engage in STS-related debates throughout the entity of my work; from title all the way into the bibliography (see the acknowledgement section of [44]).
- I am convinced that I have not only made convincing and appropriate conclusions from my investigation, but also act upon them which I demonstrate in the materiality/construction/architecture of the thesis-object itself.
- I am convinced that I make a strong case in support of my central hypothesis being that *non-representational theory* makes a powerful addition to *digital innovation* in particular with regards to its potential to make *the digital* a more inclusive space to marginalized communities.

(d) critical investigation of their research topic resulting in the creation and interpretation of knowledge which extends the forefront of their discipline through original research;

- The work that has emerged as part of this PhD research project, respectively the projects that buttress this thesis has also been published in academic circles and peer-reviewed journals and conferences; and whilst they are not *the same*, they are *of the same*; they are of equal quality and rigour. As such I am convinced that I have evidence for my claim that *created knowledge which extends the forefront of my discipline*.
- Therefore I think my publication list and conference contributions are indicative/testament to the originality and pioneering nature of my work.
- Whilst my publications are mainly limited to the discipline of HCI, my thesis research offers deeply original new connections and new insights relevant to discussions and debates within (and beyond) STS.
- These ideas, sanctioned by my peers have been included and consolidated into this thesis.

(e) a detailed understanding of, and ability to use, applicable techniques for research and advanced inquiry in their field;

- I make a case that my understanding of STS's reasoning and writing techniques and
- my command (and innovation) in terms of STS's methodological remit has been demonstrated as part of this thesis.
- I refer to *the practice of writing* and approaches to *knowledge encryption* as core-technique in STS, sociology and ethnography which I have innovated in my work.

(f) that they can make informed judgements on complex issues in their field, often in the absence of complete data;

- Given the large scale of my project *an absence of complete data* was inevitable. *The digital* is inevitably a complex issue in its own right. I maintain that this thesis nonetheless can sustain the claim to have successfully made *informed judgements*.

(g) that the research is of publishable quality and is of a standard which satisfies peer review;

- I have a number of peer-reviewed publications and thus consider this criterion met.
- In exchanges with editors of journals in the context of conferences (both, online and offline) have been approached by various boards with expressions of interest to publish my work; particularly in the context of exploring new ways of the academic form.

(h) that they are competent as an independent researcher in their discipline and capable of continuing to undertake research at an advanced level, contributing substantially to the development of new techniques, ideas or approaches;

- I believe that I make a case that I am a competent researcher in my discipline STS as well as in HCI alike. As stated above my work has been accepted by the main research outlets and I continue to be an active member of the active STS, HCI, mobilities and *Creative Computing* domain.
- I believe that I am offering substantially original techniques of writing and in ethnography. My work fills the important gap between STS's demands for inclusive forms of writing, the appreciation of bodily wisdom in the academic context and inclusive epistemologies centering on other-than-dominant engagements with the world; be they queer, non-western, non-able, non-linear, more-than-rational, - and *more*.
- I furthermore produce innovation of methodological kind (in STS and HCI alike) and,

- I offer a broad range of new ideas, approaches and arguments relevant to my target-discipline(s).

(i) an understanding of the place of the research in the wider context;

- I make a case that I understand the importance of my work in the wider context: be this a context of political nature, institutional nature, disciplinary nature, personal-biographical nature, departmental nature or activist nature.
- My work identifies gaps in the STS literature and the literature of HCI, and fills them.

(j) an ability to recognise the limitations of the research undertaken and to be able to suggest ways of overcoming these in future research;

- I (as I also write in my introduction) firmly make a case that this work is not *directly-instructive* but *pedagogical*.
- I firmly assert that I am making a case for the inclusion of *NRT* as method and that it can offer a means to emancipate HCI research and make it more inclusive, as well as empower non-technology-literate STS scholars to engage with technology-at-large through creative non-representational bodily methodologies.
- I am very obvious about the context-bound nature of my work and that my research cannot be *mobilised directly* but must be appropriated to any following reader's context, aims and biography.

(k) an ability to write clearly and effectively and to meet approved criteria for formal presentation of a written thesis;

- I have used the official Lancaster Doctoral Thesis template and therein my work is written in line with the BSI *British Standard 4821 1990* REF on the *Presentation of theses and dissertations* and complies with it wherever possible and conducive to argument.
- I make a case that I wrote as clearly as I am able to; adequate and in constructive frictions with the conventions and traditions of my target-discipline (STS) and I maintain that any remaining ambiguities in the text are not the result of an absence of clarity-of-thought but a requirement to achieve objective (e): i.e. my innovation in the field of ethnographic and STS writing and scholarship.

(l) the qualities and transferable skills necessary for employment requiring personal responsibility and autonomous initiative in complex and often unpredictable situations;

- I believe that any research conducted over the course of 2020 and onward is testament to any researcher's talent and skill to act in a matter that demonstrates "personal responsibility and autonomous initiative in complex and [...] unpredictable situations".
- Given that I have been hired and recruited several times during my PhD candidacy I consider myself *employable* in a scholarly function as a direct result of my/this research; my employment is a direct consequence of the work I did as part of this PhD and my creative-didactic practise that is heavily informed by (as well as the outcome of) the research in this monograph.
- Since September 2021 my *associate lecturer* position was expanded to a full lecturer post at the Creative Computing Institute at the University of the Arts, London.

(m) the ability to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences

- I have several conference contributions which are testament to my ability to communicate my ideas to an audience of peers, as well as outreach activity (such as globally acclaimed podcast appearances) where I talk about issues and matters related to this thesis in a clear and effective way. A full list of these engagements is attached in the annex section of this thesis.
- My thesis is written for a specialist audience (STS audience) and those committed to the non-representational literature;
- yet my work - as I make clear in this opening chapter - also has a firm more-than-academic and more-than-STS dimension. This includes code-scape architects, novice writers, indigenous and colonized readers, queer audiences, scholars of media studies, artists, poets and many others; many others who are not STSers *per se* but nonetheless interested or sensitive to the issues, politics or methods I use to *make my case for an inclusive mode of writing-coding, catalysed through the body in matters of the digital*.
- Furthermore I will take the occasion of my viva to demonstrate my ability to communicate my thinking, reasoning and writing in a manner appropriate for a specialist audience of peers.

1.5 Conclusion

This thesis is indeed an unapologetic, intersectional work of self-advocacy. A self-advocacy, from a place of power. My Head of School recommended that I brand this thesis

Where the Racism Emerges in the Code.

It is certainly a powerful title, but - this thesis is

*so
much
more
than
that.*

Chapter 2

What else is out there

[R]eviews of research are a form of research.

Gough et al. [97, p.2]

STS is dedicated to the understanding of *power* and *knowledge* and *their interplay*. It is my understanding of the discipline that the unsettling of mythologies and the laying-bare of subconscious (or even hidden) processes during knowledge production is an undeniably political act. STS thus is a practice of "writing better stories" - to the benefit of those who are featured in these stories, or those who want to understand the events or people being featured.

"*Who is missing? Whose stories are missing?*" has been my faithful companion-query, and it is usually my first approach in any STS endeavour. STS to me is a playful suspicion towards the *status quo* in a way that seeks to be un-faithful to narratives of certainty; a thinking that relishes in *context* and the subjectivity of the subaltern.

Albeit the knowledge produced by STS can be weaponized to further subvert subaltern groups, or strengthen myths that benefit institutions and groups with power - *my* encounters with STS paint a picture of an emancipatory, feminist, postcolonial, egalitarian and *inclusive* agenda. It is this conception of my discipline and my emancipatory agenda that has guided me through this literature review.

2.1 Rationale, Type, boundaries and scope of the Literature review

My reading is (and always was) led by my creative interventions, which necessitated an opportunistic approach to reading. This strength of practice-led research has however made a

retrospective recounting of my encountered literatures a difficult and at times intimidating task. I have been accompanied by literatures from a wide range of disciplines, methods and backgrounds throughout the PhD, eventually focusing on STS as the discipline to write for (and from) at a later stage in the process.

The issues my promiscuous reading habits have caused when attempting to construct this literature review were substantial. “*It is always a tricky balance to strike, between specificity and generality,*” my supervisors have told me.

2.1.1 Narrative and structured literature reviews

Pickering and Byrne [222] identify two types of literature reviews conducted in early career PhD work. On one hand is the common ‘narrative’ synthesis, whereas on the other hand they identify reviews that follow a much more systematic approach. Reviews of the narrative type are usually characterised by being tailored for an audience that is familiar with the thesis’s knowledge domain, and are often less structured but emphasising a flowing development and narrative progression in the text. Such narrative reviews excel in a number of criteria that have been deemed desirable by thesis examiners as per a study by Mullins and Kiley [205]: Narrative reviews are particularly good at *telling a story that “takes you on a journey”* [p.379] and thus demonstrates *the student’s communicative prowess* by constructing an independent and original narrative that is nonetheless “*without speculation*” [ibid.].^[a] However, a key problem with narrative literature reviews is that in order to authoritatively claim that one’s included texts comprehensively mirror *the field*, trust in the author is required. Such trust is usually only admitted to those who possess a track record of publications or esteem within the discipline. Whilst this *trust* ought to be a quality that is emerging from the text itself, not every writing style or type of argumentation is permissible by any author: *what* is said and *how* it is said ^[b] is (partially) depending on who says it. Evidently, such a position of *trust and faith into the author* cannot be taken for granted in early career researchers, such as those at the PhD stage. Further issues identified with such reviews (such as difficulties to publish such reviews prior to thesis submission etc.) shall be excluded here (see Pickering and Byrne [222] for a fuller discussion). Hence emerges the conundrum of how a novice writer can then attain a state of trustworthiness without a history of pedigree publications. In response to this paradox, and in an effort to empower *the student* Pickering and Byrne [222] propose a more systematic approach to literature reviews mimicking some practices from *systematic literature review* studies.

^[a]Italics added to stress the four key advantages of narrative literature reviews according to [205].

^[b]Read: “How *it* is allowed to be said”

By *systematic literature review* I am referring to a distinct and specific research practice that systematically reviews a defined domain of published research in order to disprove a predetermined hypothesis or gather evidence in support of it. Such systematic approaches to literature are appreciated as their own method of knowledge production in fields such as environmental science or other empirical natural-scientific disciplines and beyond (see Haddaway et al. [107] for a discussion of the methodology and Whaley et al. [307, 306] or Wolffe et al. [315] for further discussions and critiques of the method in environmental health research).

Replacing the *narrative approach* for a *structured approach* when pooling together the texts from which a literature review is constructed is meant to strengthen the author's position by suggesting *re-productibility* and *transparency*; hence fending off concerns of cherry-picking the included articles. Furthermore, the systematic approach can broaden methodologies included, put forward unfamiliar authors, include less-known institutions and thereby "*highlight the diversity and spread of existing research*" [222, p.545]. Such a methodological and systematic approach to engaging with the literature is intended to imbue the reviews with a higher degree of credence and robustness and thus *defensibility*^[c].

Pickering and Byrne [222] propose that through a thorough engagement with the literature and iterative experimentation with academic search engines (e.g. Web of Knowledge, GoogleScholar, one's local library resources database (OneSearch), etc.) the candidate establishes firm boundaries to the literature search - i.e. establishes a firm (defined) *knowledge domain*.

This step establishes a literature domain that is less dependent on the candidate's imaginary of the discipline but rather a dialectic of a) the candidate and b) the labels put forward by peers (such as other authors, editors, journals) and c) search engine configuration. By replacing *the sole author* as elicitor of the literature with such a '*dialectic system*'^[d] the described method is deemed sufficiently robust as to be an accepted means of research in its own right in a number of disciplines. It becomes clear that methodological strategies to my literature review entail not only scholarly considerations but also performative political ones.

Consequentially, my review practice is one that seeks to combine and put forward a mixed-method approach that draws on the strengths of the systematic *and* narrative tradition of literature reviews. The aim of my review thus is to condense and scrutinise the literature in my chosen domain [30], as well as demonstrate my ability to do so. I am furthermore placing my work into the historical context of the discipline and literature, i.e. make explicit historical links to the debates which have informed me. The narrow and firm boundary of

^[c]The ability to withstand external scrutiny.

^[d]Term proposed by me: I am referring to the iterative interplay of author, keywords and descriptors used by knowledge brokers and authors as well as the configuration of the search engine/tool used by the author.

my literature domain must be understood as juxtaposing the wide range of literatures that have shaped my work. **Their discussion will take place in their respective chapters where appropriate as to not to unnecessarily undermine the firm scope of *this* review chapter.**

My curated account of the domain is intended to familiarise the reader with this particular review method and reading method and be an example of a (re)interpretation of *what a literature review does*, what a literature review *can do*, and how it may *function* in STS, and act as a political artefact in a thesis.

Literature domain As a result of the diverse set of texts that the domain-approach has put forward, this review is concerned above all with how the different articles relate to my own work, and how I make sense of them. I am therefore employing a hermeneutic of appropriation that serves to scope and show how the extracted literature relates to my own work on a practical and/or theoretical level; how I interpret contemporary debates and understand their historical origins and how they relate to me today. Finally, Mullins and Kiley [205] suggests that the literature review, in the context of a doctoral thesis is often interpreted by examiners as indicative of the quality of the overall work. With this in mind, having laid bare my review rationale, reading method, interpretation of STS, review methodology and some of the politics that have informed my writing: the next passage defines the boundaries of my literature domain.

Boundaries/criteria of the systematic literature review:

- The work must be published since 2005^[e],
- in a peer-reviewed STS journal ^[f]
- and contain the terms: digital AND phenomenology.

Why *Phenomenology*? Phenomenology is the original progenitor of much of my work and thinking. Being based in a research centre that is dominated by computational, empirical and quantified methodologies, I wanted to produce a contribution to the scholarship of *computation* that draws on the wide and rich theorising that celebrates post-quantitative, more-than-rational and *differently-empirical* ways of conducting research. Phenomenology itself, was not the purpose of my research, but it was its foundation, its origin and starting ground. From this solid grounding, I began my own exploration.

^[e]The threshold once a sufficiently large yield (YY) was reached. Gunkel [104] was 2003 and yet included.

^[f]The list of journals has been cumulatively gathered from STS resources that have published such lists: STS departments, STS textbooks, bibliographies of STS texts that I have encountered, as well as consultation with past lecturers, current and past supervisors, colleagues and from personal experience and memory

For all intents and purposes of this thesis, I do not want to consider *phenomenology* a single coherent body of literature which I engaged with, but instead I deem it an umbrella-term for an overall epistemic approach, and therein a methodology-in-itself. Phenomenology enabled me to place my work at the intersection of embodiment and computation, geography and art, and critical feminist writing and human-computer interaction. This review then is my attempt to survey how phenomenology is used *to date* in the context of *STS* and *critical digital studies*. Phenomenology as it pertains to this chapter is a cipher and a framework that allows me to assert my use of *feminist and embodied methodologies* as *valid* for the study of computing.

Finding myself based within a Faculty of Science and Engineering, my desire to challenge conventional forms or rigour was a bold endeavour that has, on more than one occasion, caused offence. Backed through the powerful and seminal framework of *phenomenology* however, I was able to assert my work, and *from there* begin to take it *further*.

In commitment to phenomenological methods of working, I do not want to make attempts to *define* the digital and collect studies on it that meet my preconceived notions. Instead I want to *let the digital emerge* through a narrow methodological construct. The harvest from this survey method then *through me and through my reading* then *phenomenologically produce a new, situated body knowledge* that produces the digital *anew*.

The list of journals from which the articles were gathered:

- Osiris,
- Journal of Responsible Innovation,
- Science and Technology Studies,
- History and Technology,
- ISIS,
- British Journal of Philosophy of Science,
- Science Technology and Human Values,
- Metascience,
- Journal for the General Philosophy of Science,
- Configurations,
- East Asian Journal of Science,

- Technology and Society,
- Bull of Science and Technology,
- Science and Society (a IEEE^[g] publication).

Yield The search Yielded +40 papers, book, reviews, erroneous hits, and articles published. Book reviews and erroneous hits were discarded by me, as well as a small subset of papers that were part of the literature on formal/symbolic logic in the analytic-computational tradition. These results were excluded from this literature review.

The political limitations of this curation will be further addressed in the conclusion of this chapter.

Summary and outline of the review

I have grouped the harvested papers into several domains according to their methodological approach, degree of theoretical engagement and rhetorical/argumentation style. My main curatorial/cartographic agenda for my structure was a more or less equally distributed amount of papers in each section whilst giving each idea sufficient space to develop, with preferential treatment to those texts that are particularly conducive to my later argument by a) foreshadowing some of my own ideas or b) making a case why some approaches, potentially relevant to my own thesis, may be excluded in my own work.

The overall progression of the review commences with papers resembling a case-study format, going from 'more hands-on' material-semiotic methodologies, to increasingly more abstract and philosophically weighted case studies. The following passage is dedicated to papers that are foremost concerned with epistemological and ontological considerations, followed by papers that engage with Heidegger and/or other phenomenological key texts. A special section has been given to "code as an artefact" as the literature lent itself to this sub-category. The last passage is concerned with issues of *performance* of person-hood and digital artefacts and some final remarks on the role of *the body* and embodiment as contemporary research tools/methods. The review will be closed off by a re-capitulation of some of the explicit appellative messages I have encountered in the domain. These lessons will be explicitly drawn out as I relate and engage with many of these points in the course of the body of this thesis.

In order to make the links evident to the reader and to increase accessibility, I have used a **bold** style for the key take-on-board messages from each respective article. As the papers and articles cover a wide range of topics, methodologies, types of arguments, positionalities

^[g]Institute of Electrical and Electronics Engineers

and literary tools, the bolding of key points is aimed to ease reading and signpost what I draw out to be the key relationship of these literatures with my work.

2.2 Case-study led research in digital STS

Material-semiotic thinking in STS has a long tradition - and the method runs through much of its literature. By *material-semiotic* I mean analytical reporting on artefacts in the sense of ‘where do they come from?’, ‘who can/gets to use them?’, ‘who are they made by?’, ‘who paid/pays for them?’, ‘what are we told they *do*?’ and ‘is this so?’. These questions undermine *mythologies* [21] we are told/we believe/we share about objects and *things* and develop a more critical and nuanced perspective on our surroundings.

Material-semiotic looking at objects, is a strategy which can tell us about (our) culture, ideas we hold, and fundamentally our-selves. Research that I consider to follow in this tradition has formed cluster 1.

2.2.1 Cluster I: Case studies with a material-semiotic emphasis

Petersson [221]’s work from 2011 is a cross case-study investigation of several different Swedish Telemedicine initiatives, and draws in-depth on the classic study by de Laet and Mol [69] and their description of the concept of ‘fluidity’ that emerged out of their well-known study of the *Zimbabwe Bush Pump ‘Type B’*. *Fluidity*, in Petersson’s reading, is an affordance that describes interventions as being amorphous and dynamic socio-material assemblages. This means that material interventions (such as the Bush Pump) not only depend on a flexible social setting to function, but fluidity also seeps into the physical properties of the pump according to social needs and environmental parameters/constraints. The *Zimbabwe Bushpump Type ‘B’* was enacted/maintained/needed in different contexts through different social settings; but also shaped by availability of resources (incl. labour or materials), and wants by the users.

Whilst previous large scale deployment of tools (such as the Bush Pump, or telemedicine projects) have described the importance of scope for local structures to take over and ingest new tools, a certain lack of rigidity can also hinder adoption. The Bush Pump can and could be many things, but there are certain things it always was, and certain (desired) qualities transcended situated digestion. Whilst *fluid* and *flexible*, the Bush Pump was also something *certain* and *specific*: It was *flexible* but not *shapeless*, it was *accommodating* but not *hollow*.

Petersson’s lesson for the study of *Telemedicine* was that for highly regulated and policy-centred interventions, ‘fixed affordances’ are a key property that deserve as much study as the ethnographic unravelling of fluidity. Both ‘fluid’ as well as ‘fixed’

structures are needed to successfully bring interventions into being on larger scales. In Petersson's fieldwork, *fluidity* was interpreted as a source of uncertainty, un-police-ability and a hurdle to re-application and further deployment. Petersson successfully scopes de Leat and Mol's classic study [69] for intellectual metaphors and analogies which then enriched Peterson's analysis of his own case study and research at hand.

Arntfield [15] conducts a multiple-case-study paper and takes us through several digitally-embedded events/practises from the past and uses them as a provocation to find a way to address a number of profoundly different events and objects, (re)assembled through a single lens. Their paper proposes that the *Aristotelian aesthetic of metaphysics* can offer a fertile framework through which researchers can pool very diverse phenomena together. **Arntfield frames his objects of study - as little as they may seem to have in common at first glance- into a unified thread. The ability to engage in a convincing relationship-building between these different artefacts and phenomena is the central value of Arntfield's work. These instances range from the death of an erotic webcam performer on camera through auto-asphyxiation, "playboy bunnies", "a brief history of masculinity" to a comparison of the Motorola SLIVR and RAZR handset.** The catalysing framework to achieve this is his provocative use of the notion of *visual spectacle* and the philosophy of *aesthetics*. Through this frame these profoundly uneven events become un-settled and transformed to share properties and thus can be brought into conversation with each other.

Arntfield thus conducts an act of methodological translation where distinctly diverse happenstances and objects become dissected through their affordance of 'being a spectacle'. *Spectacles* are inherently visual and thus share this property. Therefore, lead by this visual golden thread, Arntfield demonstrates the power of the *aesthetic framework* in undermining the impressions that these events are too distinct and unrelated to be put into conversation. It *situates* them into a contextual vicinity and enables a thinking that can bring these events and phenomena into relationship. From these new contexts emerges new knowledge. **The pertinence of this metaphysical philosophy is that - as Arntfield demonstrates - its capacity to talk about life and death, emotions, legal frameworks and their situated shortcomings in a situated narrative, in a manner that is unhindered by disciplinary boundaries, time, distance or convention, without abandoning trauma or undermining empathy in favour of rationalistic writing. Arntfield makes a convincing case that any attempts to study the digital rigorously, must be multilayered, networked and embedded within a multitude of narrative strands.**

I want to complement Arntfield [15]'s work with the provocations by Mody [200]. Adding on to Arntfields propositions, [200] stresses that whilst such approaches are fruitful they commit the same prejudice that many social studies are commonly guilty of. **Mody seeks**

to point out the consequences of “oculocentrism” [200, p.175] in STS. A *better* STS practise should seek to expand the toolbox and tradition of STS research by including the subaltern senses - notably here the sense of hearing (see also my work, [44] for an in-depth engagement with subaltern senses as epistemic provocation). *Engaged listening* as a research method, Mody concludes, is not just a change in the sensual apparatus of conducting observations, but it is a cognitive practice that, particularly in settings where screens and *the visual* appear to be vastly domineering, *listening* as research practice is a necessary and fruitful tactic that can yield rich(er) findings.

Another dimension that has a long history of being overlooked is *emotion* as matter of design, and matter in design(ing). Reviewing the growing body of literature that includes emotion as subject of STS investigations on innovation, Steinert and Roeser [259] point out that there seems to exist a lack of an overall taxonomy and theory of emotion in STS. Steinert and Roeser [259] identifies a lack in rigour as certain emotions are consistently overlooked, whilst others seem to be over-documented. **Being more attuned to *emotion* (as medium to design with), as well as *emotion* (as factor affecting decisions when designing) is important for better accounts of ethnographic studies of design and in [D]esign.** Steinert and Roeser propose that focusing more attention on emotion in a more systematic way will not only “improve the overall quality of their accounts, procedures, approaches and methods” [259, p.19], but can be a way to bridge research to include considerations of values in design (cf also [133, 87]).

Concluding Cluster 1 Each of these case studies is an in-depth study of a phenomenon (or several) and lets the *objects*, *items* and *people* narrate their account of the world; as they see it; as they feel it. What these texts have in common is that each one of their authors sought to *let the phenomena speak* as openly as they could; method, writing style, and account were in many ways subservient to the featured actors.

In contrast to that, the next set of papers does many of these things too; but has a more explicit secondary agenda; that is to use these lessons to reflect critically on the toolbox and practices of STS; the discipline these texts are grounded in. It is this critical engagement with STS that I label *reflexive engagements with digital STS*.

2.2.2 Cluster 2: Reflexive engagements with digital STS

The following papers blend a case study approach with their analysis, but also contribute explicitly to epistemic and methodological considerations for research in STS when research is concerned with matters on/in *the digital*. Practices of design and *the digital* are inseparably

conditional to another. The design of cities requires computation, and therein the buttressing tools that make up computers are *designed* (i.e. not *neutral*).

Aside of directly documenting the *stories* the objects, people and phenomena features tell, I identify an equally important, yet more critical layer in these articles. Reflections and lessons for the overall discipline of STS emerging from these studies are given a distinct voice. I therefore classify them into a separate cluster.

Moore and Karvonen [202] use *[D]econstruction* as rigorous tool to critique digital design practices through the means of STS. Though interrogations of the meaning of ‘sustainable design’ as a practice, they conduct two separate-yet-interwoven deconstructions. In the first movement, Moore and Karvonen deconstruct some of the hidden epistemological baggage that *designed* interventions and objects embody implicitly.

The paper entangles the discipline of sustainable architecture/design and the tools it uses, as well as the physical parts that make up these tools. By closing this circle, they make a powerful case that epistemological biases and values are iteratively interjected and mutually reinforced at every stage. In their attempt to deconstruct and articulate these buttressing values, the authors build a case that the discipline in question, its tools and the dominant values are fundamentally conditional to each other. Given the objective of *sustainable architecture* to produce new designs according to enacted values and definitions of sustainability, the unpacking of such buttressing values is revelatory.

Such deconstructions and making-visible of materialised power structures and hidden politics in designed objects/systems are important and make much of the ‘meat and potatoes’ of STS research to date. Moore and Karvonen begin their publication in a similar vein, but then take this thinking and turn it towards the academic practise of design *per se*. Using the practise of *designing* as object of investigation, they explicitly root *designing* in an embedded cultural practice that is embedded in shared assumptions, a common history and a political setting and narrative from which *design* comes and what *[D]esign* is, what it can be, and how it is done.

Appraising digital Design as an academic and culturally constructed practice (in the same way that the Bush Pump is a culturally embedded practice with politics and history [69]) reveals epistemological assumptions woven into Design (as disciplinary practice) and how this baggage leaks into artefacts that are designed with the means of Design. Through their definition of *Design* being the “materialisation and assembly of [a] previously known truth” [p.30], objects and artefacts designed *to be sustainable* embody values, narratives, epistemology and assumptions held by ‘authors’ and ‘parent disciplines’ (i.e. *sustainable design*).

By asking what is considered to be the toolbox of *Design* (and why and how) the authors explore what design *does*; what design *is*; and what the buttressing implicit epistemological dispositions are, when engaging in *Design*. The sub-discipline of *sustainable design* has been a particularly fruitful tool as object of study. The prefix *sustainable* explicitly put this form of design practise into a firm political setting with respect to other designs that do not explicitly claim sustainability.

Yansen and Zukerfeld [322] deconstruct a different discipline in their article; the authors review the construction of ICT (Information and Communication Technology) and computer science as a subject to study and career opportunity. Therein they draw attention on aspects of gender and exclusion. The paper assesses the construction of technology and

- how ICT is presented and understood differently according to gender, but also
- how girls and woman are made sense of differently in ‘ICT’ communities at various ages/stages.

Hence the complexity and cyclical dynamism of processes of exclusion are acknowledged: The article dissects how girls and woman are primarily constructed as passive consumers of technology, be this at a young age or in the work force; but also how the construction of technology, computer games, computer science degrees and careers in technology are framed in such a way that they are weighted in favour of men. Through the method of deconstruction, interview and observation, Yansen and Zukerfeld [322] outline the mechanisms of exclusion that deter girls and woman from engaging as active participants with digital technologies.

Munk and Abrahamsson’s [207] work is a reflection on their previous PhD work. Both used digital technology for very different projects and with very different epistemological agendas in their work. Through the use of *metaphor as method* they dissect their own disciplines and past work to understand the epistemic baggage of digital tools in ethnographic research.

Through the vocabulary of warfare and the metaphor of belligerent conflict Munk and Abrahamsson [207] conduct a study on the epistemological baggage of research (doctoral research in particular) as curated and self-affirming constitution of reality. They describe this as *ontological battlefield*, a notion I will address. Discussing the political agency of an author as powerful curator of information and narratives is a well established practice in critical theory and sociology and it long precedes modern STS.^[h] The authors take up and enliven established debates around the power of authorship, knowledge curation

^[h]I am using the publication of the seminal 1977 publication ‘*Science, Technology, and Society: A cross-disciplinary Perspective*’ by Roesing et al. [230] as institutional invocation for STS as we practice it today. This publication would, in later editions become ‘*The STS Handbook*’ series). I am aware that other authors and STS practitioners may disagree with my appraisal.

and *knowledge brokering* (see also Meyer [196]) in the backdrop of digital technologies and computational methods. The tools that facilitate and curate these exchanges must be recognised as a political and reality-performing interventions, adding another layer of transformation to *the mess* that is social research.^[i]

In the face of such a kaleidoscope of agencies and biases in each act of translation/transcription, the pursuit of any singular form of knowledge or truth becomes paradoxical; that is if one wants to acknowledge the limitations that come with ones methods used and associated means of knowledge inscription and mobilisation.

Similar to Moore and Karvonen [202], Munk and Abrahamsson [207] too examine the practices of STS and compare the process of constitution of a computational flood modelling tool with the study of a “mummified Egyptian boy” [p.54]. Both acts constitute and curate realities. These new *realities* then become written up; a step in which much knowledge, context and agendas become concealed. The authors admit that the only way that they were able to justify such acts of ontological violence was the sanctioning of such measures by tradition and custom in Science Studies/STS; not by fidelity to their objects of study (respectively agents and collaborators studied).

Both practices, (1) *the imagination of a study subject in archaeology* (the above mentioned boy) and (2) *the manifold of processes of constructing a digital modelling object for flood management* are relying on the acceptance of a position of authority held by the authors. They were constructed as capable interventionist tacticians who were afforded the descriptor *good* - where ‘good’ refers to capable/talented, but also to an absence of ill-will and maleficent tactics against the subject, stakeholders or the reader.

Confronted with the possibility of an ontological truth ‘out there’ this negotiation of research philosophies and imaginations becomes an act of epistemological guerrilla fight where every study and researcher develops their own toolkit of guerrilla tactics to “navigate [this] ontological battlefield” [207, p.52].

What Munk and Abrahamsson [207] and Moore and Karvonen [202] have in common is that both papers approach an investigation of STS/design and its methods by deconstructing its methodological apparatus: Munk and Abrahamsson [207] did this by exploring the self-understanding the context from which design as a method emerges, and how this history influences the artefacts it produces; Moore and Karvonen [202] acknowledge a type of inevitable epistemological positioning which takes place *prior* to a study and how this influences, shapes and skews accounts; and how this bias can fall between the cracks of customary scholastic write-ups.

^[i] *Mess* obviously being a reference to the seminal work of Law [171]: *After Method: Mess in Social Science Research*.

I understand their work as an exercise in making the *implicit consequences of the disciplinary history and epistemo-ontological footing in social research* explicit; this is, in other words, a critical deconstruction of STS with the theoretical and methodological tools of STS. To this I want to juxtapose the work of Hoffmann and Wittmann [134] with these two papers to add another expression of this ‘*auto-critical*’ research tradition in phenomenological digital STS.

Hoffmann and Wittmann [134] interpret the task of deconstructing the means of STS with its own methods by conducting an ethnographic reflection of customs in science-making. Through reflecting on STS’s strong history of laboratory studies, Hoffmann and Wittmann [134] interrogate the existing narrative of sense-making through the premise of opposing digital to analogue representational customs. In the backdrop of widespread digital technology (i.e. computers, software and screens) as apparatus of scientific/academic sense-making, they ask: how well do studies on *sense-making/* representation/ inscription hold up if a digital-vs-analogue split in apparatus is exploited? How do the narratives of science-making change when the widespread habit of using *pen and paper, field-notebooks*, and ‘scribbles’ are seen as *sovereign and altogether distinct practices*, separate from computer-facilitated research, analysis and *for-publication* textual representation. Hoffmann and Wittmann’s [134] work examines *drawing and writing as research techniques* - i.e. as analytical and cognitive tool and independent forms of research. Interpreted as a kind of apparatus/method for thinking, *drawing and writing* become inscription mechanisms of thoughts. The manual inscribing of written words, drawings, sketches, abstract shapes and forms, and other representations can be appreciated as independent epistemological forms of inquiry and expression. Making notes on paper is a material-somatic and cognitive instance of embodied thinking. In their creation process, ideas become semi-immobilised on a medium that is malleable and responsive to iterative impromptu reviews and dynamic changes in thinking. Pen and paper (or field-books or *post-its*, etc.) are the material-semiotic underpinning of a dialectic heuristic between thoughts, abstraction and material inscription. Pen and paper are not merely representative tools, but cognitive agents of thinking - prior to any digital involvement. Hoffmann and Wittmann [134] observe that their computational analysis is usually only ever a secondary step, only taking place once the first stage (using pen and paper) yielded sufficient promise and potential for digitisation. These material artefacts that bear witness to embodied thinking-in-action however regrettably often become disregarded once digitisation has taken place. For Hoffmann and Wittmann [134] the meeting of pen and paper is the epistemic instance of science-making, shifting

[S]cience^[j] into the realm of manual/artisanal practise, rather than a disembodied abstract, cognitive-computational process.

Concluding Cluster 2 The papers in this section were as much an investigation of their respective item of study as they were an examination of their practises of studying. Their findings were accounts of the stories their objects/phenomena had to tell; as they were a critical observation of their process of eliciting these stories. They did not appraise the epistemology of science-making though an abstract analysis of the methods of science; rather they observed their own science-making and reflected *in situ* and *in vivo* about what the epistemological implications of their decisions, assumptions, practises and histories are/were. Their science-making is a much an analysis of a phenomenon or artefact; as it is an analysis of how this analysis is conducted and what constitutes analysis and representation.

2.2.3 Cluster 3: Onto-epistemological case studies in digital STS

The following two papers are heavily concerned with epistemological, reflexive, methodological arguments for STS work that is concerned with *the digital* or uses computation as methodological tool. This section also includes work that is discussing disciplinary, archaeological and genealogical work. I thereby mean work that examines discourses or framing(s) by academic disciplines, and how deconstructing them can reveal inconsistencies or hidden practises when researching digitally or researching *the digital*.

Medium and onto-epistemological consequences are also the concern of the work by Gunkel [104] who interrogates the ironic paradox of *our* (from the perspective of book-publishing social science researchers in the field of science studies) practise of writing *books* on digital matters. Appreciating the entwinement of discursive medium and content, Gunkel [104] reflects on the the questions that an analogue practise of *writing books in a digital age* demand - especially when seeking to write about any aspect of *the digital*. Their provocative suggestion being that, instead of publishing books on matters of the digital, it may be more apt and fruitful and consistent to program software and interventions that embody and demonstrate knowledge, rather than engage in conventional means of science dissemination. Such a medial shift would entail a dramatic repopulating in those who are in a position to conduct and produce *research* and who can engage with the outputs of such knowledge practises. **Given the commonplace reliance on books in a digital format (i.e. e-books), the affordances, limitations and potentials of bookness is already unstable and transient. Gunkel warns that, whilst on one had such self-referential reflections**

^[j]Capitalisation to convey that I am referring to the overall body of knowledge and knowledge production, not a specific scientific discipline.

are the mark of an self-aware and *ergocritical* STS; yet such considerations are also a risky endeavour, as they run the danger of being endlessly self-referential. This self-referentialism then obfuscates the actual objective of research. The question then becomes how much attention do we pay to the change of the medium of research and is the written medium (books and articles in their physical and/or digital form) not obfuscating or hindering *the matter of investigation* itself? Researching in the digital raises questions as to whether the pursuit of such reflections is a worthwhile paradox, or to what extent such work is little more than a self-indulgent distraction from *the matter of matter*. Markley [186] too, is pushing the boundaries of what it means to publish in an academic setting and makes this case *by argument* in the paper as much as *through demonstration* in the form and style of the publication. **The author undermines the imagined distinction/opposition of ‘theory’ and ‘practice’ and instead publishes an article that contains theoretical arguments it seeks to convey, whilst and puts his claims and conclusions in practise in the text.**

What this means for me, as a scholar of the digital, but also engaging in the crafting of a digital and more-than-digital artefact of my own, is that I cannot only attempt to conduct my research whilst assuming that my medium is onto-epistemologically neutral, quite the opposite. I must instead carefully acknowledge and assert the medium and the tools that buttress my work and inquire the politics of the medium critically whilst simultaneously not losing track of the bigger picture. The study of the digital *digitally* is a paradox and yet, *for me* inevitable, and therein quite frankly a catalyst of creativity and joy.

The article commences with a speculative retelling of the history of the journal the article is published in, as well as the community it stems from and thus also caters to. The text is a provocation that points out the existing and forgotten (or repressed) inconsistencies of STS whilst admitting that such inconsistencies are inevitable. I am putting these two papers in a curated conversation as I read the work by Gunkel [104] as a valid and deeply challenging critique that includes ideas that I have had, but was always unable to put in coherent thought until I encountered the articles in this literature search.

Both works are rigorous critiques that constructively challenge the reader (and implicitly the discipline as a whole) to address the inconsistencies laid out.

The more recent work by Markley [186] (2018), to me, seems like a response to the critiques and challenges laid out by Gunkel [104] (2003) - and an outline on how the aforementioned paradoxes might be resolved. The text subverts what academic publications look like and - whilst not breaking the rules of publication - it subverts the text and pioneers new ways into new territory; yet respecting the discipline of STS. The footnotes partially dwarf the main body of the text; and the academic argument takes place in an interplay of the main body and the subordinate text. The topic of the article is the venue of publication itself

whilst the audience is - if the positionality of the text is taken seriously - long deceased at the moment *when the paper takes place*.^[k] Through the means of science-fiction and looking back on the present from a distant future, Markley [186] interprets STS's inconsistencies as a long-standing subconscious manifestation of a need for post-disciplinarianism as sole means to address the equally post-disciplinary challenges of the 20/21st century.

Both texts in their own right, - and much more so in their interplay which I have catalysed here - have been profoundly fruitful encounters for me. They both in their own right demonstrated what to consider when challenging the boundaries of traditions of writing, made it clear why this is needed and how to constructively deal with paradoxes in a manner that does not lead one to resign in to epistemological nihilism. Their work remains a fruitful resource from which I keep mining knowledge. The texts exemplify how to put very volatile ideas into writing, ideas that I was scared to attempt to put into writing and deemed too entangled to survive written codification successfully. Whilst transgressing textual liminality to such a degree is *per se* not usually included in a literature review, this literary revelation was a key element I have taken on board and that shapes and the whole (subsequent) thesis.

...do we have a phenomenologist on board?

Gunkel [104] puts forward a challenging critique of the sensitivities of STS and its limits in the backdrop of attempting to study any aspect of digital technologies, digital infrastructures or practices in/on the digital. He alludes to a paradox where - *when taking the methods and thinking of STS questions and traditions seriously* - we end up in an infinite loop of self-referentialism. This inevitably puts forward the challenge to practitioners how to bring back momentum into such research whilst not undermining past practises of STS which have shown to be fruitful so far. With reference to this critique I am beginning the following cluster of papers with a *conversation*^[l] in a peer-reviewed venue (rather than a standard journal article). The rest of the review is very explicitly related to phenomenological methods and for ease of reading I have given these papers their own sub-headings: *Phenomenology and Death*, *Phenomenology and Code*, *Phenomenology and Enacting Practices*, and *Phenomenology and McLuhan & Butler*.

^[k]I had no idea that "this was allowed" - also with respect to the timeline of writing/peer-review/publication/reading - and committing to such an experiment in the backdrop of potential non-acceptance by the respective journal. I find this approach distinctly brave and positively convoluted; a deeply *challenging* piece, in the sense of that it *challenges* the reader to push ones craft to new levels - simply by existing.

^[l]A conversation that was conducted, transcribed and published in a peer-reviewed journal.

2.2.4 Phenomenology-centred literatures

Phenomenology and Death

O’Gorman [216] in his writing on Stiegler, proposes the ordering momentum of death as means to interrupt the circle of material-semiotic self-referencing. Stiegler^[m] positions his philosophy in explicit opposition to the tradition of material-semiotic scholarship in the ANT tradition. Therein he explicitly critiques Latour, about whom he says: “*he will not put up with phenomenology, he will not bear transcendental questions*” and “*Latour is allergic to phenomenology*” [216, p.463,464]. Death transects the boundary of material-semiotic reasoning and phenomenological experiential sensitives, and Stiegler explores this further.

Death of/in technology His notion of *technothanatology* dramatically introduces an ordering moment in the mess that unravels when thinking through the digital. Digital technology and its uneasy relationship with *forgetting* is at odds with organic and biological realities of transition, where all human doing is inherently ephemeral and one’s legacy will inevitably fade away. Engaging with digital forgetting as form of desirable and natural decease is bringing back a healthier relationship into the risks and imaginations of *legacy leaving* when navigating online [261].

Dying is more than a material transition, but embodies a series of profound and dramatic embodied events that possess deep political consequences - be this the corporal death of the human body, or the death of online traces. More explicitly: Stiegler rejects efforts to minimise online traces and deems them futile, but rather wants to see a constructive and healthy engagement with *how* our legacies and traces and footprints are managed in the digital, that is more in harmony with the necropolitical reality of the finitude of being which is part of the human condition.

Stiegler demands that STS research in technology must re-centre on methods that go beyond ANT and the material turn, back to Heideggerian-phenomenological approaches that emphasise the embodied experience. The embodied writing tradition enables the politicisation of bodily movement, and the experience of one’s landscape. Death must neither be a metaphor, nor a dread, nor a catalyst, it merely *is*. Where body, embodiment, landscape and writing

^[m]Bernard Stiegler is a notable French philosopher, known for his work on technology and its relationship with society. His centers around the concept of "techno-thanatology" (see *Technics and Time* [261]). He believed that objects or ideas of technology can be produce interesting and generous discourses they equally so have the potential to yield horrible and inhumane results. He explores how technology affects human perceptions of life, death, and memory, positing that technology can both preserve and disrupt cultural practices and existential norms. It is in this shift where the dual nature of technology can become a “pharmalogical” remedy and poison in society.

meet, where mortality gives deeds their meaning, that is the locus at which *the political* takes place.

2.2.5 Cluster 4: digital artefacts, their practises and code as object of study

Phenomenology and Code

A phenomenological approach, where *code* and its impacts are put on an equal epistemological footing as mountains (i.e. physical-environmental phenomena) or material artefacts (perceived as phenomena) can make thinking about code-human relationships easier, can catalyse new way of making sense of human-computing interactions. Appreciating *code* as *something-one-engages-with* fertilises thinking in new ways. Such articles are to be found in this cluster.

Kerr et al. [153] conduct reflections on their ethnographic case studies seeking to understand what the definition, function and role of the body is, when thinking about digital coded artefacts. Drawing on Merleau-Pontau's phenomenology, they conduct an embodied account of the experience of engaging in the practise of *coding*. They employ the concept of *prosthesis* as used by Merleau-Ponty's writing on perception [194] which refers to the idea that the body "is a system which is open on to the world, and correlative with it" [153, p.143]. **Therefore, technology should be understood as an extension of the body and the senses.** Their analogy refers to a blind person and their use of *a stick* as an extenuation of their body and as a sensory tool, rather than an external object outside of their sensory system. The concept of *protesis* (from the Spanish word for *prosthesis*) challenges the bodily boundaries of sensuality and re-imagines (re)presentation of this body. As the body (through *protesis-lead-thinking*) becomes more difficult to define and understand, it also changes the definition of the human sensory apparatus. Hence profound new questions about body representation, sensation, proprioception, and the curation of *being* in online spaces emerge. As part of the human sensory apparatus includes non-organic structures, the curatorial baggage of these technologies needs to be made evident. Their preferred umbrella term for the diverse manifestations of such sensory technologies is 'network'.

The term network as it is used here captures the complex nodes and links that are formed, maintained, and eroded through "advanced," postindustrial technologies like ICTs but also through those technologies that are more commonplace and

mundane [Dourish et al. 2010]^[n], such as the telephone, and second, those traditional technologies they mediate and remediate [...], such as speech and writing.

Kerr et al. [153, p.373]

Kerr et al. [153] engage ideas from a broad range of theorists (amongst others Derrida, Haraway, Foucault, McLuhan, Butler) and - taking on board the lessons learned - add their interpretation of what it means to be networked, constructed, propagated though the digital realm. Though this quasi-archaeological method, they bring forward new approaches when seeking to understand *the networked human condition*; i.e. trying to understand which aspects are emphasised and overshadowed when bodies become networked; when bodies become interpreted though networked senses? “What has been the extent of influence of these visions and imaginations of the human in relation to networks on design and policy making?” [153, p.373].

Darking and Whitley [66]’s work reinterprets what digital artefacts *are* and *can be*, from a phenomenological perspective. Rather than an abstract immaterial object, Darking and Whitley [66] suggest that code is foremost an assemblage of social practices connected through a shared futures-directed potentiality. Attention to code (as an artefact or system) may be crucial to understand digital systems, but simultaneously, by re-thinking code as social assemblage of practises, its politics can be described better. Phenomenological approaches to *code* emphasise its fluidity and relation to imagined futures - not the digital artefact that is produced. **Code is an assemblage of social practices. Interpreted in this manner, code is above all a ‘constitutive entanglement’ of communi-ties of programmers and other people who work dynamically towards a fluid idea that is continuously in flux. The code and its supporting community are mutually enlivening to each other; and both are in an ongoing process of becoming.**

Landström and Whatmore [166] discuss the social practices and types of knowledge that buttress coded objects: in this case, a computational model to aid in flood and inundation management. Their study documented perceptions of powerlessness and gradients in power according to types of knowledge brought to the architect(s) of the computational flood model. Whilst there was much discussion amongst scientific experts, these debates formed barriers that made input from lay experts, local knowledge holders and citizen scientists difficult; and these local experts would become rendered unable to participate (or even assess) the computational model. **A dialectic and iterative approach to elicitation of**

^[n]Given the importance of citations as currency in the academic industry I have amended a reference in the quote as to not amplify the work of certain problematic author(s). Cf. also acknowledgements of Brueggemann et al. [44].

information with all knowledge bearers concerned was proposed: they were called *competency groups*. The objective of these was to reduce an imbalance in power and foster equitable participation across types of knowledge and levels of formal training. In these settings, “a wide range of objects, practices, and relationships constitutive of environmental expertise” [166, p.599] were admitted as equitable factors contributing to the phenomenon of flooding, to revise the position of scientific knowledge. Prior to that, debates amongst scientific experts from different fields overshadowed the discussion and weakened the model and its potential for improvement. Instead “expertise emerged in relationships between modeler(s) and models, between modeler and decision-making actors, and between modellers and local residents; it was not a property of individuals” [166, p.601]. Instead it was a dialectic and iterative exchange, only possible in environments of equality.

The computational model and different epistemologies all encountered another in the design/construction and usage of the flooding model. This digital model at once is a *phenomenon* that grasps a wide range of affordances that originate in instances of *flooding*. The model abstracts affordances and (re)produces new representations of flooding through the future usage of said model. Rendering floods *computable* exposes how digital models encrypt realities into coded artefacts - and in the case of this study, exposes how different forms of *accounting for floods* get treated differently.

Besser [24] in 2017 conducts a review of cultural and artistic imaginations and their corresponding visualisations of the artefacts of code; i.e.: what does it look/feel like *to be networked*; what do we imagine when we imagine to be networked? These *isomorphic imaginations* are characterised by visions of connected worlds that possess global cohesion yet distributed agency. *Being networked* is imbued with metaphors about the brain and the globe - or overlapping globe(s) as distributed pulsating webs through which information circulates. Analogies with the *Deleuzian mind screen* can be identified, a principle where the world is projected into the mind through perception. Besser writes that “the rhetoric of plasticity here serves a similar function as in Deleuze’s dictum that the brain “is” the screen” [p.434].

The isomorphic property thus refers to an increasing resemblance of this imagined network acquiring cerebral and neural affordances; the brain and computers becoming more and more alike and compatible with one another. A key property is the suggestion and discussion of congruence between these different worlds that are layered on top of each other. To discuss this further, see also Ch.4 *walking* where I explore this concept of congruence in the backdrop of my geo-locative mobile-gaming practise.

Practice centred

Phenomenology and Enacting Practices

Whilst a phenomenological strategy enables us to interpret code as a quasi-object or quasi-artefact, other authors have framed *code* as an embodied practice that is *brought into being* through engagement. *Code as phenomenon* and *code as enacted practice* do not stand in opposition to another, but these two approaches demonstrate the versatility in ideas a *phenomenological approach to 'the digital'* can bring forward.

Chun [57] reviews existing accounts to establish topological methods that enable researchers to write about otherwise very distantly related digital configurations in a single context. *The digital* in all its iterations contains a vast range of sociotechnical phenomena (their examples being Japanese Cellphone Novels, Blizzard Entertainment's *World of Warcraft*, digital art and others). Such projects have previously been often gathered in the domain of *New Media Studies*. In an effort to bring these very distant configurations together into conversation, the medial study of digital artefacts of the discipline moved towards increasingly more often emphasising the importance of the source code as primary resource for research. Chun [57]'s interpretation of *new media studies* as a discipline is that it has in practice shifted to *software studies*, i.e.: a "fetishism" [57, p.300] of code. This turning away from context and function of digital artefacts to their computational *mechanics* conceals much context knowledge and mutes research agendas that were once common in previous iterations of *new media studies*. This new paradigm of framing this type of research around code renders these new studies more systematic than previous reviews of digital artefacts, but therewith also less situated.

Chun [57] argues that non-phenomenological research fails to consider *the user(s)* as catalyst for the enlivening of code. Neglecting the user at the expense of code-centred studies exclude instances of human-code misunderstandings and the ongoing dynamic nature of *in situ* code. **A turning towards the experiential nature of code at sites of human-code encounters should become central to future software studies.** Future work must thus include investigations of the instance *where code is brought into perception* - at the boundary of software and user.

Gunnarsdottir [106] conducts a study that explores the *academic pre-publication research-exchange platform* arXiv. The author re-evaluates the role of the academic journal as a means of knowledge distribution within communities in the backdrop of emerging, free, non-peer-reviewed sharing of research through specialised platforms. Through technological progress, increasing unfriendliness of TeX software and an increased desire for accelerated research circulation, Gunnarsdottir [106] analyses the strengths and weaknesses of peer reviewed and

non-peer reviewed article circulation. Through technological development and in response to increasing critiques towards academic publishers, new and intricate social practises have developed that use trust and community and expertise instead of a formal review process to share knowledge, whilst formal publishing avenues are retained for peripheral audiences and to respond to institutional pressures.

Code, cod-ing and its practices are interwoven socio-material assemblages. Code is at once material and materially-sustained, ephemeral and elusive (*virtual*) and equally so *embodied practised* and socially maintained. Code possesses agency, mediates it, as well as it internalises it.

Söderberg [256] studies the construction of ‘the misuser’ in the digital spaces as defined and constructed by law. The overall paper is a critique of commonplace constructivist narratives of STS. Constructivism in this context refers to the underlying key assumption that human-digital systems exist in such a way that they can be defined and identified. The study at hand however suggests that such assumptions exclude or exoticise “*antagonistic relations*” [256, p.151] such as discussed in this paper: illegal file sharing practises.

The study stresses the great potentials of material-semiotic deconstruction as method in technology studies, but their firm fidelity to a tool or a practise can also hinder the recognition of practises that subvert the object in question. In this sense, material-semiotic readings can inadvertently reinforce cultural constructions or artefacts, rather than uncover their underlying myths. Without trying to do away with the advantages that the constructivist STS approach yields, Söderberg [256] seeks to politicise STS research further to foster epistemological frameworks that are more prone to reveal oppressive aspects of technology and their subversion.

Matters of Representation(s)

Phenomenology and McLuhan & Butler

“Heidegger surf-boards along on the electronic wave as triumphantly as Decartes rode the mechanical wave.”

McLuhan [191, p.cccxc]

The work of Walters and Kop [300] is a theoretical synthesis that draws together aspects of Heideggerian philosophy and McLuhan’s key concepts; how - through the toolboxes these theorists have put forwards - personal life, culture and education have become transformed through the digital revolution. **Walters and Kop [300] re-contextualise Heidegger’s *Dasein***

as being equally applicable to *the digital environment*. As much as we are *being-here* and existence is constituted through engagement with *one's environment*, contemporary definitions of this environment must include digital technology. *being-here* takes place in an environment that is substantially constituted through mediated representation. Through this interpretation of what constitutes the *Umwelt* (i.e. *that which surrounds us*) Walters and Kop [300] mobilise Heidegger's theories in a manner that makes them pertinent to digital innovation. The digital environment is fully constituted by representations and it is a fully mediated ecology. From this position the authors draw on the works of Lyotard, Baudrillard, Dreyfus and Spinoza to approach the *mediated Being-here*. Particular attention is given to the case of remote University education. Heidegger's and the author's interpretation of what constitutes University education is one that goes beyond the narrative of mere education and skill development; instead - they argue - it is a fully transformative experience that is acquired through fully engaged embodied and affective engagement, hence, in their opinion, an imperative for human-to-human encounters to achieve this aim of transformative learning and growth. The many layers of abstraction and mediation *in digital and remote learning environments* are a hindrance to the immersion of University education and stifle the dialectic in which *profound learning* happens.

Performance

The work of Baas [18] in the *East Asian Journal of Science, Technology and Society* compares the affordances of digital self-representations and juxtaposes these with the organic and material body-sculpting practices of Indian bodybuilders. Baas ethnographically describes bodybuilders' usage of Instagram as a means to generate social and economic capital, as well as a heterotemporal facilitator to overcome the limitations of the organic body and its periodic transience. The organic body, social capital and Instagram (the digital medium of performance/representation) are curated into obfuscating temporality and fragility of *peak bodily performance*.

Baas' work emphasises the immortal transcendence of online representations which conflict with the transient body configurations of the bodies of bodybuilders. Bodybuilding practises include annual cyclical phases where practitioners shift from competitive *body shapes* to *off season* body configurations. The online profiles function as recruitment tools for future clients, to enable social mobility and achieve individual gratification (amongst others). Echoing some ideas of O'Gorman [216] and *stressing the mortal transience of the body*, Baas [18] scopes the context in which informants use the affordances of social media and their body as corporal sculptable medium to present themselves in certain ways to attract clients or appreciation for their work. **Baas [18] demonstrates in his work how STS's key**

works on the body (i.e., [201]) and other body-sensitive work remain pertinence when researching in/on the digital (see also Kirmayer et al. [155]) and Shilling [249]).

The reflexive work by Halpern [109] uses the autobiography of the former director of the MIT MediaLAB head Norbert Wiener to think about technology and questions on mediation and representation of reality. Particular attention is given to the temporal aspects in representation and computational innovation. User abstractions and feedback happens in real time- thus their interacting is dynamic and make up a system of instant and multi-layered feedback processes; not a linear or straightforward input/output dialectic. Key to the article is the notion that any type of recording is imperatively always an act of representation and thus never less than an act of world-building; or better and infinite iterative world-building and un-building of existing worlds and the re-building of new ones. Digitisation therefore should be understood as a political act of translation and transcription with all the ensuing baggage. Complementing the study by Landström and Whatmore [166] on *flooding*, Halpern also acknowledges the representative-phenomenological politics of digitally created realities. Halpern's methodological pathway to this conclusion however is a fundamentally different one.

Halpern [109] opens up questions in the areas of ontology, epistemology and regarding the nature of *the present* in the context of computation as series of frozen-yet-mobile archival structures. We thus must become encouraged to give more thought to the “ethico-politics of writing” [325, p.147] – including the questions around the *planned death of data*, which Halpern [109] deems a necessity. Particularly the complicated relationship humans have with any aspect of loss requires much further unpacking, particularly given that Halpern believes that *automated information expiry* may be an inevitability. ‘Data-death’ then turns from accidental occurrence to necessity.

This transfer of *loss* into the realm of *that which requires management* entails its own set of difficulties. Such considerations must include lessons from *past mass erasure endeavours*, notably the Holocaust and Auschwitz [109].

Ayers [17] explores the topics of embodiment and representation through a reflection on DNA art; that is commercial visual representation of ones DNA for ornamental purposes. This bio cybernetic reproduction raises questions on the locus of consciousness and the boundaries of the body in techno-computational systems. These new types of portraiture embody a utopian vision that provokes the consultation of the posthumanism literature to contribute to understanding and making sense of this form of representation and *liminality of the body*. Through a reflection, heavily aligned with the work by Katherine Hayles [129], Ayers [17] challenges STS's common postulations about the material body *lingering on* once

the body becomes technologically translated. Ayers [17] wants to do away with such an interpretation of *the body*.

Ayers claims that any notion of *the body* as a useful category to think with is flawed, partially due to its long entanglement with eurocentristic ways of thinking, but also due to its implicit male and able-ist connotations; thus Ayers' *body* stands in conflict with STS's own appulative and feminist posthuman agenda of emancipation. On one hand *the body* is a useful feminist totem through which to articulate/sense/resist oppressive forces, but at its root the privileged position of *the body itself* is a catalyst for oppressive politics. Thus *the body* as a concept to think with is a treacherous practice and fully misses a much more salient concept: *[E]mbodiment*. Embodiment and *the embodied experience* are vastly different concepts with the latter being a lot more resistant to grand-narratives and is thus a powerful emancipatory tool. *Embodiment* to me refers to the physical existence or manifestation of a concept or entity in a bodily form, in a manner that affects my body. Abstract ideas, social constructs, identities all are expressed and experienced through the physical body. Against that stands *the embodied experience in itself* which is my subjective, lived experience through my body – not a conscious discussion thereof; embodied experience is a product of life indifferent if this is surrendered to the *scrutiny of the conscious* or *academic inquiry*.

Ayers [17, p.315] writes:

"I think therefore I am," it should more correctly state something along the lines of "I think of something, therefore I exist in relation to that thing and because of that thing".

The experience of one-self (or better, *representations of oneself*) to oneself, when facilitated through technological representation, fosters new experiences of consciousness. As much as one *becomes* through engaging with ones environment and its inhabitants, one also engages with oneself through self-representation. If these self-encounters become consistently and fundamentally changed through digital technologies, the consequences for self-conception, identity and *conditions of consciousness* must be investigated. Future STS research hence must differentiate between *body-led research* and *embodiment focused studies* as these two methods are often conflated. The locus of consciousness though, in the backdrop of continuous experience of oneself in mediated systems entails therefore questions on the *locus of consciousness*, rather than querying the *boundaries of the body*.

Conclusion Cluster 4 This cluster captures how the phenomenological premise to epistemological inquiry can invigorate questions of human-computing relationships in new and exciting ways. Both literatures (phenomenological scholarship on one hand, and practice-centred representative/performative approaches to computing on the other hand) have much

to offer each other. A performative investigation of code can be substantially buttressed through an explicit drawing on the phenomenological commitment to tread virtual codescapes with the same reverence as physical objects or commonplace established social constructs that are part and parcel of sociological inquiry.

A phenomenological approach to *code* however goes amiss if *its focus 'on the experiential' is not explicitly including the effects of digitally mediated representations and their inseparability from technology and therein code itself*. Whilst the objective of phenomenological approaches is to side-step the overbearing power of the cultural turn, code - despite its ephemerality - must be recognised as a deeply *affective, visceral* and a *corporeal modality* that is a firm and inescapable part of the landscape which we inhabit, and through which we move.

2.3 Concluding remarks

I want to reflect back on this literature review, not just as a conventionally necessary chapter of a thesis, but as a resistant intellectual performance, a preview of my understanding of what it means to *do STS*, - an outline of my subversive handwriting and academic practise.

I began with an unpacking of the very role of *the literature review* in the context of a thesis; its performative baggage and its political subtext in the context of my work and pursuit of graduating. I unpacked the literature as a research endeavour in its own right (i.e. as its own sovereign form of knowledge production). As it pertains to the topic of this thesis I demonstrated the overall landscape of phenomenological approaches of approaching *the digital* within the discipline of STS. Evidently, my claim that my review reflects the academic landscape can only be maintained if my search criteria are considered *valid*. I seek to sustain my case for this validity through transparency in my methodology and being clear about my research regimen and my search results, as well as my institutional and my own limitations.

Not all papers that were yielded by my query were accessible/licensed to me; and in the case of 2 articles obtained, I have hesitantly decided to exclude these from my review, even though they met my pre-defined criteria. These papers in question were part of a very specific domain in a sub-discipline of *formal logic* (respectively *set theory* or *computability theory*). Within this sub-domain, my search terms were appropriated in a very specific manner and for a specific purpose, and their inclusion into my review was beyond me due to having no training in formal logic/set logic or advanced mathematics which are a prerequisite to needed to intellectually access these works. Despite this hesitant act of curation, I maintain that what I *do* achieve in this literature review is to survey

- a vast landscape of profoundly differing,

- contemporary,
- STS approaches to *'the digital'*,
- under a phenomenological heading.

I demonstrate the value of structured literature reviews in STS; and whilst this method is unlikely to be un-precedented in the STS literature; I maintain that *the formal, structured literature review*, it is a largely overlooked tool in the discipline, and as such I sought to platform it in this chapter. Given the largesse of my research topic (see Ch.1) I am using this literature review's discreet and narrow and specific conceptual space as a stronghold from which I will embark into the rest of my thesis in an emancipated fashion.

My aim is to actively unsettle the medium *from within*. "Reviews are research." [97, p.2]. Reproductions and my curatorial work of presenting the obtained literature is not neutral - it is transformative, political and performative. In this chapter, in this thesis and my overall practice as teacher and artist I challenge my audience to become aware of the politics that I am subjecting them to; as they are the same politics that I must negotiate when crafting my work (this work), and use to resist when encountering the writing of others.

Though the framework/lens of *the phenomenological STS literature on the digital* I will continue to write this thesis, and build my case that my work is firmly original, firmly STS and firmly relevant to the literatures covered in this chapter. Having grounded myself in this context, I make a case that my exploration of *the digital* relates to the contemporary phenomenological literature in STS on *the digital*.

With this literature review in mind, I conclude that STS neither possess a single concept of *the digital* nor does it maintain a single conception of what it means to conduct a *phenomenological* investigation.

Part II

3 In(ter)ventions

Chapter 3

(Die) Mensch-Maschine/Touch, I remember Touch

The premise of this chapter is that the objects/concepts of *body* and *computer* or *machine* stand in conceptual opposition. The soundtrack to this chapter is comprised of two songs, the first one being Kraftwerk's *Die Mensch-Maschine* (1978) [161], and the second one being *Touch* by Daft Punk (2013) [65]. Why a soundtrack? These tracks have been part of my surrounding landscape when I was developing this intervention. They were companions when creating the work, and over time, became knowledge bearers and collaborators in their own right, who - to me - imparted more knowledge on my thinking, and were more authoritative than much of what I encountered in books and articles and journals.

Die Mensch-Maschine is a repetitive and harsh, minimalist, electronic tune stressing the duality and opposition of man and machine whilst acknowledging *our* mutual dependence on one another. The absence (or presence) of the German definite article '*die*' in the track affects whether the song describes the dualism of *man* vs. *machine*, or if the song instead makes a point that 'we' are *man-machine* hybrids all along instead.

Touch from the *Random Access Memory* album is musically almost the exact opposite. This track is a melodic, almost symphonic, lament by a synthetic intelligence who bemoans a time when *they* were able to experience *touch*. Whilst transecting a bewildering array of styles, speeds and timbres, the singer/narrator tells us of the inseparability of *touch* as a precursor to *kindness* and hence a vital necessity for the possibility of *humanity*^[a]. It seems that without the ability to sense touch, *being* and *causality*, but also *time* and *space*, lose their meaning; all that remains is memories and melancholy.

^[a]I am referring to the quality of *benevolence* more so than the noun that describes mankind; or the human condition. Having said that, the multiplicity of the term is a lucky trait of the English language which I am intentionally making use of here.

In particular the latter of the two tunes has been a chaperone that has accompanied me through this intervention; the knowledge in these two tracks has helped me to order my thoughts and helped me to realise ‘what’ is important; and ‘why’ - *when thinking with computers*.

It is the objective of this chapter and this intervention to account for a more-than-rational experiment that *enlivend* ‘the computer’. This chapter gives account of the process of beginning to formulate a *somatic method of research* which develops over the three interventions in this thesis. This first section of this triptych ‘opens up the computer’ and through that, ‘opens up [M]ethod’ - but does it *alongside* the discipline of HCI and expands what [M]ethod *is* and *does*. As this chapter is documenting an iterative and embodied process, it furthermore proposes a type of writing that mimics the multi-sensory and embodied experience of *witnessing dancing*; rather than merely give a written account of dance.

3.1 Background

3.1.1 Allied literature on *In(ter)vention*

As the literature review (Ch.2) excluded methodological and theoretical texts that did not directly engage with phenomenological, digital STS, it is in this *allied literatures* preamble where theoretical contributions are given space and consideration. Such preambles can be found prefacing every intervention (i.e. also in Ch.4, and 5). This intervention has emerged in alliance with *inventive methods*.

“[A] method can be inventive if it can be deployed to ‘lure’ materials into *posing their own problems*.”

Lury and Wakeford [181, p.21],[85]

What follows is a synopsis of the *inventive methods*, followed by the argument that these methods share much of the same epistemological premises and common ground with my research objectives. Even though I am not dedicating this thesis to the body of literature self-identifying as *inventive methods*, I want to acknowledge this philosophical kinship - not least because I engaged with much of the book and its authors during the production and write-up of this intervention. *Inventive methods* are a trustworthy ally in my mission to *write better stories* and *write stories better*. The following section outlines how Lury, Wakeford and their collaborators seek to achieve this, as I understand their work. Their book, coining the term *inventive methods*, advocates more-than-rational^[b] practices in research, and describes what these contribute. *Research* here, refers to:

- method(s) and methodology (i.e. how information gathering and/or analysis is conducted), as well as
- the process of writing these up (or otherwise communicating) findings and
- how these outputs can be shared.

Inventiveness can take place at any one (or all) of these stages.

It is important to recognise that while research questions are often essential for guiding research, there are also those practitioners who exploring a topic without a specific or even general question in mind. Those researchers immerse themselves in a subject, gather information, and learn as they go, acquire scholarship in practice and allowing themselves to

^[b]Alluding to, and borrowing from the term *more-than-representational*, coined by Lorimer, cf. [178].

I aim to articulate a concept of research that diverges from the traditional, explicitly driven enquiry. This alternative approach favours a kind of scholarship that emerges organically from tacit expertise grounded in inherent ability and social capital, rather than from a deliberate pursuit of predetermined solutions. To elucidate further: It is possible to cultivate scholarship and expertise, potentially reaching a world-leading status, through a process ingrained in contextual habits, independent of any explicit problem solving impetus. The paper by Winter et al. exemplifies this concept within the field of dentistry. It demonstrates how such an approach can foster the advancement of professional practice. This advancement, initially independent of solution-focussed aims, can subsequently be transformed into a structured framework. This framework encapsulates the intellectual capital amassed and translates it into a dialectic of inquiry and response, thus offering a model for understanding and utilising implicit knowledge in professional contexts.

uncover discoveries and let them happen naturally. This approach underscores the nuanced interplay between structured questioning and the potential for serendipitous discovery in the pursuit of knowledge. The matter of *question* is not an essential property that defines *Research*.

Inventive Methods: The happening of the social by Celia Lury & Nina Wakeford [290] is a methodological provocation, consolidated in the medium of an academic collection from 2012. Each chapter explores a different method or methodological tool (such as *interviewing* or *probing* (Ch.14) [26] or *experimentation* (Ch.5 and 6) [42, 187]; or more elusive methods such as *speculation* (Ch.17) [217], *anecdote* (Ch.2) [197] or the *the tape recorder* (Ch.18) [25]. The overarching mission of the work is to contribute and respond to the interest in the politics of research that concern method itself, as well as the resulting politics of dissemination of research and practices in research.

The work also draws on the sensibilities of *the affective turn* (such as works of Clough et al. [59] and the importance sensory engagements and embodied experiences play in the production of knowledge). The text is also picking up some of the tenets of Büscher et. al.'s work on *Mobile Methods* [51]; an appeal to re-attenuate our attention to the inherent transience of systems, rather than be misled or tempted by the convenience of static snapshots. Wakeford [290] labels this as “a new empiricism of sensation” [p.1]: a call for an expansion of the “repertoire of the ‘materially innovative methods’”[ibid.]. Such material invigoration acknowledges the work of Law [171] and new-materialist writing; yet the authors make the case that *methodological inventiveness* is more than that. The first chapter establishes these key properties, potentials and promises of inventiveness, and outlines the intellectual ancestry on which the *inventive premise* is based.

Newness and Inventiveness

Newness of method and the inventiveness here stresses through re-imagined usage of methods that are existent new forms of manifestations of material and social effects can be realities. Affect becomes framed as part of the web of consequences affected by material changes or consequences of social phenomena. It is in this way that *method itself* should be understood to be invigorated.

Inventiveness is not an intrinsic property to the methods presented in the collection, but *inventiveness* is an affordance that becomes produced; it emerges in response to the research agenda and the type of findings the researcher seeks to put forward. An effort to *enliven* social research, for example, can bring forward *inventive* techniques. *Inventiveness* may happen intentionally by following the guidance from the book; but can also be identified in work that has no conscious relationship with the work of Lury & Wakeford.

Their text itself demonstrates self-awareness of these issues and acknowledges these in their authoring practice. For example, the book's organisation sidesteps some of the implications that come with ordering chapters numerically. *Numbering* implies ranking; implies gradients of importance. Therefore, instead, the editors rely on an alphabetical regimen to order the chapters, paired with the explicit appeal to pursue an individual reading journey; not a vertical-continuous engagement following chapter numeration or page numbers.

Such a plea acknowledges that any text is not a body of knowledge, which stands stable, which stands in isolation; but textual knowledge emerges in an engagement and negotiation with the reader and *through* the process of reading; and *how a text becomes read* is contingent on the context in which texts take place (e.g. the surrounding chapters). What precedes a chapter matters and what follows a chapter matters. Where a text is read matters; how a text is read matters; by whom a text is read matters. Where, how, who, (when) *one is* matters. Whilst contemporary critical theory discusses much of this, Lury & Wakefield *invent* a strategy that not only acknowledges these debates but puts the implications for them into practice despite the limitations of *the medium of a book*. They explore the liminality of bookness and renegotiate/overcome some of writing's inherent political baggage. Their *invention* answers to contemporary philosophical problematisations and engages with them creatively. *Inventive methods* therefore are fundamentally intended to not only recognise these problems, but answer to them. I understand that the objective of *inventive methods* is to render fundamentally unanswerable problems at least a little bit more answerable. The ambition is not to solve them, but to dwell in their mystique (cf. quote on p.63, line 6).

The biases that the medium of *books* and the practise of *reading* (and *writing* and *researching*) entails are elusive and engaging them within the medium of research and writing can provoke an infinite loop of self referential paradoxes and instabilities (for more on this, see also [104]). Thus, these debates border on being fundamentally unanswerable, as their subject is *inherently in motion and dynamic*^[c]; and even when/if good answers exist, they can seem *inutterable*.^[d] *Invention* is needed when one seeks to engage with the *Unanswerable* or *Inutterable*. *Unanswerables* and *Inutterables* are inescapable companions at every stage when conducting (social) research. They also include those findings, gut-feelings, observations or concerns that perish when *we* (as researchers) attempt to put them into writing.

^[c]I mean that once one writes about the ambiguities of writing, in the form of a written text,

^[d]On this topic Lury and Wakeford [181, p.7] write in their introduction that: "*It is this combination, we suggest, that makes a method answerable to its problem, and provides the basis of its self-displacing movement, its inventiveness, although the likelihood of that inventiveness can never be known in advance of a specific use.*"

Unanswerable (or *inutterable*) is all that which is interesting, important or impactful,^[e] but which cannot be described (let alone investigated) with the existing methodological toolbox and within the accepted framework of social research. As *we* who engage in social research are continuously encountering the limits of our methodological (and linguistic) toolbox, the scope of *methodological inventiveness* is infinite. *Inventiveness* therefore can hardly be defined, rather it *becomes apparent when encountering it* or it can be provoked when one tries to face the challenges of writing at the limits of [W]riting.

Despite this morphological ambiguity (and therein an invigorating flexibility), several conclusions can be drawn (after Lury and Wakeford [181]):

Inventive methods can intervene into the world, interfere with the world or refract it.^[f] As such, they can be an irritant; i.e. drawing out cracks in concepts, language, theories or method; draw them out to produce better representations of the lived world instead of re-producing caricatures or convenient oversimplifications of it. What *anthropologist of Reason* Paul Rabinow writes about ‘reflective and sensitive observers’ also applies to *inventive* research strategies. Both, Rabinow’s *sensitive observers* and Lury & Wakefield’s *inventiveness* strive to create/inhabit spaces which are:

- [O]f problems.
- Of questions.
- Of being behind or ahead.
- Belated or anticipatory.
- Out of synch.
- Too fast or too slow.
- Reluctant.
- Audacious.
- Annoying.

Rabinow [228, p.40, my typesetting]

It is important to note that practising *inventiveness* is not bound to conducting research; it can also be a conscious practise about how one chooses to engage with the world. The boundary between ‘researching’ and ‘being’ is an artificial distinction anyway: Engaging inherently produces understanding, in the same way that *Method* is always a form of engagement. Method and engagement do not *become blended* - rather, they were never separate to begin with. *Inventiveness* understands that the ‘*disengaged observer*’^[g] is a [M]ethod.

^[e]Alliteration taken from the work of Cachon et al. [54].

^[f]See also [115] and [19] on *refraction* as reading and writing method.

^[g]With this term I am referring to the important work of Shapin and Schaffer [244]

(And) [T]his [M]ethod - like any method - has its limitations (as well as its strengths). The implications of this, ought to be taken sensuously - and *inventiveness* can help us to do so in our research practise.

Neutral observation from afar (through *inventiveness*) becomes re-interpreted as an alluring myth; upheld as to not undermine or damage the *raison d'être* or meaning of empiricism. *Inventiveness* seeks to admit the inherent, and inescapable open-endedness of the world. The social world's open-endedness (whilst inconvenient for work that claims to be *conclusive* or *definite*) should be included, incorporated, maintained and celebrated.

Open-endedness is not limited to the temporal dimension of the social world, but also includes sensory impressions as *we*^[h] do not only observe with the visual senses. Observation is a fully immersive multi-sensory bodily engagement (ex. Ch.11 *Photo-image* [23]). Individuals, groups, people, *we*^[i] are suspended in countless and relationships, histories and environments, which haunt our perception, methodological and analytical predispositions and the consequent production of knowledge. The notion that it is possible to isolate processes, people, groups or phenomena is an alluring ideal, but it is an inherently biased notion, yet despite this bias, nonetheless a worth-while endeavour.

So what then counts as *inventive*?

Lury and Wakeford [181] identify *inventiveness* in any research endeavour that recognises, acknowledges and addresses its inherent methodological limitations. *Inventiveness* is when this is not only openly and honestly acknowledged but the implications of these limitations are fed back into the method of research. One exhibits *inventiveness* when new methods are produced that take inherent limitations into account or when knowledge is produced in a way that seeks to maintain the ever-changingness of the world; when in spite of the limitations of the written academic medium, research-writing is not forgone but *reinvented*.

This form of newness fascinates me as it necessitates neither new machines or methodologies in themselves. The newness that *inventive methods* enable is emergent out of a modulation of the epistemological apparatus by queering for example the quantitative/qualitative gap, or the categories of *analysis* and *write-up*, and the like.

Figuratively speaking, to me, *inventive methods* appear as a twin-sibling of '*non-inventive methods*'. This *inventive* child is an offspring whose existence may be denied, its voice muted or agency undermined; but despite such efforts this child's existence is incontestable - and with that comes a right to being heard and taken seriously. I speak of twins as I read the premise of *inventiveness* being as much the result of Western scientific thinking as

^[h]As researchers, but also as lay people, citizens, ethnographers, readers ... etc.

^[i]As researchers.

'non-inventive research'. *Inventiveness* is not opposing the premises of conventional research practises; *inventiveness* emerges if the premises of research are thought through to the end. *Inventiveness* and *non-inventiveness* go hand-in-hand as they share the same epistemological premise; but *inventiveness* does not surrender to the temptation to (over)simplify: the world; ways of knowing; ways of communicating; ways of reading and perceiving. Rather, it mimics the entanglement of the social world and openly admits the challenges that come with this acknowledgement in order to facilitate 'better' stories.

I grappled a lot with Lury and Wakeford's work when I read it. Before reading *Inventive Methods* I was already familiar with some works on non-representational theory (such as Thrift [276], Vannini [281] and selected works by Lorimer [178], Wylie [320], Ingold [143], Cresswell [63] and others) and thus I found Lury and Wakeford [181]'s book a little confusing, a little irritating. They write about *all the right things* that matter to me, in *all the right ways* (whilst somewhat difficult to read). The contents and appeals are explicit, encouraging and resonate well with me; but I (still) remain somewhat puzzled how it differentiates itself to non-representational theory? Or how it liaises with (or against) it. The work cites non-representational texts and authors, but stays mute on how *Inventive Methods* position with or against non-representationalism. In the absence of such a theoretical self-taxonomisation it falls on to the reader (or in my case, me as their interpreter) of *Inventive Methods* to fill in this gap.

Still somewhat hesitantly, I think of the work as *un œuvre proto-non-représentationnel* - a 'proto-non-representational' work, a predecessor and trailblazer for the *non-representational theory on which I rely on*; even though *Inventive Methods* was published 5 years *after* Thrift's *Non-representational Theory: Space, Politics, Affect* (2007) [276].

For a while I was tempted to frame these two works as a mutually supporting pair, where one is the 'theory' and the other the 'practice'-counterpart, but this conceptualisation does not do either of them justice. They are better-served with just letting them co-exist next to each other; in a similar space, in a *similar philosophical postcode*, supporting one another whilst also creating constructive friction.

Lury and Wakeford [181] state that the birth of their book was an eponymous workshop, *some time* before the publication of their book. All I can do is imagine that the creative forward-facing energy of the workshop emphasised the generation of new ideas and broadening the scope of *Method*; because *there are many very good reasons to do so*. It is the reader's task to decide which argument they might find most convincing and bring this to the conversation. *Inventive Method's* agenda is to outline what a new take on *methods* could look like, and what these new methods can do (and how); I can only speculate if this text - down

the line - helps to catalyse the work *Non Representational Methodologies* by Philip Vannini [282] a text that was at the core of catalysing this thesis and all its related and adjacent work.

3.1.2 Ideation and reasoning underpinning the intervention

Three key elements caused me to put forward the investigations that buttress this chapter. Firstly was an internal quarrel I had with the "Dance your PhD"-initiative by the journal *Science* in 2007 [28]; secondly, a critical stance towards the discipline of HCI (which was the dominant discipline in my department) and thirdly, an attempt to consciously 'ground' my work in the local context that enveloped me: the city of Manchester.

Countering reductive notions of academic dancing

Since 2007, '*Dance your PhD*' is an annual competition by the prestigious journal *Science*. Participants from the fields of biology, physics, chemistry or social science submit a choreographic interpretation of their doctoral work via video to the journal where in two stages four winners are selected.

Winners are selected based on the aggregate of three scores: scientific merit, artistic merit, and creative combination of the science and art. Thus, the best dances not only insightfully reveal the scientific content of the PhD thesis, they not only show artistry to create a compelling spectacle, but they also creatively combine these two aspects into a successful execution.

Science [241, para.11]

The instigator of the current '*Dance your PhD*' initiative, John Bohannon, places the roots of the project back into the 1970s in the School of Medicine at Stanford. A student-initiated initiative by dance-students was funded by the bio-medicine department. A deciding factor in choosing to fund the project, the *then*-head of the department recounts, was to pacify campus tensions in response to the shooting of four students during anti-war protests in the previous year. The subject of the performance was an attempt to "capture the essence of [the process of protein synthesis] in dance" [28, para.5], inspired by the lectures of *future* Nobel prize winner *Paul Berg*.

Personal communications by Bohannon with the judges of the contemporary competition indicate that the panel members particularly value the fun that this competition generates, as well as the great potentials for successful *outreach* and *public engagement with science*. Nonetheless, Bohannon also acknowledges that some judges afford a methodological value of using dance as method to better understand their subject of study, and thus to advance research. In particular the cancer researcher David Odde (a contest judge) acknowledges that "[microscopes mask] the truly violent nature of the random motion of molecules" [28,

para.23] and that a recount of his own research via the medium of dance enables him to reinvigorate his imaginary of the molecules he studies. Dance, he states, enables him to attain a more intuitive grasp of the dynamic molecular auto-assembling and disassembling processes. Subsequently he even published on the value of *bodystorming* as scientific research method (see the publication "Science + dance = bodystorming" in *Trends in Cell Biology* by Flink and Odde [83]). Furthermore, he claims, that modelling molecular processes with living dancers is much faster than simulating them computationally.

Nonetheless, the majority of judges and the general perception of *Dance your PhD* emphasises aspects of *fun* in a reductive fashion, or limits the scope as being primarily *outrach* or light-heartedly *illustrative*, not methodological or as knowledge-producing. In resistance to this, I sought to engage with *dance as method* to explore existing questions in computing; I wanted to explore for myself what knowledge a serious engagement with the body can produce.

HCI (Human-Computer Interaction)

Being part of the School of Computing and Communications at Lancaster University, and therein in the HighWire Centre for doctoral training, the majority of my fellow classmates sought to write for, and publish in the discipline of HCI. Looking at the discipline in its current state, it is hard to overestimate the importance and power HCI's main publication has in steering the discipline as a whole and its research culture, norms, practises and values formatively influencing academic research in HCI. CHI ^[j], the discipline's main outlet, is a powerful institution at the centre of HCI, whose domineering role and position has been heavily criticised in the literature, even in its own publications (more on this below).

HCI is an interdisciplinary discipline whose origin is dated back to the 1950s or 1980s, depending on the literature [212, 287]. The framing of cybernetics and computing were heavily influenced by discourses originating from the Cold War. Cetacean and mammal brains were understood to be cybernetic supercomputers and thus comparable, if not even analogous to computers (see also the work by Werner [305] on this topic). A number of interpretations of computer science (or cybernetics respectively) framed studying the brain and computation as fundamentally entangled and interchangeable.

To what extent this discourse contributed to the formation of contemporary HCI is unclear; but accounts of the discipline describe a leaning towards psychology (rather than sociology or anthropology) as methodologies through which to make sense of *human factors in computing* [75, 22]. "*Human factors in computer systems*" was in fact the name of the conference the

^[j]Abbreviation for ACM SIG:CHI, short for the *Association for Computing Machinery: Special Interest Group on Computer-Human Interaction*

ACM gave the first conference dedicated to this topic in 1982; the inception of the CHI publication.

Psychology's reliance on mathematical and statistical methodologies, decontextualised ways of knowledge formulation, its practise of "hypothesis testing" and the importance and prevalence of computational and statistical analysis seems to have better resonated than the more contextualised and literary traditions of sociology, anthropology or other disciplines which could have been put forward to investigate *human factors in computing* (cf. [75, 22, 74]). The baseline assumption on how to access understanding of the human condition is facilitated *through the individual* in the case of psychology and more through environmental, social and cultural factors in sociology and anthropology.

A key objective of the conference was to further the value of computers by increasing their effectiveness; but not through cybernetic innovation but the optimisation of computers (and software). By better understanding these *human factors in computing*, ensuing software optimisation would include attempts to minimise bottlenecks such as usability, take into account computer literacy, user behaviour, interaction premises, customer wants, etc. Ignorance about these factors - was the assumption - stifled the large-scale adoption of computers. With the increasing distribution of commercial computing systems in large business, where the users of computers were increasingly more often non-computer scientists themselves, the need to better understand these *users* became evident. Thus HCI included methods that went beyond traditional computational solutions, to make computers as a tool more efficient and versatile. Thus right from its outset, de-contextualised and generalised lessons for improving and innovating computational systems were at the centre of the discipline [313].

The non-academic, corporate leg of HCI was much closer aligned with disciplines informed by different design methods, ethnographic methods (user studies) and design engineering, product design and sociological scholarship [75]. Particularly the immense influence of the Xerox Parc laboratory and the visions by Marc Weiser and his co-workers contributed to the dissemination of non-psychology based methods of research (notably product development, design and qualitative research methods) into academic HCI [41, 75, 212, 301].

This is noteworthy because the majority discipline's central positioning has little changed since its early days. Much of HCI is still centred around an attempt to 'represent/qualify the users' in IT/CSartefact development [61]. The produced results however are generally not differentiated according to local contexts but it is implicitly alluded that users are homogenous and compliant to a euro-American centric standard [4, 9]. A post-psychological approach to HCI is needed; i.e. empirical research that is acknowledging diversity in users and stressing the inhomogeneity amongst users and user contexts is needed [142]. Research that takes into

account implications of and for local cultures of computing technology in a way that seeks “to break away from the focus on work-related and ‘purposeful’ interaction” [77, p.2] is only a more recent addition to the field.

In the backdrop of this abbreviated history of the origins of the discipline of HCI, much of my work emerged in resistance to the positivist undertones of the disciplines and how it approaches *the human factor* in computing. Contemporary critiques of HCI are growing and have spawned sub-disciplines within the ACM (Association for Computing Machinery) such as alt-CHI, femCHI, ICT4D, SustainableHCI (to name a few). Recent findings by Dr. Lisa Koeman identified that 85.8% of published CHI2020 papers that included human subjects, had user engagement timeframes of “one day or less” [160, fig.7]. I deem such trends highly indicative of the values the discipline (and publication venue) fosters, and in return what type of subsequent work will continue to emerge from this discipline and within CHI. Profoundly uneasy with the discipline, I sought to ground my work in my local environment.

Manchester and Computing

“I like to write from memory, as imperfect a record as that provides.”

Levin et al. [173, p.170.. [k]]

There is a third central source of ideation that buttressed this intervention; yet my notes and diary entries to this regard are only partially extant. I fail to remember which texts *exactly* I was reading and which I drew on - yet I remember exactly what they taught me: The writings were concerned with undermining the notions of disembodiment in academic labour. Serendipitous stumbling over *interesting books* in one’s library, as well as *water-cooler conversations* and the proximity to other scholars becomes echoed in the type of work that is conducted. The presence/proximity/equipment of a research laboratory can just as much shape methodologies that are employed as literature or disciplinary custom. The work by Sandra Harding, and in particular her notions of *Strong Objectivity* and *feminist standpoint theory* resonates much with my aforementioned ideas [122, 231, 40].

^[k]Whilst I have the reference and citation for this quote in my notes; I am unable to get hold of my physical copy of this book to ascertain the exact page number of the quote. The only consolation to this is that I find my inability to procure the book as a manifestation of the global state of affairs and therefore I regret that this part of the citation has fallen victim to social distancing; it becomes a tangible trace of the pandemic which not just implicitly but now also also explicitly leaves its traces in my text. Given that the quote in fact refers to the incompleteness of memory, notes and text - I admit that I find my shortcoming nonetheless serendipitous. Two years on, I have retrieved my notes. I am back in the UK, make final edits on this text and reflect back on the legacy of 2020, 2021, 2022... What remains is a large and fruitful detour of over 2 years of change, growth, perseverance and research. Levin et al. [173, p.162].

In an effort to acknowledge my local ecology, I sought to actively emphasise *local* sites of engagements with *local* knowledge bearers. I would do this by binding myself to sites of knowledge and knowledge bearers who would be within walking distance from my flat in the centre of Manchester. *Walkability* (as interpreted by me) would be the catalyst and triage system of thoughts and ideas; distance (or proximity respectively) would guide where I would get my knowledge from for this intervention. Through this limitation I sought to give my local environment a voice and explicitly draw on the local sources of knowledge and let these shape my thinking and thus give Manchester and its important link to computing history a voice.

Whilst living in the centre of Manchester I did much of my reading in sight of/ or next to the statue of Alan Turing in Sackville Park, a small green space in the middle of *the Gay Village* across Canal Street. Just a stone throw from there is the *Manchester Art Gallery* - a space that consistently features queer and PoC artists who put forward work that is regularly original, pertinent, powerful and inspiring. In particular the *The Imitation Game* exhibit from 2016 ^[1] must be acknowledged as source of much thinking. It sparked ideas as well as many conversations with visitors, curators, security personal and the pieces themselves were instrumental in shaping my thinking and giving me the courage to pursue my unconventional path. Furthermore the Manchester Museum of Science and Industry advertised its live demonstrations of *Manchester Baby* - the nickname of the so called the Small-Scale Experimental Machine (SSEM); the first computer with fully functional RAM (Random Access Memory)^[m]. A further crucial component that shaped my thinking was a most fruitful conversation with Manchester University's Historian of Computer Science in the history department. In a precious hour of his time, the resident researcher in charge discussed Manchester's ties to the origins of contemporary computing and the state of current debates in the history of computing. He was kind enough to show me some original documents from the time and walk me through the small departmental photo exhibit on the history of computing. ^[n]

It was in spectating these images of the mainframes that it dawned on me that *exploring the kinetic of computing* would be a fruitful pursuit. Mainframes in the past bound their

^[1]<https://manchesterartgallery.org/exhibitions-and-events/exhibition/the-imitation-game>

^[m]Uncannily, this would also be the name of the Daft Punk album from which the aforementioned song *Touch* is.

^[n]Manchester's importance in computing stems primarily from Alan Turing's pioneering work at the University of Manchester, where he contributed to the development of the Manchester Mark I computer and made groundbreaking theoretical contributions to computation. The creation of the Manchester Baby in 1948, the world's first stored-program computer, further cemented Manchester's significance in the history of computing. This legacy that continues to influence the field. His biography and living in close proximity to the Alan Turing statue serves as a daily reminder of Manchester's pivotal role as a computing hub which in return informs my research and emboldens my critical-theory, feminist, and decolonial perspective.

‘users’ to a specific seated locus to operate, whilst collaborators would operate the computer by manually importing and exporting programs on large tangible media. The mainframes themselves possessed much kinetic agency (spinning tapes or leavers and much more moving parts).

A spectacle and kinetic that has inverted itself fully through technological progress. My immediate mobile companion-devices possess no more moving parts; whilst the opposite is true for me, as their user. In my reflection and meditation about these devices I am led to propose a process of adsorption^[o] of kinetic potentiality - away from machines in favour of human users - that coincided with the technological progress. With increasing petrification of the mainframes, their users became increasingly more mobile. *Movement* didn’t disappear - the *right to move* merely ‘moved on’.

Compared to users-long-gone, I enjoy many more permissions to *walk* and be mobile and move in ways that I enjoy; but what has this meant for our companion-technologies? Walking-in-Manchester thus established the third central framework from which my thinking has stemmed from, still stems from.

3.2 Account

3.2.1 How does one account for dance?

I met Latour^[p] once; it was a brief interaction. I mentioned I write about dance, or more precisely that *I seek to write dance*. He was briefly intrigued about my approach and said that he deems nothing else harder to write than *to write dancing* (more on this encounter in Ch.7). Work prior to my PhD already faced me with trying to elicit ways to *document* that which is *hard to document*.

Mobilising that which is hard to mobilise

With

the knowledge-power of hindsight,

and an equal

^[o]The capturing of particles in a manner that they remain identifiable on the surface of the adsorbant.

^[p]Bruno Latour, seminal figure in STS, co-developed ANT, which views humans and non-humans as network actors, disrupting traditional human-centric perspectives. His ethnographic methods focuses on the social construction of scientific realities, profoundly influenced STS, reshaping perceptions of science, technology, and societal interplay. Latour’s critiques challenge conventional science-technology distinctions, advocating for a comprehensive understanding of scientific practices and technology’s societal role. He is criticised for insufficiently addressing the ethical dimensions in his approach and neglecting the political complexities inherent in human-non-human interactions.

explicit commitment to *this topic* whilst in-the-moment

the overall central cornerstone of my work(ing) is dedicated to exploring which ‘knowledges’ are hard to *mobilise*.

My preceding work that qualified me for my doctorate (the *Master of Research (MRes) Innovation*) was a design project that sought to *mobilise* the experience of *being colonised* as an Indigenous person to a non-Indigenous *reader*. *Reading* in this case is not the literary practise of reading written words, but rather *being the recipient of an idea through a medium*. Reading/Writing is one way to convey knowledge, (to *mobilise* knowledge) but my MRes project explored non-literary media. It also was not *knowledge* in the sense of science, lay-science, or experience that I sought to *mobilise*; but rather an echo of my affective experience of being a person of indigenous heritage in dialogue with indigenous people talking about the manifestations and experiences and expressions of colonisation - and resistance strategies. My *vehicle* for this *knowledge mobilisation* came out of an iterative reflexive design process. Each iteration assessed the successes of the artefact according to

"How well does this intervention convey the experience of colonisation?

&

What is unnecessary, distracting or not contributing to its fullest potential?"

(“*How is this better?*”)

(“*...better for whom...?*”)

(“*..better at what?..*”)

The artefact I produced was a wearable artefact. My chosen label for this object though was ‘emotional exoskeleton’. A wearable technology that subverts the militaristic associations of ‘exoskeletons’ in the engineering/innovation context. I equipped my garment with sensors and winches which enabled the item to constrict the wearer or actively loosen its grip. The different mechanisms stood in for different variables relating to colonial exploitative practises (mining, deforestation and land loss to wind-farms, to barrages, to roads, to power-lines, to progress).

What I have done is try to ‘write affect and the Indigenous experience’ in a manner that travels to non-Indigenous *readers*. What follows now in this thesis, is my take on *writing dance* and my negotiation to walk the line between *remaining embodied and in the moment* and *remaining accessible and viable across time, transcription and medium*.

I am not a trained dancer. That is in fact the point. To nurture a mindset where I encountered things anew - and I encounter new things. I extended.. [Halt!] Halt. It won't work like *this*. Stop. Let me try again. *This* is shall not be an account - this shall be a performance!

3.2.2 Mobilising 'What you were absent for':

I'm not a trained dancer. That is in fact the point. To nurture a mindset where
I can encounter things (a)new

and

I encounter new things.

To do this, I extended an invitation to my dear friend Hamish who's creative practice I admire; who was kind enough to introduce me to some of the Glaswegian independent art scene^[q]; who in many exciting conversations has revealed to me me that our creative practices have much common ground; - whilst also being very different. Complementary. A perfect outset for cross-fertilisation.

We bonded over a common admiration of Merchant's *Death of Nature*^[r]: a subversive work that undermines *the environment* as Western, enlightened concept and epistemological weapon: a worldview that subjugates *Nature, Woman, Indigenous* peoples; all that is 'Wild'. Hamish's passion for *somatics* made me curious: A body of literature *on how to think about the body*, how to use it, how to sense through it. I would rely on this writing, but interpreted as method for/against HCI, informed by the traditions of STS.

The pilot study I did, started with some naive and literal attempts to 'hold on' to *touch*: to capture the instance and locus of human-computer encounters. Using paint. Hands. Keyboards and *leaving impressions*. Paint got everywhere. The outcomes might remind us of images we made in our childhood and youth. But also not. Poor computers. They have been neglected in their childhood. Hands are also the key

^[q]Notably with the very memorable performances from the annual Buzzcut festival [73].

^[r]Carolyn Merchant [192] *The Death of Nature*.

feature on Hollywood's concrete of building in dinosaur fossils.
 'walk of fame'. Akin sites, when unobserved I am making fossils
 to how cheeky children by construction and giving computers
 or couples in love workers. In the same a childhood and an
 choose to 'leave way that movement and ancestry.
 their traces' in the gait gets documented

Did I succeed? Does this pose *more* questions than do anything else? That would be the idea. I am not looking for answers (yet). *We* are not looking for answers (yet). I am looking for *better questions*. I am taking you along.

The images prints the event stopped. When printed in a
 turned out to my liking. Event? Encounter?... particular way this
 I stored them in an arts Something like that. mimicry works! This *touch*
 binder. They faced each Things became clearer. can be brought back. It isn't
 other. That is when the This will require lost. Not even in this thesis. I
 penny dropped. I opened printing in a precise can capture the ephemerality
 and closed the folder. way. Printed (?). of touch; re-produce the
 The event occurred, Printed(?!). Printed(!). kinetic that underpins it.^[s]

These impressions on two facing pages in the format of a book do a number of most exciting things:

Touch (re)-occurs only when the book is closed.

Touch is halted when the book is opened.

The reader can choose to engage with the representations on either side.

Reader, you can even chose to let *me* touch *your* possessions^[t] (means:keyboard*s*).

The piece sparked a number of questions and steered me straight into exploring (and striving to push) the boundary of what can be documented. Not by volition, but due to need. How would I be able to mobilise my impressions, thoughts, experiences and knowledge to another party? How can I echo something so ephemeral? Something so temporal as a practise? How could *all this* can be represented and 'kept alive' and 'dynamic' despite the constraints of time, and written text? *This* is a practice, not a document!

^[s]Ha!

^[t]Herefrom stems the imperative to print the text in the manner/format that I have suggested (— specifications —). If you, *reader*, wants to engage with the text in the manner as I invite you to, I might suggest doing it to the last 44 seconds of Daft Punk's *Touch* [65]. It was *this* passage that months (years?) after doing the intervention retrospectively lined everything up and imbued everything with sense.

That was the pilot. Fast-forward to the moment Hamish arrived and
our
exploration began.

I like to work with videos. In many ways, recorded moving images make more sense to me than text. Video-work - *edited* video work in particular - strikes the right balance, being *temporarily bound*, being *resistant to freezing*, being nonetheless *linear*.

Video work also contains traces of the editor's hand. The raw footage also reveals the movements of the camera-holder. The shaky hands; the stumbling over charging ca-

bles; the search for *the right angle*. The breathing. And things go missing. Footage fails. Memory cards corrupt. Files go missing. Batteries *die*. The '*editor-me*' and the '*camera-holding-me*' find each other frustratingly incompetent.

Eventually we grabbed my camera. Either of us got maybe an hour? The first 15-20 minutes... started without

filming. Get comfy with the unusual situation of being observed. Being filmed. Studied.

Guns of Icarus is a first person actor game, where we are crew-mates on a flying steamship, embodying different roles (mechanic, captain, navigator) fighting other air vessels populated with human players. Beautiful steampunk.

“The key element of steampunk is that it was a world that never happened. The Industrial Revolution took over and we forgot about how to make things with our hands.”

Joey Marsocci, *then known as Dr. Grymm*^[u]

We watched *us* sit. Play. Fight air-battles. ‘Sink’ airships. Fall to the ground. Laugh. Click. Touch. Look. Listen. Talk. Sigh. Sit. Breathe.

Both sets of footage resembled another. Hamish and I became more difficult to tell apart. Our movements resembled each other. How uncanny. We look nothing alike,

but on the small preview window of my DSLR camera we were indiscriminate users. Our bodies were made to look the same way. Similar movements. Similar doings.

^[u][219]

We also observed Medusa the to glow the way Merchant is so...
 the computer. Not Gorgon really we deem thee damn... useful! Then
 just me as doer^[v] also did You one; to useful. let's run with her:
 them's doings. This You and all Your - the next read this as looking at
 was a group effort; a kin. She worked morning, looking the meeting point of
 living thing; and van- slowly and dili- at some of 'the a duality. When Arm-
 ishing if described gently, and we col- stuff', hearing strong touched the
 with schematic static laborated. Tech- 'the stuff' Moon; when an old
 figures or words in nological progress being talked inhabited continent
 a timeless linear text- is a parasitic pro- about, hearing discovered Colum-
 block. Only happen- cess of kinetic ab- myself talking bus. When dance
 ing when enlivened. scription. (What meets text. When
 See him do his thing. I mean with that I text touches reader.
 Baby^[w]. Baby will explain later. In about 'the Is touch an intersec-
 computer. Free. situ, in vivo, in-the- stuff' - tion? No! It is an
 Baby was free. moment, I didn't the whole thing is encounter.^[y] It is
 I am free. What understand it ei- underpinned by allu- temporal. That is the
 does my poor mac- ther). Pity ensues. sions of binary oppo- difference! Intersec-
 book can-do?^[x] Sigh. Poor statue. sitions. That is not tions linger.
 Petrification. Frozen in time. a judgement. Just an Go on. Open and
 Pity ensues. Electrocuted. observation that be- close the book.
 Poor statue. Slowly. In just comes evident to me. At your own pace.
 Frozen in time. the right way, To us. (To me.) In your own time.

You've almost convinced me I'm real.

Where is space for these only referred to a semiotic act, Dancing
 the site of these intersections? all this as 'typ- laden with cul- Birches. Danc-
 intersections? The screen? The ing'; 'Touch' as ture. 'Touch' is ing Pines. Danc-
 Where is the mouse? The concept was yet more primordial; ing Willows.
 space of these sounds? The to be encoun- more essential. Being Willows.
 intersections? words? (I be- tered). Typing More important. Dance your
 When is the lieve we still is a practise, More difficult. name!

^[v]In German the noun "Machender" expresses the idea of a *someone* being busy *doing something*; engaging in an activity. This person is *somebody specific* but it is concealed who this *someone* is. *Machender* is the case when someone becomes dissolved in their doings.

^[w]The Manchester Small-Scale Experimental Machine, was the first computer to store and run a program.

^[x]Grammar/syntax as intended, I am hinting at questions if potentialities, picked up in next (sub)chapter.

^[y]It is here where the title for the next chapter was solidified: *Collisions and Collusions*.

“And we tell our [Hula] dancers: ‘Everything needs to dance: Your hair, your toenail[s], your eyelashes; it needs to dance!’”

Robert Ke’anokealahikikapoleikamaka’opua Ka’upu IV [98]

Dancing *becoming* *key-* Dance is a bod- Not ‘portray- Keyboards
keyboards - *boards*). This is ily practise; be- ing’ animals, are good to think
(Not like Dis- not a big leap. coming animal. Willows, key- with.
ney’s spinning, This has prece- Becoming Wil- boards. Not *Becoming*
singing crock- dent. It just lows. about *mimicry*, *keyboards* is
ery, *dancing* needs courage Becoming but transforma- good to *feel*
keyboards as and reflection. keyboards. tion. with.

Becoming keyboard. Becoming keyboard. Becoming keyboard. Please
hold. Becoming keyboard. Becoming keyboard. Becoming keyboard.

Your transformation is important to us, please hold.

Becoming keyboard. Becoming keyboard. Becoming keyboard. Still
becoming keyboard. Still becoming keyboard. Still becoming keyboard.

A keyboard will be with you shortly.

I am just witnessing.

It’s weird.

It’s working.

[Fast-forward to later]

This was exhausting. We need a break.
He needs a break

We're done.

Time for tea.

Time to rest.

Train.

Hannah Arendt talks about 'writing' as being an ordering of thoughts [318]. An elicitation of rational ideas from the messiness of unwritten, in-articulated thinking. (She would ██████████ hate *this*?) Video-editing does the same for me. I am recalling my impressions. Ordering my thoughts. Revisiting my feelings. Facing myself with distance and hindsight. The monitor becomes a mirror. I am reconstructing impressions, salvaging context (that is fleeting away). I am confronting the incompleteness of my footage (of our footage). What is missing? (Who is missing?) I feel like an archaeologist of ancient Egypt. Excavating artefacts, Gods, languages, ciphers, ideologies, epistemes.

Akhenaten was the first individual? [138, 308]

C02K31YADRVG was the first computer with feelings. [52]

Fig. 3.1 The resulting video



Link to: youtube.com/watch?v=iaMtjWNwz1I *Dancing the history of human-computer interaction: design research process account*

3.3 Implications

The video and the text(s) are attempts to *mobilise* dance; that is to *bring across* to the reader/spectator an experience resembling the one *we* had when we conducted our experiment. The central importance of *somatics* for my work will be further explored in section 3.3.2. In an anticipatory move I want to place in front the key difference between ‘dance’ and ‘a somatic approach to engaging the body’ is that dance emphasises the performative aspect (this being in the Western context usually aimed at an audience (Deities or nonhuman spectators can be equally so be the target audience of dance) whilst the somatic approach focuses on the *mover* themselves and their experience of the movement through their own body. I frame somatics thus as *a dance where I-myself am the sole audience that matters*. The movements (or lack thereof) are only concerned with *how they feel* to the practitioner (how they make them feel); not what they look or appear like to an outsider. In other words: Somatics is an inward-bound bodily practise.

Framed like this, its relationship and compatibility with phenomenological research becomes clear. Phenomenology treats *all that makes up everything that is part of our perception* with equal weight. It creates a level playing field of material objects, made artefacts, emotions and affect, the environment as well as other sensual *phenomena*. It facilitates accounts that are inutterable and imperceptible though non-phenomenological epistemologies.

As the objective of the experiment was to ‘make *the inutterable* utterable’ - writing an account of the experiment provoked a wealth of challenges, conundrums and paradoxes which I had to face when trying to write the piece. The resulting work is an entangled piece of writing that negotiates explicitness with encryption. It transgresses not only norms in HCI, not only of what a thesis does but what ‘text’ does. It includes the reader as an active participant in the process and encourages a number of action points (such as experiments with touch; and the playing of extracts of music). Whilst the usage of *art* as aid in STS writing is common and widely established, the use of music in this way has less precedent. Thinking with animals is permitted [268], thinking with objects is permitted [...], *thinking with portals* is required, [39, 62, 229] - thinking with music is imperative [278]. Like a dance, the reading of this text, *of this thesis-text*, of this artefact, is multi-sensual; multi-medial (digital-analogue; but also paper, a matter of the body; as a political curator-actor-object); and it is inward-bound and performative, but also somatic and affectiveing.

Bringing this work on paper made it clear - it demands a type of writing that transgresses the conventional limits of text and temporality, as well as the norms of academic writing, and certainly those of HCI, and, the written word itself.

It has been speculated that my textual performance of dance is a descendant of *concrete poetry*... but I don't deem [the] concrete very poetic. Instead I see my work as drawing on indigenous poetry - such as the works that I encountered in the library of the National Museum of the American Indian.

In these anthologies of poetry, song and dance knowledge is not merely written, the words are at liberty to move as they see fit. The words echo movements, practises, move freely as they need to. They mirror contexts, bodies, voices. Emancipated from the need to surrender to a readers desire these documents remain only accountable to themselves, crafted with the authority of indigenous sovereignty and authorial/collective/traditional self-governance. These danced words are permitted to resist the confines of paper. These songs are not captured in the medium of *the book*, the pages become the ground and these wor(l)ds summon back the circumstances required for these works to become approachable, transmissible, alive. .

Joshua Whitehead *downloads himself into the present* - installs his queer indigenous identity into the contemporary socio-technical matrices; reclaims technology and environment and places us into indigenous territory. I see my work in that tradition; in line with the life of Johnny Appleseed [310]; of us, who are full metal indigiqueer despite it all, [R]emain it, - always were [309];

who make love, with the land, after it ends.

Indigenous and colonised communities already inhabit the post-apocalypse; and as the descendants of colonisers begin to acknowledge “the climate emergency” [43], we have long made love with/on the land, long after the world has (already) ended.

[Whose land? Where is this land? Who's love?! Which end? [311, 312]]

I do not tell. I do.

The text dance is crafted in a way that seeks to produce new knowledge within the reader; and establish new contexts within its instance of being read, rather than encrypt and *fossilise* articulated knowledge in writing. I get at a type of writing that meets the objective of ‘knowledge mobilisation’ but in a manner that is transgressively producing knowledge through demonstration

not by *decontextualisation*,
dissection or
description.

Why is entire lower floor of the National Museum of the American Indian (NYC) empty?

(ANSWERS ON A POSTCARD PLEASE; SEND AS MESSAGE IN A BOTTLE. WINNERS ANNOUNCED EVENTUALLY.)

It lives and resides within those who live it.
 Indigenous life is living, not stagnant, not museal, achievable or mute.
 The entity of the lower floor is a dedicated indigenous performance space.

Global Pillage and *The Guilty Feminist* are international, award-winning podcasts by Deborah Frances-White. [96]

3.3.1 Breakdown and Itemisation

Title: ‘Analysis, Design, Testing, Implementation; 4:53’

The title reflects the four stages of the *systems development life cycle* (SDLC) in software engineering (*Analysis, Design, Testing and Implementation*). The work of Zhang et al. [326] explores the the scope of this SDLC model and where it is deployed in organisations. Their work concludes that the method is often only used at the latest stages of any project and often limited to UI^[z] matters. I made use of this model as topology through which I recount our investigation. It further strengthens my effort to weave together HCI and dance and blur the boundary between the two. SDLCs form the backbone of many software development projects, yet “in many systems development approaches including the recent ones, HCI issues and concerns, if ever covered, are not considered systematically” [326, p.516]. Thus, often a gap exists between satisfying organisational needs and supporting and enriching human end-users.

ANALYSIS The first part is us studying each other when engaging with computers. It was as much an exercise in trying to be mindful of our own movements and choreography sensuality, embodiment of being in a relationship with the the computer and the digital landscape behind it. The means through which we project ourselves into the software is our sensuality and the touch-interfaces of the keyboard and the track-pad. Framed like this, ‘software’ disappears; software vanishes in such a phenomenological-somatic interpretation of the computer-human encounter. Instead *sight, sound, mouse, track-pad* and *the body* were emphasised in this experiment. Whilst each actant involved in the interaction merits their own narrative of their account of human-computer encounters, we focused on the stories that our bodies could tell; and therein the encounter of fingers and keyboards. How much (and what kind of) knowledge can be produced by a fully immersive embodied focus on these instances when humans and computers encounter and recognise another?

^[z]User Interface.

DESIGN What does it mean to be typed on? What does it mean to be typing? What takes place when typing occurs? - What happens when the event of typing is no longer framed as a subject/object causal event; but as an ongoing bodily practice in which both agents participate in on an equal footing?^[aa]

The event exposed us to the very literal question on how to create empathy with a non-human mundane artefact of our daily routine and de-familiarise each other as to re-connect and re-ignite and re-sensitise our perceptions and thinking. So, how *can* one empathise with the material-semiotic entity that is a computer? How *can* we shift our phenomenological perspective to open up new topological vantage points for new stories and non-human taxonomies? It is this challenge that the notion stems from to cross the boundary of human-computer via the means of a *somatic practice* and *dance*. It is the pursuit of this question that sparked the ideation and catalysed the need of Hamish's transformation into a computer (respectively a part thereof).

Fully aware of how far we are stretching the norms and patience of HCI researchers, but also invigorated with much new food for thought, it became clear that the process taught us much about touch and my/our^[ab] premise of interacting with keyboards. Typing is indubitably a very intimate encounter; yet ironically, the conditions and regime of intimacy happens on *my* terms (as user of technology). Employing a vision of equitable mutual respect and recognition of man and machine revealed a blatant mismatch in power and agency in the act of typing and touching, as perceived by the computer. Keyboards and computers have very little say in when and how they want to be touched or not - .

The degree of awkwardness - painting on Hamish's skin (naturally with his consent) - was a bewilderingly enriching and sensitising event that was nothing short of being an eye-opening experience, as it helped me to think about my own companion-technologies differently. It mandated me to become more compassionate with my surrounding technologies. It also empowered me with a sense to be able to demand respect as also fully actualised consciousness in human-computer encounters. Mutual misunderstandings (between device and myself) that stem from the *leakiness* and humanness of my body is not a fault of mine 'faulty user', 'source of error' and 'illiterate' [248, 280, 120, 175]. Instead *we* are in this together. We are in this together and this togetherness is a powerful premise for participatory accounts and ethnographies that respect this *sameness*.

^[aa]The next chapter (Ch.4) will challenge this duality and replace it with a practice-centred epistemology where actors *become vanished* through the employment of a process-centred epistemology. This undermining of the key premise of this current chapter is intended to open up *even more* space for new queries further exploring the limits of the perceptible and utterable in human-computer encounters.

^[ab]Here referring to "us" as those who engage in HCI research, in the sense that kind of work striving to be published in CHI.

TESTING As the textual performance documents, much of underlying intellectual architecture of the work assumed (and celebrated) a dichotomy of man and machine; of human and computer. The explicit aim is to appreciate both participants in human-computer interaction as actors/agents on an eye-to-eye level. Both, the human and the computer become imbued with a body as well as a consciousness. It is thus a performative critique of HCI and its heritage of framing "the human as source of error". It is also drawing on a rejection of the common *anatomical hierarchisation* of computers which emphasises the status of the harddrive as centre of the computer (and therein the processor as centre of the centre) whilst other essential tools such as monitors, keyboards, mice and speakers are customarily referred to as *peripherals*. Simply by using a phenomenological premise retelling our impressions and observations criticises these biases and unequal distribution of attention and *imagines* a HCI that is inclusive of epistemologies and narratives that go beyond quantification - be this the assessment of technology through quantified parameters; or the transformation of humans into 'users' or 'customers'.

Thus the *test* is an experiment in which *new* and *better stories* can unfold if *sameness* is practised.

IMPLEMENTATION Here sameness to us engenders a form of Drag. Drawing on the work of Merchant, as hinted in the account-text (i.e. the poem), we undermined the binary and hierarchical narratives woven into technology and human-computer interactions. Our work seeks to mock these classifications. Drawing on drag art, we imitate and exaggerate human traits in computers in an effort to draw attention to the shortcomings that commonplace classifications ensue; if they remain unchallenged and yet widely circulated. Just like in drag – we mock and subvert binaries, play *dress-up* with paint as a form of make-up or painting; the body as a relative of sculpture, and dance as a catalyst for a traversing of categories alongside *and across* material trajectories.

Provocatively we claim that Hamish becomes a crossdresser who meanders from the realm of the human side into the state of being a computer (respectively a part thereof). Reflecting back on this, I am much reminded of shamanic practises where the spiritual healer is a queer, unbound individual who is able to freely transgress the boundary between the human and the spirit world. I am put back into my past work with indigenous elders and how rehearsed specific movements, inherited over generations, shift ownership of property across generations; acts that cannot make sense outside of their local context and to outsiders. Such acts are not yours to take, to use, to understand.

3.3.2 The Somatic Method

This section discusses ‘what touch can teach us’, when drawing on the literature of somatics, *alongside* an agenda of HCI. It is the first step towards developing a *non-representational somatic method* for research. The formulation of this method is an endeavour which will progress over the course of the 3 intervention chapters of this thesis. A reader, focused on this aspect of my work may also read all 3 *somatic method* sections (Ch.3, Section 3, Ch.4, Section 3, Ch.5 Section 3) sequentially to focus on this aspect of my work.

But I want to see things as having one more disposition. That is, the way in which the human body interacts with other things. I do not want to count the body as separate from the thing world. [...] [T]he human body is what it is because of its unparalleled ability to co-evolve with things, taking them in and adding them to different parts of the biological body [...]. The human body is a tool-being.

Thrift [276, p.10]

Bodies are our silent companions throughout our being-in-the-world. We take them for granted and unless they force themselves into our consciousness - *through illness, tiredness, drugs, pain, or giving birth (to name just a few)* - bodies are prone to being ignored. With respect to questions of the body, Western philosophical writing foremost engages itself with epistemological and political readings of the body, but the-body-in-its-own-right remains largely silent.

Foucault stresses the discursive constitution of the body [154]: “[T]he body is [...] produced within discursivity, then so is it thereby rendered as a materiality” [58, 84, p.116]. Thus Foucault acknowledges the importance of *reading the literal body* as a means to make political exertions of power visible. In this sense bodies possess a central role in Foucault’s accounts of power *flowings* and institutional exertion and circulation of power. Therein bodies mirror and extend knowledge-power through which institutions impose compliance and (re)produce dociling.

Bodies then become a site for punishment, normalisation, dociling and embodiment of a system’s rules. The body’s movement, experiences and usage then reflects these internalised sets of norms and values which have become internalised; rehearsed and trained until they become subconscious and second nature [84, 99, 240]. As Barbara Kruger put it: “Your body is a battleground” [163, *silkscreen print* (1989)] – it is the site on which contestation takes place,

yet it is not a contestant itself.

Whilst this contextual reading of *the body* is undoubtedly important and revelatory, it causes a key oversight: Foucault's political reading of the body interprets *the body* as semiotic actor or semiotic subject; as site for politics; but the literal and visceral experiential dimensions *embodiment* possesses vanishes in his work. Foucault's writing on punishment as well as his work on sexuality opens up discourse on the sensuality of the body; but only in so far as it enables him (and us) to read the socio-political implications of bodily practises, desires and normalisation.

Also Butler, hooks, Said, queer scholars, activists and writers form part of the canon of philosophers engaging with the ways bodies are subject and object of politics (Butler [49], Said [237], hooks [137], Smith [254]) and whilst their work certainly politicises *the body*, it falls short of approaching an actual visceral exploration of embodiment. In their writing, *the Black body* and *the female body* are understood as political triggers, but not grounded as material entities; the emphasis rests much more with how these bodies are made sense of as semiotic signifiers in the context of a hetero-patriarchal and colonial environment. Bodies, their usage, their normalisation, expectations and 'unruly usage' are sites of manifestation of an enacted hegemonical discourse of normalisation and oppression. But *the body as such* (in the sense of being a sentient, material, phenomenological entity) is only tangentially touched upon.

(I read that for Foucault 'politics' occurs in *between* bodies,
but not *within* them.)

The deconstruction of race, gender and disability as enacted social constructs aimed to undermine material differences amongst individuals, but implicitly turned this type of feminism and critical theory away from the body as a sentient material-semiotic actor^[ac] [113, 119, 125]. Intersectionality as response to critiques by third wave feminist writers [140] remains in arguments where bodily affordances are of secondary importance and the emphasis is placed on the surrounding environment and its politics. Meanwhile anti-abelist writing has a strong history of acknowledging the body as a material, enabling and limiting variable, going beyond the emphasis of their signifying affordances (an example being the blind philosopher Martin Milligan commenting on his body-given abilities and how they may and where they may-not shape his epistemic abilities) [183].

Longhurst's work on the body-in-public is an exception to this and accounts of Queer bodies and their collisions with materialised and enacted patriarchy in spaces is in the process of becoming a field of rapid development [174]. Investigators of such 'fringe bodies' use this corpus-centred writing to sense political powers at play and how they influence and steer and

^[ac]In the sense of „something good to think with“ [289] as e.g. Hayward [130] demonstrates it in her study of the cup coral *Balanophyllia elegans*.

dictate certain practises; but *somatic* elements remain largely mute. Bodies are thought about, but not allowed to speak. Somatic approaches break with this and focus on the author of the movement and their in-situ mindscape, body-scape and sense of movement and enacted reasoning. Somatic accounts thus refute the Cartesian mind-body duality, and ensuing dualist worldviews; *somatic's* body-centred topology lifts these boundaries and enables new ways of knowing.

Compared with the the work of Thomas Hanna and *the somatic tradition* Hanna [112, 110, 111], Foucault's work (and much of the work produced by those who draw on him) on the body keeps its sensual and proprioceptive/kinesthetic^[ad] dimension silenced (Shaw [247], Shusterman [251]).

Hence my conclusion that: Bodies *in their own right* have rarely been given a voice. Accounts of somatic experiences (that is those that draw on one's proprioceptions and affective, visceral experiences) remain largely mute, unacknowledged and neglected (cf. [247], Shusterman [251]). Posture, mobility, capacity etc. are reduced to their *discursive dimension*. "[Bodies] are appropriate vehicles for capturing the perceptual distinctions which have impressed themselves upon the individual or group" [92, p.135-136], [289]. Bodies are profoundly diverse, but understanding which classifications are used to make sense of this diversity (e.g. gender; ethnicity; ability; shape; age; provenance - etc.) makes regimes of social categorisation explicit; respectively makes the impact of these classifications tangible, which are otherwise hard to sense, subconscious, concealed or repressed.

I stress again that such work is profoundly important and valid; it nonetheless is only a fraction of *the things the body can tell us*. Yet, thinking and working with *the visceral* is a substantial challenge, particularly in the context of an academic practice^[ae].

The somatic method is one in which the central scope is the observation of ones' own body from within. Not as spectator or in a dialectic with an outsider but through a body-materially reflexive scrutiny. Somatic practitioners aim to develop a habit of on-going bodily awareness [38] at a bio-mechanical and cognitive-sensorial level. After Thomas Hanna, gaining bodily awareness is an enabler for the potentiality of change in movement and artistic expression and perception (Hanna [112] in [76]). Such a *somatic method* acknowledges

^[ad] "[T]he sense of position and movement of our limbs" [227, p.545] and body as well as sense of balance and equilibrium [314], but also perceptions of gauging one's own "muscle force and effort" [267, p.1143]. It is the sense of bodily self-awareness. I will use the terms 'proprioceptive' and 'kinesthetic' interchangeably in this thesis.

^[ae] In particular I am referring to questions on 'what counts as evidence' given the profoundly individualistic and situatedness and entangledness of embodied experience; as well as how to document and *mobilise* embodied experience and embodied knowledge through the written medium in a fashion that is sanctionable in the academic circus. I had profound and meaningful conversations on this in particular with Dr. Natasha Tanna [263–266]. In particular her advice to turn towards the work by Kamunge et al. [152] in [149] was deeply transformative.

the whole body with all its perceiving and perceivable affordances via the environment it is engaged with. The focus on becoming conscious of one's experienced sensations of both *self* and *being* exclude notions of perception by others or performance for an audience. In a somatic practice the sole audience of one's movements is oneself. Semiotic readings or political interpretations are not part of the practitioners' sensitive appraisal of oneself. *Such somatic studies* are a study of *dwelling* in the Heideggerian sense; a type of pre-verbal intuitive reflection on one's practise of dwelling. The way of dwelling is embodied thought, movement is a form of cognition and hence changes in what the body is and can do which inherently affects one's psycho-somatic fingerprint, i.e. one's sensory apparatus.

Communicating such impressions posits the need to engage in new ways of writing; as the key tenet of somatics is the fostering of awareness and listening to one's body. This intervention experiments with the first steps of how such a writing can look; and how both - the need for *maintaining motion* in the text - as well as remaining *legible* to a reader - can be brought into harmony.

Somatic accounts can be literal attempts to write movement and the sensual experience of the moments and being-in-a-body as a form of being-in-the-world. Visceral experiences and tactility of one's own body and the sensory and cognitive perception of one's environment become part and parcel of somatic writing and thinking. Discursive/performative understandings of *the body* focus on the political and semiotic meaning of movements that may be deconstructed and scrutinised for its intended, unintended and anxious performances; somatic bodies are distinctly un-semiotic. These bodies want to be understood as pre-verbal and affective entities which thus oppose *being formulated*.

3.4 Summary, Conclusion, Outlook

3.4.1 Summary

The ongoing emergence, respectively *the mere existence* of digital technologies has tremendous effects on the premises of human (inter)actions and social life. In my classes I talk about Apple's habit of slowly releasing whispered knowledge of impending new devices. The mere imagination of these non-artefacts (or better: not-yet-artefacts) *changes things*. These imagined-things change everyone's existing relationships with one's *then* companion-artefacts. Merely utterances of a next-generation-model changes app programming habits, rearranges socio-material hierarchies and affects affect like status and desire. Even in regimes of absence of access to digital infrastructures, the lack of a possibility of engagement affects the disenfranchised member(s): The inability to attain a certain artefact is also a form of

social relation. Technologies and devices have affective dimensions. Their presence (or absence) exude ideas, hopes and promises; fears, daunt, anxiety and defiance. Vaccines, the newest apple iPhone, 5G, the nuclear bomb; their impact is as much a technological one, as it is a techno-social one, as it is an affective one. ^[af]

So, how are increasingly ubiquitously digitally mediated encounters changing in the way *dwelling* takes place? What are the traces that *the digital* leaves in everydayness and embodiment that are overlooked in political, semiotic and representational genealogies? My work in this chapter frames the world as potentially *legible* as a somatic-phenomenologic phenomenon. I asked what new questions and figurations of inquiry such a somatic method may bring forward? What could a marrying of linear, somatic and more-than-rational reasoning offer to audiences that are conventionally more prone to pursue *realpolitische*^[ag] avenues of research. My case is that *the knowing body* offers ways of knowing, worth knowing about. Such a body somatic body-apparatus in research “moves with the possibility of a secret that you know without necessarily knowing in the common way of knowing, towards undercommon ways of cawing” [185, p.2].

What are these undercommon ways of cawing, the sounds lost, left behind, not only unaddressed but unregistered, in the systems of power/knowledge we call academia? What cannot be heard? What cannot be listened to? And what are the stakes of the performance of knowledge that plays out in the name of the “norm” that upholds what is too often generalized around the concept of “quality” or “rigor”?

Manning [185, p.2]

This chapter documents my first attempt at using non-representational methods to explore *the digital*. Given that the use of non-representational strategies to empirically explore *the digital* has little precedent, this chapter accounts for my journey and how I approached the subject. Nonetheless, other disciplines (as I outline in the section on *dance* as a research method in cancer biology) take *dance as research method* seriously^[ah]. My contribution therefore responds to this perceived gap in the literature where I sought to use

- *dance as a method*,
- in the discipline of *STS*,
- to explore *the digital*.

^[af]See also the literatures on the sociology of expectations such as the widely cited [31].

^[ag]“Real world politics”

^[ah]Admittedly, this is not commonplace, precedent for this exists.

I did this not through an open-ended creative process, but instead through an experiment *of* method. This means that I did not ("merely") produce a dance performance on the subject of human-computer interaction; but instead, I employed *dance as a method* to pursue questions that otherwise fall into the remit of questions in HCI. This means that I engaged with much of the heritage and thinking of HCI (a discipline which surrounded me universally in my faculty and department). This methodological transposition enabled (or better: enforced) new modes of narration; new perspectives and attention to new relationships and - merely through enabling new modes of *telling stories* implicitly makes shortcomings of conventional HCI work clear (more on this in Ch.4).

3.4.2 Conclusion

A key challenge that this chapter sought to address is to resolve the issue of '*trying to make a dance performance mobile*' - i.e. accessible to a reader of a thesis, who was not present for the process. Given the profound emphasis on sensuality, temporality, emotion, impression and embodiment play when *using dance as a method* - accounting for my experiment became a profound challenge. Through pushing the limits of HCI, doctoral thesis writing and text itself, I propose an example of a type of writing that is transgressing the conventional boundaries of text and - purposefully - pushing the limits of author-reader dynamics. Finally, retrospectively thinking about "what has happened in this experiment" I begin to propose some outlines of "what this somatic method might have been" - and I have externalised some first theoretical groundings, aspirations, speculations and potential innovations this proposed *somatic method* could contribute to STS and phenomenology (and HCI). The development of this *somatic method* will be furthered and strengthened iteratively in every subsequent *intervention* to reflect the *ongoingness* and evolution of my non-representational experiments *on the digital*.

3.4.3 Outlook

Movement is hard to write, the body is hard to write, theses are hard to write, and - the type of calm, sedate, distanced, neutral, detached and disengaged type of writing that we associate with *quality academic writing* deeply privileges certain biographies, certain knowledges, certain communities. Yet, these conventions and traditions are politico-aesthetic gatekeepers and maleficent curators in their own right. This chapter resists these processes of normalisation.

Through the method of art, the need for reconciliation, the desire to stay faithful to the experience and to advance the discipline which I call my home, I am drawing on music, on

touch, on that which is ephemeral, my artwork, poetry, indigenous writing and memory with the intent to make the underlying logic of my creative method for HCI understandable.

Chapter 4

tamenetsi movetur ____

a keyboard with just one more key

I stated that STS - to me - is the discipline of *writing better stories* and *writing stories better*^[a]; I make the case that more-than-rational methods can produce knowledges that are beyond the reach of rational and linear reason^[b].

I want to start this chapter by making a case for this claim - I want to put my hypothesis to the test: Can (and has) my intervention put forward knowledge that otherwise would remain concealed? Does it catalyse ideas and thinking that *linear engagements* would have overlooked or ignored?

Upon reviewing my work; I want to focus on a minute aspect of a passage in the preceding chapter. Even less than a single idea; even less than a word; even less than the typesetting of columns which break down progressively forcing the reader's eyes to move increasingly more rapidly.

Instead I want to focus on a single glyph in the text. Drawing on the handwriting of Roland Barthes [21] and his *mythological* writing, I will think *with* this glyph. When composing the source text, I *knew* that I needed to use this symbol; and upon revisiting my text it stuck out.

¶

Advertising designer Martin Specker gets credited with inventing and designing the *interrobang* in 1962. In his article "*Making a New Point, Or How About That...*" [236] Specker introduced his new punctuation and suggests the name 'interrobang'. 'Bang' being typesetter slang for the 'exclamation mark', and 'interro' referring to the question-mark-ancestry of this new glyph. Ads of the time - to Specker - were often centred around asking

^[a]Ch.2

^[b]Ch.1

“excited” or “exclamatory questions”^[c] [ibid.], but either using only the ‘?’ or ‘?!’; one being misleading and the second one bothersome to the typesetting-obsessed Specker.

To me, a reader with a STS perspective, *it is the absence of this technology* that I want to dwell on. Encountering this elusive and dated symbol in the Ch.3 text, reminded me of my companion-query ‘*Who is missing?*’. What are *we* missing, by not having easy access to this technology; to have this glyph just beyond the reach of what is convenient and custom? What would change if we changed *that*?

Table 4.1 *The Interrobang*: Retrievable Beyond Convenience and Custom

Unicode Subset:	General punctuation
Unicode HEX:	U+203D
ASCII value:	8253
HTML:	8253;
CSS:	/203D
L ^A T _E X:	\textinterrobang

Table listing how to print the glyph in various code languages.

Question marks and *questions* incite and demand answers; command responses. Exclamations are expressions of certainty and possess a certain appellative nature. Full-stops conclude statements and halt ideas, and give the text rhythm, cadence - like a heartbeat. - Yet the range of human expressions is so much more diverse than those permitted by the punctuation that we are used to; than those that the buttons on my keyboard suggest to me.

A widely spread truism is that “*you can only see colours you can name*” [16, 324]. The ancient Greeks - they say - had no word for ‘blue’, and therefore saw no blue. Greek oceans shimmered bronze like metal, not blue, like *our* sky. What colours will the future hold? Which new words, and which more-than-words will soon enrich our thinking? More-than-words, like question-mark, full-stop and ‘!’.

What does this meagre punctuation-toolkit mean for our our ability to express ourselves textually? What does it mean for the possibilities (and limitations) of *reading*?

tamenetsi movetur ___

^[c]Example from Rosenberg [236]:“Got milk?!”

This expression is attributed to Galileo Galilei, anecdotally as a subversive exclamation after being forced by the Catholic church to retract his heretic postulation that *the Earth moves around the Sun*. After his avowal, which would spare his life, the court adjourned; Galileo leaves the building but just before exiting the door he would exclaim that fateful "*and yet it moves*" [131].

What was this utterance? A true expression of a factual certainty? (Would knowledge of a certain truth not be rewarding enough in itself?) Was it an effort of personal profiling? What was the true motivation for risking his life by re-mobilising his postulation then and there? Was it maybe intended as an interventionist provocation? Or an attempt to re-order the hierarchies of authority away from Church to Prince? Or a modest plea for (peer-)review and examination of his bold claim? In other words: what was his punctuation?

tamenetsi movetur !

tamenetsi movetur ?

tamenetsi movetur ?

"What's your pronoun?" is an utterance that we have become accustomed to making; maybe "*What's your punctuation?*" will be a future descendant of this?

The interrobang is the signpost of ambivalence. It occupies the integral from 'question' to 'exclamation'. Some questions are so powerful, their utterance alone suffices to change the flow of history; answers not even needed. This is what (*my*) STS and *the interrobang* have fundamentally in common. *We* inject cutting ambivalence, STS is the discipline that *deploys interrobangs* (no?).

The first step to "writing better stories" and "writing stories better" is to be able to think them, and that in turn is preceded imperatively by "asking the right questions". *Inventive methods* are concerned with the making the inutterable utterable [290], and STS - it seems to me - *observes against the grain*. And such a keen and sharp practice of *looking* is fundamentally concerned with *asking questions that are so powerful, that their utterance alone unsettles wide-held myths*. It brings back *ambivalence* into what-we-deem facts. In the presence of *the right STS*, in the presence of the interrobang

facts^(!) become facts^(.)

facts^(.) can become facts^(?) or facts[?] or maybe

facts^(?) or even facts[?].

The interrobang bestows us with the means to imbue *nuance* and *ambivalence* in an emancipatory way; as weapon(s) against coercive myths. However, whilst we rarely encounter an interrobang, it must not be deemed absent! The interrobang, *this embodiment of ambivalence* is in itself an ambivalent tool. In fact, the interrobang finds plenty of use, but most often it acts as a traitor, one who undermines emancipation.

Relativism is a widely-deployed strategy to sustain the *status quo*: Certain groups and certain people are haunted by their interrobang; and powerful actors can bestow it on to *us* and *our* statements. Such interrobangist techniques are widely deployed by custodians of grand-narratives and myths. Certain people, certain groups of people, certain statements are haunted by an invisible “?”. An “?” that *we* cannot get rid of. And whilst everyone of us gets subjected to this on occasion, interrobangs are unequally distributed. *Inside and outside of courts* statements get judged on a daily basis. The ? is invisible, but it is not absent. Powerful agents can bestow it on to *others*. Onto me.

The interrobang and STS are both tools of ambivalence. Through the interrobang, through STS, through ambivalence, texts become enlivened; begin to mimic some of the affordances of spoken language, and the richness and complexity of human-to-human interaction. My *queer* and ambivalent writing attains resilience against *decontextualisation* and *inadvertent appropriation*..? Textual inert ambivalence inoculates *resistant writing* against dissection: If a text is tied up in itself and bound into its context, it deters thoughtless appropriation. Such text begins to work like *speech*, it becomes *grounded*. Interrobangs thus are a powerful and subtle technology: a mimicking of speech, and voice, recalling inflection, implying gestures, forcing facial expression such as squinting. *Straight ink* undermines speech, and this becomes aggravated if we remain limited to ‘full stop’, ‘question mark’ and ‘exclamation’.

As far as the history of typesetting goes, it seems that the interrobang is merely a footnote in the annals of human writing. It is absent from the canon of the customary repertoire of what our keyboards are equipped with; it is *archived far away* in some stuffy hidden corner of a subset in some Unicodes. *Its missing* however provokes a question in its own right: How would the world look different; how would the social-media-scape *be* different if we were equipped with this technology? Would we be more able to counter-parry and riposte "fake news" and false-*fake-news*-claims? How would we write/communicate/argue differently, if we had *an* interrobang to type with; *an* interrobang to think with? If only a single finger-stroke could make such utterances possible.

An interrobang available to enrich thinking; to write thinking; to do justice to the nuances of the lived world. A tool to celebrate the full range of human expressions, even in written text;

the present would look different ?

4.1 Background

The difference between deduction and induction is at the heart of a lot of debate about the ‘best’ way to do research, and is often closely linked in this debate to the relative merits of quantitative and qualitative approaches (although either strategy can be used with either approach).

Newing [213, p.27]

4.1.1 Allied literature: Walker’s ‘Sustainability by Design’

Origins: 2009 Walker begins to mention the term ‘propositional object’ in his work from 2009 when he engaged in an in-depth object-led reflection of the Japanese Shakuhachi flute. Walker identified and compared the values this object contains with those from our/his daily environment. The tools and artefacts that surround us embody our values and by being present in our physical proximity they in return shape our actions. Walker thus interpreted the Shakuhachi as a thinking aid to “provide a basis for reassessing our priorities and developing design approaches that [...] have not figured prominently in [...] education or professional practise [89, p.3 & 118]” [291, p.132]. Through reflection on the contrast in materials, purpose, values, usage etc. enabled him to make deductions and revelations about the unconscious and subconscious values of contemporary, global, material culture.

Abductive reasoning Walker identifies such engagement with objects as a distinctly new and design-idiosyncratic way of knowing. It is a *third way* aside of deductive or inductive reasoning; where - to Walker - *deductive* is linked to the scientific method (such as *measuring*, *testing* and *objectivity-focussed research*) and *inductive* refers to qualitative research in the interpretative tradition. These two types of research - in their own ways - *strive towards decontextualised objectivity*. Whilst those two approaches might strongly disagree about the definitions of *objectivity* and *what makes good research* - they are both rational and linear engagements.

Walker’s *third way* is *abductive reasoning*: which he describes as follows [298, p.2]:

It is concerned with meaning, intuition, silence, reflection, localization, harmony, nature and time. It is a kind of design that reveals and critiques, reintegrates and replenishes. And it is a kind of design that releases us, at least temporarily, from the intrusions, pressures, hype, noise and busyness of our connected, preoccupied lives.

That means through the engagement of objects, reflection, imagination and ‘inspired’ knowledge, *knowing* becomes catalysed. At first Walker uses *encountered objects* such as the Shaku-hatchi - but subsequently he begins to produce such *objects to think with*, to catalyse such thinking.

For Walker, the process of designing is a process where “the designer seeks to apply general, abstract ideas in the process of developing specific defined artefacts” [294, p.1]. It is thus a process of elicitation of ideas from *the generic* to the *specific*: i.e. from decontextualised abstract knowledge to contextualised and *bound forms of embodied and spiritual forms of knowing*. This process is iterative as this elicitation is a process with a dual function. On one hand, the process of *designing* transforms *abstract information, ideas and theory* into a single tangible artefact; on the other hand however, this artefact in turn can reveal unconscious knowledge and interpretations that have led to its inception. “Theoretical ideas inform the design of an artefact and, in turn, contemplation of the artefact can advance the development of ideas” [ibid.].

The designed object, unlike an authored text, does not represent or re-express the prior knowledge, but it is *an abduction* of it. There is no direct linear, unidirectional or causal relationship between *the propositional object* and *the knowledge-context it emerges from*; it is a relational-iterative negotiation. Academic knowledge can be gained from an assessment of the object, its emerging context and their dynamic interplay and the individual observer’s interpretations. These objects cannot only be successfully mined for meaning [123], they are meaning in their own right. The sum of the knowledge is produced through abduction, or its material-semiotic politics. Therefore the knowledge does not emerge *out of the object* in a *post-hoc*, post-deployment manner, its material knowing is greater than the sum of all of these.

From Observation to Creation

Designing as a practice is the central *modus operandi* “to articulate and develop the ideas through the language of design itself” [294, p.1]. This *language of design* is thus the attempt to mobilise knowledge *through a discrete singular vehicle* such as a text or object; but it is an avowal of the tacit nature of knowledge-as-lived-engagement. It is a practice of material engagements and creative *making* as quintessentially *on par* as processes of rationalisation, processing of information, articulation of ideas, re-interpreting the issue at hand; in very much the same way abductive and deductive research do. But *the language and methods of design* achieve this through a creative object-led iterative process.

“Arguments and artefacts” [294, p.2] engage in relations and politics with each other. These can be amplifying, “overlapping” [ibid.] i.e. buttressing each other, or do the oppo-

site^[d]. Friction/clashing/juxtaposition too can be strategies of idea-elicitation. “[D]ifference, too, can be useful and instructive” [294, p.2]. Friction and tension can spark ideas, generate engagement and thus function successfully as *embodied thought*. “[E]ven if this is by disagreeing with some of the views presented [...]; dissonance is often an effective catalyst for action and change.” [294, p.2]

There is a distinct emphasis of subjectivity when engaging in this mode of exploration. In this sense Walker sees himself strongly related to the phenomenological literature, and its framework that can treat the subjective inner life and material outer-life on eye-to-eye levels.

[T]he ideas and propositional designs are not only based on rational argument and the logical development of an area of interest. They are also the result of informed, personal consideration, introspection and reflection; lived experiences; direct awareness through the design process; and intuitive decision making.

Walker [294, p.4]

This way of working enables putting to use intuitive knowledges such as tacit knowledge, subconscious knowing, insights-emergent-though-context, pre-articulation, local expertise, context-awareness, coincidence, emotional intelligence - and all other forms of wisdom that shape research but go usually unacknowledged.

Aesthetics, Form and Function

I want to draw particular attention to the idea of the “aesthetic topology” by Walker [294, p.136]. First off, I want to stress that *aesthetic* should not be equated to *pleasant* or *beautiful*. It should rather be read as *appropriate*, *matching* and *in harmony with...* It thus refers to the *visual expression* of the propositional object; and the relationship it bares with regards to the designer’s intended meaning [295]. The aesthetic dimension thus is a central aspect of the rhetoric of the object.

During the process of inception the designer is concerned with questions of ‘which materials inspire *me* more’; what textures, haptics, sensations do I want my object to possess and to convey? (And which ones not ?) How will I curate my artefact? Which material context is needed and possible to enable its full discursive powers of argumentation? Why am I drawn to certain techniques/patterns/raw materials over others? - These questions are considered either explicitly or intuitively and can be posed during the inception as well as through post-hoc rationalisations.

“Form follows meaning”

^[d]*and* do the opposite

Walker [292, p.337].^[e]

Pre-verbal decision making and intuition can be used as well as the systematic analytical design toolbox (e.g. *pattern language* [3], *interaction design patterns* [165], *software design patterns* [91])^[f].

‘*What I am drawn to*’ becomes a key elicitation tool, as *aesthetic intuition* results in the elicitation of pre-verbal knowledge. Instinct, intuition, *the subconscious*, affect, emotion and coincidence seldom find a place in research accounts; not least because they are hard to grasp. Post-hoc (whether in design or conventional research) narratives become linear and *Whiggish*^[g]. Walker gives us scope to revise these erasures. The permission to acknowledge these intuitive decisions is exciting because these decisions possess a certain *proto-rational* type of knowledge that is hard to sense in other types of research. Propositional objects can be merely symbolic or be usable according to their designated purpose (and on occasion both) - but *practicality* is not an aim. Much more important is that *propositional objects* should strive to be “stripped of conventional notions of ‘good’ design and the usual expectations of industrial design” [294, p.136]. They should not be “objects of desire” [294, p.137] but rather “unadorned” [ibid.] and focused on consciously aligning aesthetic, symbolic and semiotic content. Aside from the designer, observers (or *interpreters* or *readers*) of these objects can also use them to generate knowledge. They can either seek to re-trace the designer’s intended and embedded meaning or strive to actively re-interpret the object in new sovereign ways. Walker calls this “considered looking” and it “enables the viewer to thoroughly see the design and reflect upon it” [294, p.192]. This includes taking into account the impact of the context in which the object is placed; the politics of curation and categorisation; the “rhetoric of object placement” [ibid.].

Consequences for Design (?) Walker’s choice to expressively claim the label *design* for this type of activity, is a far-reaching act: he gnaws at the foundations of the self-conceptions of Design.

[I]f the kinds of problems that design deals with are divergent and inherently unsolvable, then it would seem that we have been looking at its purpose and contribution from the wrong angle. Instead of seeing it as a problem-solving activity, we should be seeing it as a question-raising activity. Design outcomes should be regarded not as solutions but more properly as questions that ask us to consider the appropriateness of a particular synthesis of ideas.

^[e]A reference to the Bauhaus motto “form follows function”.

^[f]“Buchanan sees such design propositions as ‘vehicles of argument and persuasion about the desirable qualities of private and public life’, which he calls the ‘rhetoric of products’ [297, p.33] .” Walker [293, p.357]

^[g]See also Butterfield [50] resp. Mayr [188] and critiques against *historiographical post-fact determinism*.

Walker [293, p.357]

Walker, with this postulation, criticises a central practise of design. Rather than being brief-oriented or stakeholder-oriented, Walker foregrounds the designer's need to address "inherently unsolvable" [ibid.] problems. So far, in my recapitulation I have excluded the central reason for his work. Walker, with his method, seeks to bring attention and urgency to *wicked problems* that are too-big-to-handle in everyday mundane design. Rather than being steered by commercial objectives and *desirability*, a 'propositional design practise' - he postulates - will lead to slower, careful, and *more meaningful* designs. Whilst propositional objects are distinctly intended to resist reproduction; 'their offspring' may adopt affordances that render such products *more sustainable*. Through *propositional awareness* a new hallmark of *good design* emerges:

Appropriateness.

"Moreover, if design asks us to consider appropriateness, we are unavoidably faced with questions that encompass values and priorities."

Walker [293, p.357]

The pursuit of such an approach is inherently a highly risky endeavour. Walker is fully open about the uncertainties that are inherent to this "essentially creativity-based, research-through-design approach. It is not predictable, cannot be planned for, and is not guaranteed" [292, p.335]. Yet, taking the abductive approach seriously in design and disciplines beyond could be "a turning point in the research, and in design insight and knowledge development" [ibid.]. My notes from my in-person encounters with Walker read:
"Creativity is inherently uncertain.

If you *knew* what you were doing,
you'd be doing what you know
- that is not creative."

I wonder what Walker would make of my work, if he'd agree, raise his eyebrows, wonder where I took his writings - or feel misunderstood (or misunderstands).

I won't ask him. I am not looking for sanction; but there *is* a heritage that I want to acknowledge; that formed my thinking - and for *that* I will remain grateful.

By engaging in the immersive, creative designing process and drawing on intuition, reflection, three-dimensional materiality etc., the designer begins to bring disparate ideas together and to synthesise conflicting directions. In

the process, as the designer struggles to make things real, insights, experience and tacit knowledge are acquired concerning expressive qualities, aesthetics, relationships, form and function etc. – and these can enrich and inform the theoretical directions and the theory itself. It becomes a two way, reciprocally reinforcing process in which theory-informs-designing and designing-informs-theory.

Walker [292, p.338]

8 August 2016

At 5:20 pm at the intersection of Ross street and East 9th Avenue, Tarentum in Pennsylvania, a car hit the high school girl Autumn Deiseroth. The child, who suffered from a collarbone injury, a foot injury and several cuts and bruises, was immediately hospitalised and soon after the accident was alive and - given the circumstances - well.

[302]

2016 August 8

whilst trying to cross the high-way on foot, the collision occurred. Autumn Deiseroth, a Pokémon appeared which the girl chased after and presumably didn't catch. Moments later, on her way back home, East 9th Avenue, Tarentum PA, on the phone held by high-schooler just before 5:20 pm close to the intersection of Ross street and

[302]

What to anticipate:

1 The previous chapter (Ch.3) made a case that the body and dance are a method of yielding questions, that “the rational” and “the linear” are blind to.

2 I made (and continue to make) the case that *dance* is a bodily method of inquiry. But so is *walking* - it is a type of dance. This way of walking^{günçün} is in the phenomenological tradition of “being in the landscape”.

3 But, not all bodies are the same. Disabled bodies, Black bodies, female bodies, Brown bodies, queer bodies “walk differently”, move differently, become coerced to move differently; notice differently, notice different things.

4 The spotlight on the second pandemic of 2020. The BLM protests. Their resistance.

The resistance towards/
/against/
the resistance/
./resilience/
The indifference. The obviousness. The pain.

I shall explain to you the principle of the double price of racism.

COVID - the great catalyst: A euphemism for racism. A source of damage. In me, in this thesis. In the thesis. In theses. In my thesis. In my walk. In my handwriting. In my mind. In my body. In your text.

5 The locative game of Pokémon /Ingress enables me to inter/_{ʃe.ŋu!} weave-in *the body* with *the digital*; that which enables *my walking body* to get a sense for *the digital* as part of the Global, a more-than-material landscape.

6 The phenomenological lens enables my body to entangle *the digital* and the *geographical* landscape. The phenomenological body produces *the digiscape*.

7 It is thus a bodily method in the phenomenological tradition.

8 Through my body I am not only *staying with the trouble* - I am/_{ʃu.uo:əq/} the trouble. My body, my *positionality* raises new questions in_{uo} the digital.

9 Such a new appreciation of the digital as *the digiscape* demands a new approach to ethics as to guide us through this new holistic approach to software (Ch.5).

10 I/_{əM} will take you/_{ʃe.ŋo ʃəə} on^{to} unchart_[er]ed ground.

New ground.

But without any claims of *discovery* or *ownership* but instead
an inward journey into ourselves.

11 And once we return, we fail to tell each other what we have experienced.
We will beautifully fail at that...

...and *fail*^p in the most interesting^s of ways^s.

4.1.2 *Bodying as Dasein, the location of the body and locating bodying*

Let us, for a moment, think of one's own body as an object in Walker's sense; an object that is good to think with: a propositional object. My body is not only the lens through which the different scapes are bundled into the experienced sensecape, it is the precondition of perception in the first place. A body in the phenomenological sense is not an actor but a process^{ing}.

The body's ability to transform (or generate) a message, renders this body-medium not just a neutral propagator, but it is de facto co-author as well as an analytical method in its own right. The new material turn acknowledges non-human actors as active participants in social life. It grapples with the difficulty to write such a multilayered account of socio-materially interwoven realities, and the buttressing politics of representation. What this chapter then becomes, is an attempt to consolidate my conclusions on object-aided thinking and a material-semiotic reading of the practise of writing-thinking. Writing, being, *bodying* have a common material foundation. The materially lived life, as condition for perception, rests at the intersection for any potential of meaning-making. When I place my body at the intersection of *propositional abductive reasoning* and *material-semiotic scholarship*, new avenues of meaning become *thinkable*.

Where does the body then reside, when *the digital* gets taken seriously as a material catalyst of meaning. As much as I sense the world and its becoming, I too am available for scrutiny by this world I am immersed in and am a part of. Perception (as the act of creating meaning) is mutual and therefore, when committed epistemo-sensory justice, — I am on par with my environment and my companion objects, actors and companion species. I am one amongst the others and *an_ other* amongst them, I am a peer and all of us are beings.

I want to dwell on the epistemic propositions of the geolocative game *Pokémon Go*. *The game* forces us to re-define the boundaries of what a game is and what it can be; the limits and materiality of *software*^[h], and the subsequent urgent need for a fundamental questioning of hardscapes and landscapes in the backdrop of ubiquitous digital stories, intangible cyber monuments and virtual culture. These digital artefacts do not fall short of other edifices, like cathedrals or spaces and sites of intangible heritage. There is much precedent for the serious immaterial sites of culture. Prime examples for this are sites of cultural importance by indigenous peoples. Ingold's phenomenological interpretations of arctic human-environment relationships become relevant at this stage. Ingold [143] (and by extension Merleau Ponty and therein Heidegger) describes a mutually conditional relationship of environment and individual, with either being conditional for the other. In the course of the 20th century, as a result of a deep interest in the notion, concept and consequences of 'landscape',

^[h]...something that traditionally is talked about in alluringly immaterial ways...

phenomenological investigators such as Merleau-Ponty [193, 251], developed approaches that are indeed very attentive to the body as sentient and semiotic entity. Through Merleau-Ponty's revision of landscape theory, he attributed increasing agency to the body as the site of perception and engagement: he frames the body as epistemological vehicle. In order to understand landscape, Merleau-Ponty concluded that it is increasingly necessary to study the body in this respect – how much of the landscape rests within the body and how much of the (sentient) body is conducive to the existence of landscape. He concludes that one only comes into existence by being in relation with the other. Landscape and body are not stable opposing entities that recognise each other, but exist through an on-going process of engagement(s). The body is not a body in an environment; - body and landscape are deceptive by-products of the performance of living [143]. Seeing and living are not separate activities but conditional on another; engagement and inhabiting of the environment is living; life is causally dependant on inhabiting an environment.

Being, or dwelling, is not a state, but a process; *being* is not a noun, but only ever a verb. In my case coming-into-being occurs through the engagement. Play then occurs when “we” sense another; as separate entities we remain meaningless. I only come into being as a function of my somatic interaction; when being mobile.

Recalling in this instance of inscription my deeds through the lens of the post-hoc, I commit to this phenomenology, as profoundly useful and powerful topological-theoretical *gambit*. The term gambit here, not a pejorative, but emancipatory medium of resolution and strategy of intellectual self-defence. Re-threading one's story and one's ecology through bodily and sensory topologies tells new stories. Bodily-somatic epistemologies are experiments of *dis*-assemblage. They should not negate or *overcome* politics, but make evident the entanglement of the *dwelling body* with the politics-at-large and articulate their elusive enactments. I assert that biography is no threat to good non-representation (cf. Thrift [276] which will be discussed in-depth in Ch.6.).

In the same sense of woman's experience of gender affecting their experience of the cyberscape, I and my fellow PoC companion players become translated differently than white players; become refracted in our game-environment-play experience. Seeking to identify the locus of where these different conjugations ^[i] of me are catalysed is not the aim of my work. Instead I am more drawn to another finding that became evident in the course of this experiment.

Heidegger furthers this argument and lays down some fundamental work on a phenomenological understanding of the body and the nature of perception. Merleau-Ponty and Heidegger's work challenge the Cartesian enlightened assumptions of an opposition of

^[i]I use the word 'conjugation' to suggest an analogy of how verbs are changed through the context in which they relate to other parts of grammatical sentences.

man and *nature*, in which case manifested as landscape and observer (- an echoing of the *res extensa* and *res cogitans*). Instead, they put forward the phenomenological process of “*bewohnen*” ^[j] [132, 320] .

Heidegger affirms that this human way of “building” is in fact “dwelling”. He developed his idea about dwelling as an accommodation between people and their surroundings. “Language suggested to him that dwelling involved somehow being at one with the world: peaceful, contented, liberating”

Sharr [245, p.41] in [279, p.612].

By *investigations on the intangible* I refer to studies that dedicate themselves to unpack that which is hard to perceive. Predecessor work in empirical NRT for example re-explores and unsettles the concept and definitions of ‘the night economy’ through the lens of bodily explorations and data-guided explorations [246]. Shaw investigates the complex interwoven network of subjectivities that occur in Newcastle’s *night-time economy* ecology. This ranges from night clubs, municipal cleaning services, gendered experiences of ‘going out’, legislation etc. His work confronts geographical theory with his practical experiences from the field. McCormack [190] investigates the different components that shape the experience of hospital visits and the significant impact these sojourns leave on visitors in high-stress situations.

More-than-humans have already been significantly influenced by our digital technologies. For example, sharks have attacked deep sea internet cables [...], squirrels have chewed through cables at data centres [...], and countless ecosystems have been contaminated throughout the life-cycle of electronics [...]. Furthermore, many animals have been known to lick human-centred designs—at times to the detriment of their health [...].

Brueggemann et al. [44]

Just like *the night-time economy*, the waiting rooms in hospitals too are complex social conglomerates, as well as material-semiotic conglomerates which together shape a visceral and uncanny set of experiences that are profoundly incongruent amongst different actors who share a single space. Family members, patients, people waiting, nurses, doctors and other staff, all contribute to the experiencing of hospitals and atmospheres and this network of experiences feeds back on itself to further create a mosaic of visceral experiences which is

^[j]In English generally translated to “dwelling” (cf. [64]).

distributed and shared and profoundly individual at the same time. My challenge to NRT is now a political one. How can we at once celebrate the contributions of *flat ontologies* whilst not letting them turn *colour-blind*^[k]?

I want to explicitly contribute an attention to race, queerness (in terms of LGBTQI2S+-queerness as well as other forms of queer identity), culture and religion as modalities through which the environment is experienced and through which one, *one's dwelling body* is made sense of. Hunger, tiredness, emotional constitution, past memories and ancestral trauma all contribute to the experience of a space. All these affective modalities affect the body, the cognitive and the social. They are all entangled in the shaping of the experiencing of a city.

Whilst I admire Thrift, Creswell, Lorimer, . . . and all the other distinguished male white British able-bodied, scholars for their thought provoking work in the Non-Representational, I no longer want to read *their* accounts of walking in the English country side. A theory that understands itself to be emancipatory and epistemologically inclusive, must then be-above-all centred on those who were and are excluded.

Creative methods can enable at least some perspectives of those who are not *here* amongst us in this room; — mobile, creative and nonrepresentational methods are not a substitute for diversification. They may be an important addition in the portfolio of feminist thinking, but not a substitute for the feminist cause. And it is not that I consider myself a *better* or more proficient writer than those named above, but I make my case that my bodily lens (and those with bodies unlike *them*) produces a very different kind of landscap^e_e^{ing}.

As my dear friend Dr Morag Rose [208, 233, 232, 204, 235, 234] writes:

My research focuses on gender, public space and pedestrian methodologies. I am currently conducting walking interviews with women who live, work or study in Manchester, exploring how they think, feel and experience the city. The pace, direction and subject of the interviews are set by the participants. My definition of walking includes sticks, wheels and other mobility aids and all women over 18 are welcome.

[k]“The ideology of color blind racism.” [29, p.25]

4.1.3 Ideation and reasoning underpinning the intervention

From Hamish's body to my *bodying*.

In the preceding Ch.3 I outlined the potential and working of *the body* as a problematising, generative medium to produce new avenues of inquiry. Such a *questioning* body can utter in a manner that language and words seem not to be able thus produced a new lens/method of enquiry. It is not that the body is an element that is outright ignored in the computing disciplines ; but its autonomy is only appreciated in very specific ways; and made sense of only through a very narrow lens. There is the field of ergonomics for example, dedicated to the shape of technologies and their bodily impact and *fit*.

Medical databases are distinct and critically sensitive repositories of information due to their distinct relationship with human health, bodily vulnerabilities and mortality. *Disaster informatics* [215, 164] too are - amongst many things - dedicated to ensuring that immediate needs are met (or restored as soon and effectively as possible). These too, in my approach, are a body-centred approach to innovating.

In comparison to the above-mentioned list of body-vs-technology-centred research, I claim a more literal and unmediated engagement as a lens through which I research. For me, *the body* is not just an object (or subject) of research, much rather - I think *my body* is a method. My work platforms the body as a generator of questions and as *problematizing* catalyst of knowledge(s). It is an active generator of *knowing*. I want to embark on this trajectory. I say *embark* rather than *continue* as for this chapter - I will use my own body as catalyst of knowing.

But none of these things are about "being in the digital" via my finger/mouse/keyboard. Instead I am wholly digital, with my full-body being completely immersed. What is *the digital* then - if it is not taking place on the screens; if I make an indirect argument about *the digital being misunderstood* by nothing short of one - but several disciplines at once? What is *my* digital which I seek to engage with?

Phenomenology as a theory to *get the body to speak*

Wylie even understands the body as a hermeneutic ^[1] vehicle to understand written text. In his article "A single day's worth of walking", Wylie described how his walking practice revealed to him the meaning of convoluted passages and metaphors in Deleuze's writing; the process of *being in the text* and *walking the landscape* become inextricably linked. As much as the text leaves its footprints in Wylie's mind-scape, the landscape leaves its echo in

^[1]My usage of the term *hermeneutic* refers to a way of making sens of the landscape; but through a conception of the landscape where ecology and my identity are in an ongoing process of becoming.

his body (in the shape of a blister). The blister - as an echo of the landscape, and an echo of frustrations of haggling with Deleuze's impenetrable writing - begins to teach Wylie the meaning of 'the fold' [319]. Wylie begins to understand the literal meaning of *being pressed against the landscape* and acknowledges the wisdom of the body, and the literal echo of the landscape that leaves its traces in/on his body and in his mind. Wylie [319] used his walking practice as a means to explore, understand and *experience* the academic literature on landscape and cultural geographies. *Walking as a practice* in this context is a means to understand and affectively experience theory and see the text leave traces on the material body.

The phenomenological body is not *a body in an environment*; this type of body is *of the environment*; and the environment - vice versa - is *of the body*. It is this rigorous and uncompromising commitment to acknowledgement of the body's sovereign ways of knowing that I strive to capitalise on in this chapter. This text, this method, this *being* must/should be considered in the same tradition. My research and my *bewohnen* are not separate activities that take place in isolation but must be understood to be inherently conditional to another.

My research and practice of thinking is a boundless commitment to a propositional practise of generating knowledge - in friction and in response with my environment; my knowing and my knowledge and my environment shape one another. And this thesis and this text is part of my environment, and thus inseparably part of me. There is no space for *data* in such a holistic commitment to the phenomenological premise of "dwelling-as-noticing". STS and HCI are well familiar with observations that are grounded in such approaches of "fractured lives" where *data* is elevated as superior information over of other knowledges, over *life as it is lived*. My commitment is to resist this sanitising, and therein is my interpretation *to stay with the trouble* - and stick to wherever my bodily knowing may lead me. As the course of this chapter progresses, the courses of the years 2016, 2017, 2020, 2021 will bring us to traumatic spaces - and beyond the limits of words, beyond what a single mind can endure without taking grave damage, beyond my own story and body, beyond the ability to experience doubt.

Walking is a type of dance. I practice my walks as type of somatic-phenomenological dance. I observe my movements, my hesitations, my preferences and where I am drawn to. My gait, my limitations, expectations experienced by me, and my movements account for the pressures and forces I am subjected to.

In this sense, I do not *walk*. I do not *walk* as in: *engaging in an active and sovereign practice of my own*. My walk instead is a reflection of my environment and ecology on me.

In many ways I draw on Morag's psychogeographic work but - my take on the topic is very much shaped through the lens of *somatic dance*.

My movements therefore are not merely movements of mine - they are kinetic manifestations of my environment, of the politics that normalise me, of the mindscape that I inhabit: and as I come to realise - 'the digital' which is evidently part of my ecology and a major sail that accelerates and steers my walks, but also a hindrance or even barrier to my practise. As much as it enables my walks, it equally so (in the same instance) conceals alternative journeys, deprives me of experiences and thwarts other encounters. My phenomenological dance-walk, is a being-in-process, a [S]ein-in-motion.

4.2 Account

So how on earth does one account for *dwelling*?

My BROWN WALKING-MOVING BODY as [M]ethod in Computing

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Black lives matter.

Don't all lives matter?

Yes - but *Black* lives matter!

But if all lives matter,
black lives matter.
Therefore all lives matter!

No! #*BlackLivesMatter*!

No. That's racist!

CCS Concepts: • **Human-centered computing** → **Interaction design theory, concepts and paradigms**; • **Applied computing** → **Law, social and behavioral sciences**.

Additional Key Words and Phrases: Anti-Racist Computing, Method, Embodiment, Restorative Justice, COVID-19, Insurgence, Phenomenology

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A GAME THE SIZE OF THE PLANET

The mere existence of the game *Pokémon Go* and how it operates does something quite transformative to our conception of human-computing relationships. The gameplay forces upon us some interesting new premises on how we interact with this specific piece of software as well as with(in) software as a whole. One's avatar [10] in softwares such as Excel or Word is the mouse cursor. Through the *totem* of the mouse, the user becomes projected onto the screen, monitor or 'right into the spreadsheet'. My use of the term *avatar* in this context alludes that this is a process of transportation comparable to massive multiplayer online games such as World Of Warcraft [2]. Yet, despite being alike, locative mobile phone games also profoundly change the human-computer relationship fundamentally.

Pokémon Go (when played) explicitly repositions us^{ers} out of an abstract *office space* back into the explicit and concrete physical life-world which we inhabit: Without my *moving* body, there is no game. Through such an embodied premise of interaction, the game brings (back) into consciousness the material organic human body that is conditional for the existence of the "user". *Software* and *user* thus are in an ongoing mutual process of *becoming*. The user becomes *digitized* and the software *landscaped*. *Play* only occurs when

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software and user "sense each other", when they are in a mutual moving engagement. As separate entities 'we' remain meaningless.

To the game, I only *come into being* as a function of a somatic (inter)action: My body becomes the nexus of game, *landscape*, *cyberscape*, '*Pokéscape*', and *cityscape*; *the moving body* is the condition and catalyst for the possibility of gaming. This framing of *perception through engagement*; and *engagement through the body* in philosophy is referred to as *phenomenology*.

Through the lens of phenomenology, *landscape*, *body*, *perception*, *gamescape*, *movement* and *device* melt into another. The landscape is a perceptible bodily phenomenon in the same way as the software, and my movements. All suddenly becomes entangled, and *the moving body* is the medium to explore software-at-large.

With *philosophy and phenomenology out of the way* I want to report now on what happens, when *the body*, when my body; my Brown, Queer, foreign body, of erased Indigenous ancestry speaks about its experiences of "software".

Knowing software *through* a walking body

Phenomenological accounts do away with clean categories of *human* and *computer* and the allusion that their *interaction* can conveniently and neatly be curated. The phenomenological body acknowledges nuances that terms such as *end users* and *user case* conceal. When taken seriously, *Pokémon Go* (et al.) force us to acknowledge the holistic personhood that makes up every user; every subject of any software or digital artefact. Whilst other digital artefacts may be less explicit about this, *Pokémon Go* leaves no more doubt: Merely through the existence of *the digital* everyone becomes subjected to it; becomes translated into *the digiscape* and inhabits a new type of landscape.

As I walk through the *cityscape*, *softwarescape*, *gamescape* the software and I get to know each other; and everyone around me enriches the *playscape* also. My body, my streets, my journey, my companions *become digitized phenomena* and thus part of the game. My moving body becomes re-instated as embodied and organic, material, somatic modality witnessing flow(s) and friction(s)

within,

besides,

and "on top"

of [the] software.

Taken literally, *Pokémon Go* is nothing less than *a game the size of the planet* - and the playing avatar in the game is *me* (or you).

Thinking with this game means letting the game take me on a walk; allowing each other to lead our walking, walking-thinking, game-thinking, being-thinking. *Pokémon Go* - in the most exciting ways - completely overthrows comfortable categories of enlightened binary (dialectic) reasoning. Instead *the game* - merely by existing - transforms the oppositional logic of HCI into an unstable and contestable space of fluid topologies in motion: When playing, game, body and gamer continuously are in a mutual process of *becoming*.

The power of phenomenology then is its ability to account for the impacts of software in a ‘grounded’ manner: grounded in this case meaning ‘firmly committed to a first-hand empiricism’: A commitment to *key-witness* accounts. It is a type of empiricism that is unlike the type of ‘evidence’ that conventionally gets acknowledged in computing research venues.

Whilst accounts of *moving bodies experiencing the landscape* are part and parcel of the long tradition of phenomenological writing in (predominantly British) *landscape geography*, I make a case that this method must be a much needed urgent addition to the methodological repertoire of HCI. Critics of *British landscape writing* decry the practice as privileged “Armchair Geography” (already in the 1970s¹) but I make the case that there is urgent need for this:

Whilst accounts by *those* who command bodies *deemed inoffensive in the landscape* may (on occasion rightly so) be deemed of limited value; I assert that:

in the hands of *unwanted, foreign, infra-human* [7], *communities*,
the ability to write the land/cyber/digi-scape as-it-is-perceived,
is a powerful tool
and a desperately needed [M]ethod for/of emancipation.

OTHERS’ WALKING

Representing motion and movement is an evidently challenging endeavour. I outline 2 explorations which have informed my thinking about walking-writing, *the subaltern body* and its movement’s representation.

Dr Morag Rose [11–13]

The wondering, mischievous, dis/abled, anarchoflâneuse Dr. Morag Rose, leader of the *Loiterers Resistance Movement (Manchester)*, engages in a psychogeographic practise of walking-as-reclaiming. [h]er feminist (research) method of walking-as-engagement with oneself as well as with *the city* queers the academic fracturisation of knowing-vs-being-vs-randomness-vs-city-vs-sociality-vs-body. *Assertively living* demands the appreciation that - for some biographies - *being-social-amongst-friends* is a life-affirming method of recognisance.

The outstanding Poet Neiel Israel

Neiel Israel is a second key contributor I seek to acknowledge as having left their traces in my thinking. Israel’s poem *When a Black Man Walks* reflects back on *the Black male body as object of racism*. Yet in her poem Israel stresses that *the walking Black male body* is an agent of resistance.

This poem is merely a tip of an unimaginably large iceberg of accounts of instances of racialized bodies becoming *object of interpretation and prejudice*, rather than *subjects entitled to agency*: **#walkingwhilstBlack**, **#drivingwhilstBlack**, **#studyingwhilstBlack**, **#shoppingwhilstBlack**, **#sleepingwhilstBlack**.

I dedicate this paper, my work and thinking to my peers who find themselves

#digitalwhilstBlack

- with all the baggage that entails.

¹MW. Mikesell. 1977. Cultural Geography. *Progr. in Hum. Geogr.* 1, 3 (10. 1977), 460–464.

When *I* was walking; I was not walking in isolation. It was very much a *networked* walk; a *distributed* walk; a *computer-supported-coopertative-walk*. I walk/سأمشي/سأمشي with those who have also walked whilst *being different*. My walk, their walk, is what I seek to share in this document. Our shared experience of *being mobile* and *walking whilst being misunderstood*. I seek to share the wisdom that resides within all subaltern bodies; the expertise that resides implicitly in *melanined* steps, the sagacity that every [Muslima]² knows who walked-whilst-covered through any space fraught with white assumptions.

But who would be daring and bold enough to try to approach *the digital* at such a ravaging level; Who would be so bold,

and speak about this *at CHI* of all places..?

The technology of *phenomenological reasoning* must be seen as part of this project. I tell my students that: [All] Innovation is at its most powerful and exciting when it is not a means to its own end, but when *progress* is put into *service* of a greater project of social justice and emancipation.

Whilst migrant, refugee, *unwanted*, unfitting and undesirable communities too often do not (yet) play their part in the *shaping* digital innovation, they are nonetheless very much a subject of technology. *Marginal, subaltern*, or merely ‘foreign’ accounts of the otheringness of technology are indictingly absent. These accounts (our accounts) demand a stake in *digiscaping*.

Occasionally, our voices are labelled as *extreme user(-cases)* [15]. I object and insist that refugees are not *extreme*. They are *us*, but find themselves in *extreme* circumstances [14]; they may *endure extreme events*; they may be subjected to *extreme deeds*; they are likely to become *extremely neglected* in the everyday practices of digital innovation.

OCKHAM’S TREASON

This section is dedicated to challenging the notion that:

“Critical Race Theory” (CRT) is [C]ritical.

CRT runs on the base postulation that the justice system is racist. I ask how this could be in any way framed to be a radical postulation? Be empirical then, observe:

The events of 2020 and the beginning of 2021 so far tell us much about the unequal treatment of bodies and the vastly different interpretations of their movements and where they are drawn to be; and where they find themselves injured, hurt, sick, dead or dying. The spreadsheets and moving images paint a clear picture of the consequences of systemic disenfranchisement. *Why does this not count as empirical evidence?* Where is positivism, objectivity and *evidence* in 2020? ~~I am under the impression~~, I have significant evidence to believe - that [E]vidence is a privilege not granted to *misplaced* communities. If objectivity is a privilege not bestowed to Black causes and their allies what remains then for us to speak from? Trayvon Martin’s crime was the wearing of a hoodie, the sanctioned sentence for such a transgression is immediate execution.

Albeit she never taught me, I consider her my teacher: Rosi Braidotti, removed the word ‘vulnerability’ from her vocabulary, as

²I intend to write this term in its original Arabic scrip. As for now, it seems that \LaTeX (or at the very least *this template*) is vehemently resistant to my many attempts to include any non-Latin lettering.

it is nothing but a euphemism for ‘of a life more expendable than others’. More mortal. *These* Black communities are not *vulnerable*. They are left to die. On all sides of the pond. Why is it then called “Critical Race Theory” and not ‘Empiricism’?

Where is Ockham’s Razor?

But in absence of a *right to objectivity* – we are left to feel. If infra-human reason, and infra-human accounts are deemed expendable – we are left to feel. Look at the Capitol. Look at the Capitols. How differently they manifest.

The literature talks much about *being othered* – but how can I *be* othered – if I am of the landscape, and the landscape is of me? Racism exists, and it seeps into me, constitutes me, shapes me – and whilst I keep on walking, nonetheless, I cannot walk away from this landscape. I am not *othered* – *the other* is in me. I cannot walk away from me.

For the sake of my sanity, and to thwart exhaustion, I do my upmost to think of myself as my own semiotic trigger, but the walking leaves no doubt: My body stands-in for more-than-me and others-than-me.

I am at once infra-human and simultaneously more-than-one. When I walk, as I walk, *we* walk. I_{AM} walk not merely in solidarity; I walk in *alliance*. I understand that my walk, is a one-person-protest. Claiming a right for my body to stand in for myself, neither more nor less. This walk is a petition for semiological justice. As for the status quo: I see that I *stand in* for general melanlined crowd – and_{sp} they stand in for me.

My walk is not a walk in isolation. My walk is not my walk to own. My walk *is of the landscape, my landscape walks in me*. And the friction of my gait on the ground, my feet on the pavement, my steps across the city, get heavier.

My inventory lacks Ockham’s razor and in its place – is the knowledge of being connected in a way that is foreign to those not gifted (with) this_{sub} ^{super}jectivity.

Black communities call it *diaspora* – and we call it colonialization. And whilst they are not the same – they are *of* the same. And we hurt in solidarity. Thus stems the healing force of being surrounded by kin.

As much as I am of the landscape, the landscape is of me. And through the company of others, in the company of peers, in the knowledge of being seen without a semiotic coat, I can become me; a least for a while. Once I am me, we can get to know each other. There, we speak collectively just for ourselves. Hear our voices. Find our voices. Be. Being – simply being.

Being happy – feels like an act of resistance. Happiness is not a *given* but hard labour. In the presence of kin, in the company of us, we become us. And when-we-are-we there is no time to lose, there is so much to catch up, and

the burden of

being-a(s)-collective

becomes

the joy of

being-in-company.

2020 damaged us. It hurt us. It killed us. And it left scars in our bodies, minds, buildings and psyches.

Once more, Black and Brown communities carried the double-brunt of the price of racism.

Not only are we gifted with the wisdom of perspective of *outsiderness* by virtue of not being allowed *in*, we also get to do the dishes: It is left to us, to do the emotional labour of working through the racism that we are subjected to. To feel, (non-optional,) and we all felt it, across all disciplines.

I don’t want Ockham’s razor. It is blunt-and-too-sharp-at-once. I do not grow a beard and I have no interest in cutting my hair.

What good is disse[ct]e_{epi}tion if the price for knowledge is death.

Publish-or-perish – more like *publish-means-perish*.

I will not cut my knowledge into pieces: There is wisdom in how a Black man walks. And too many sought to study this walk with knives, guns, batons, cars, needles, museums, archives, databases, bullets, sticks, nooses, deportation, so forth. Their dreams of AI, facial recognition, predictive policing are the stuff of my nightmares.

[and then they ask me for my [E]vidence?]

We do not require the support of others to write what we know. What we know-know. In a way of knowing, so unlike the traitor’s ways of knowing. There will be no second-guessing. No pale citations, not *here*. Publish_{ers}^{img} *is*_{are} part of the problem. Whilst white(ness) *is* the default, it is anything but *neutral*.

I_{AM} claim this space boldly.

And this body.

And this text.

See me.

See me build.

See me shape this environment.

See me build myself.

See me during my office hours, and seem me outside my office hours.

And then you see me and *be-of-me*.

And we become of each other.

I claim this space. This body. This text. I shape this environment, of which I am, which is of me – of us. And which you have entered.

Learn to know – or better – *remember* this way knowing, that is unlike the other ways of knowing.

I am my own object to think with.

I am a subject.

I am method.

Whilst *they* try to *stay with the trouble* – *we are* the trouble. I am the trouble. So trouble I will be.

In this way, 2020 was the great catalyst of understanding. What Black and Brown communities said for *centuries* millennia, - finally became legible (a bit). 2020 catalysed white knowing and literacy. The tuition fee being Black health, life, sleep, tears, blood, breath

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“I think one reason people who aren’t racialized as Black so often misunderstand our collective grief in response to someone we don’t personally know being harmed is they really don’t understand the Diaspora, that it spans space and time & can constitute a place of deep connection. We know that healing and flourishing are fundamentally collective. That we are all inextricably linked. [...] I am sad that for some, the deep healing of community, collective space and action is unfamiliar. Yet in a small way, relieved that perhaps this way of knowing and existing won’t be appropriated, colonized and marketed.”

[5]

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2016

“Are you the pizza delivery guy?”

to me

Unsolicited comment

by anonymous woman

Newcastle/Gateshead

Hotel Lobby,

February 2017

(Invited scholar to observe a workshop on feminist crafting practices to teach local woman code)

It was a time [REDACTED]. The BLM movement is in full swing, the resistance against 'it' swinging even more, and I seek refuge amongst kin to heal. I heal in the company of *Rainbow Noir*. The Manchester-based queer People of Colour peer-support group. I befriend feminist screenwriter and comic *Deborah Francis White* of *The Guilty Feminist Podcast*. I engage in outreach on popular media. Get paid to be a comedian on successful panel shows [96, 103]. I make my first steps on the UK's digital art-scene and befriend Ian Gouldstein and Ruth Gibson and Bruno Martinelli. I teach postcolonial theory for Lancaster's geography department^[m] and I get hired to work under [REDACTED] circumstances in Aberdeen for a project that turned out to be very different than it *seemed* at the outset [REDACTED]. I co-lead the Wor[m/k]shop on *Ethical Conundrums* [45], and we write up the project and get it published. Things go well. I flourish. I relate to others and they relate to me. We support each other.

Then, my diary reads this:

November, 2016 But then in the last 2 weeks, some events forced me to dramatically reconsider the framing of my practise and the meaning of it, and some gut-feelings and aims and objectives of the overall research project had to be prioritised, and suddenly - this project lost all of its playfulness. Is no longer the sort of innocent and exploring, creative publication I that anticipated at its outset. [I]t has become very clear that something as mundane and simple as playing *Pokémon Go* in ones' own neighbourhood is no longer an innocent act and mundane past time. I cannot walk in peace and joy. I acknowledge my being. My being *me*. That I am *not just me* by myself, but my *meness* is just as much a matter of what I am turned into by/through others. I hurt when I picture those with bodies *like me* - but landscapes drenched in the echoes of slavery. And how these echoes affect their bodies, their lives, their healths.

Were I playing Ingress (or the *Pokémon* game) in the US - the practice changes. No longer is the gameplay the realm where matters are at stake. Black boys in the US are always also playing with their lives. I cannot play innocently, whilst others - seeking to do

^[m]With *Human Rights and Intellectual Property* Lawyer, and Human Geographer: Dr. Saskia Vermeylen.

the same - risk their life through it. The injustice paralyses me. I no longer move. I no longer walk. I stand still. Hold my breath and *feel*. So don't you dare to tell me that *software is neutral*.

4.2.2 More Somatic Method

Thrift acknowledges the tremendous amount of agency the body takes on in shaping and shifting and constituting the human experience. He rejects body-mind separations and rather than seeking to analyse and deconstruct the relationship, he stresses the entanglement the actors and the world perform. Yet, he remains silent with regard to other aspects of bodily affordances that profoundly shape the premises of engaging with one's environment. Hayward [130] convincingly demonstrated how bodily senses shape the premises for engagement with the world. Yet Thrift does not acknowledge that different people possess different senses, abilities and preferences. From impairments of sight, complete anosmia (lacking a sense of smell) or partial deafness entail a different sense-making of one's local ecology. Morag Rose's psycho-geographical walking practices explores these psycho-politico-scapes in the city of Manchester. It takes into account the impact of bodily ability, gender, temporality (i.e. when they walk), seasonality, age, affect and mood. Merleau-Ponty notes that: "My body is a thing amongst things, it is caught in the fabric of the world" [195, p.3]. He stresses that it is *amongst* the things, and *caught* in the fabric. Thrift thinks with the body as an intellectual catalyst; but ignores the politics of the body itself. He misunderstands the body; or uses the body in an enlightened sterilised fashion (see also Ch.6 on this).

Bodies are diverse. Bodies are more muddier. Bodies don't 'age'. *Ageing* sanitises these organic processes. At the more literal, material level: bodies become frail, leaky, saggy, weaker, smellier, unreliably, and suddenly, newly sentient and more receptive to the environment. Average young bodies, healthy bodies, white bodies may find themselves blind to the unevenness's of the ground, the daunt of parks after the dark; the threats that some neighbourhoods exude on my friends, my peers, and myself.

doing STS with the body It is in this iterative circle of 'making' and 'reviewing' and 'reading' – through/in which my practise emerged *and in return*, my reading of NRT (and other) theories and *text* became clearer. It enabled me to engage with the propositions and tenets of NRT in a critical and creative fashion. For me, particularly the body, as an actor and participant at the nexus of engagement with the world (and the digital) provided an original angle with which to explore traditional HCI questions.

Through a phenomenological, somatic, body-centred topology, instances of ‘technology-vs-body encounters’ are curated, experienced, analysed, discussed and performed in a manner that aims to unveil new stories, find implicit connections, untold narratives, ignored events and the like; i.e. those stories that are prone to overseeing when following the traditional paths of HCI queries.

Words fail me. When I speak of ‘we’ are dying; who is this *we*? A *we* without *me*. It is not me - not my trauma to capitalise on, whilst it is very much *our trauma* and we are not gathering capital from this. *Die Welt ist alles was der Fall ist?* But what am I to make of this when the world ends? Like all colonized and Indigenous peoples, *a life in the postapocalypse* is not a *feat of fiction, speculation and the imaginary* but an everyday visceral matter-of-fact. It is uncanny how uncannily mundane total annihilation is.

The world being everything that *happens*; the world being the overall summary of

things

and

thingnesses

and

their interconnectednesses,

and

their relationships

and

non-relationships

and

potentialities.

Things are not the *stuff* the world is made of; it is the relationships between these things that produce the world(s) that engulf us; and *this amorphousness of the other* is a state-of-being that becomes produced and through this state *we* become_{are} connected. At least that is how it should be.

[I ~~will~~ can not render you a service.]

What PoCs went through this past year defies words. This isn’t our first pandemic. Not even our second. It is just one more instance of *the unimaginable, materialised; the unthinkable, mattered; the inutterable, worlded*. This is not the first time our world has ended. We’ve been through this, we remember the drill. In our veins runs the memory of the mortality of kin.

But what made *this one* uniquely different/^{μηνογγιπ/} is that it took the one thing away from us that supports us. Kinship. Overwhelmed by images of kin being mistreated, and overwhelmed by the amount of loss-in-translation of what it meant to be us, - then and there - we were forced to halt. Our bonds were severed, and QPOC isolation became a supplementary death-sentence in its own right. And left alone with our loss, we took damage.

The sudden waves of attention overwhelmed us in a way nothing has done so before. Healing and self-care as a person of colour is an act of resistance; but I was not able anymore to resist. [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED], [REDACTED], [REDACTED], [REDACTED] [REDACTED], [REDACTED], [REDACTED] - [REDACTED] [REDACTED] [REDACTED]. Protect [REDACTED] & [REDACTED], [REDACTED] [REDACTED], [REDACTED] at all cost.

And then it dawned on me... the only way for me to have this conversation is to stop having *their* conversations and to remove myself from the^{ir} discourse altogether. Until I find my way out of this labyrinth of pain and collective trauma; like I have never felt before. Brought ~~to~~ beyond my limits, 2020, the year of *stasis* produces the realisation that *inaction* is not a remedy but in fact visceral pain. [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED]

The blatantness with which melanined bodies get treated differently to white ones *over there* - makes it hard to *be*. And *be here* and *be-here*. Inaction is not a remedy. *In action* is healing; but there was no more moving left in me. Not even the strength to imagine to ever carry on. I hurt. I be. I stand-be-hurt. I try to breathe. I count. But I do not have enough tears to extinguish these flames that engulf me. This cannot be the time to write.

One does not confront a history of racial domination by ignoring it, since to ignore it is just to incorporate it, through silence, into the conceptual apparatus, whose genealogy will typically ensure that it is structured so as to take the white experience as normative.

Mills and Mills [199, p.■]

being in the middle of a fire can make any type of writing generally, and succinct, coherent thought in particular, a privilege only available to some.

Kamunge et al. [152, p.189]

Who gets to write while the fire is happening?

Kamunge et al. [152, p.193]

Unfortunately it is in the nature of academic quarrels that methodological problems are likely to overshadow more fundamental issues.

Hannah Arendt [14, p.53],[81, p.375]

Tamenetsi movetur__

Interspersed through the tales of the characters' diasporic wandering are descriptions [...] that Ecks sees on his travels. The descriptions of the ██████ stand out as separate to the rest of the text as they are written in italics and on separate pages to the rest of the novel. My analysis focuses on how ██████'s ekphrastic text picks at the prescriptive worldview depicted in the tapestry. [The] weaving of the wandering outcasts into the tears and seams of the tapestry disrupts both conventional narrative and the societal convention espoused by such a worldview. [...]

██████'s emphasis on diasporic, eccentric and unsettling ways of writing and being offers further tools for conceptualising, grounding (paradoxically, perhaps) and, indeed, questioning a celebration of 'nomadic consciousness'. I deploy the novel [...] as a form of creative theorising that offers provocative interventions into what would later become philosophical debates about affect and feminism.

Tanna [265, p.57-58]

4.3 Implications

It is a political digital walk, a walk in solidarity and acknowledgement of an inconsistency with which we move, and that not all bodies are permitted (or able) to move in the same way - and that the elusiveness of movement is an ally to regimes of injustice. How so? As bodily movement is evidently resistant to documentation, the body's knowings too are difficult to grasp, hard to externalise, elusive to debate and uncooperative with quantification.

Realising this, I ended a number of experiments of documenting my walks which included GPS datasets and mapmaking, drone-observation concepts, augmented-reality thought-experiments or performance-artwork proposals, neuro-science based creative experiments, public performances and much more; all in an effort to ensure that my mode of inquiry remains viable inside a PhD thesis. I'd get stomach aches about trying to explore this rigorously whilst also chasing external sanction; normative definitions of *rigour* I seek to overcome in my work. But then I would walk nonetheless.. and eventually certainty ensued. I would do not hesitate, I would not doubt, I would not engage in subservient ways of reason. I would simply just walk in resistance, walk nonetheless, walk resistantly. A walk that matters, an urgently needed mark. I didn't walk *to do research*, instead I walk *to be*; walk myself (back) into existence.

4.3.1 Meeting (the) code-half-way

Method and methodology are at once my favourite and least favourite thing to discuss. I am – clearly – passionate about 'how we get to know(ing)' in (and beyond) the academic setting; and thus I could never understand my peers who were immune to the thrills of epistemological and ontological concerns. Yet, at the same time – I am proudly uninterested in these matters as discussions of a theological nature. By that I mean that any discussion of method that does not acknowledge the idealisation and *double-bluff that is inherent to the promise of method*: On one hand failing to meet the promises of objectivity by virtue of being not objective to begin with; and deflecting (invisibly) the price for this bias to those who fail to be explainable easily.

Objectivity's allure is too strong to admit that it's a myth, so powerful it shapes reality - and convinces us that it is true.

Objective evidence which refutes objectivity is rendered objectively non-objective.

Matters of method excite me if they stay with their trouble; if they grapple with their limitations – instead of succumbing to promises of an objective [T]ruth.

To me, *method*, reads as nothing else but *applied epistemology*,

apparatus thus being a material witness to ontological assumptions and *analysis* a practical response to the limits of ‘representation’ in an effort to stay faithful

to those chosen qualities that one seeks to commodify.

Too often though, in discussion and the teaching of method and methodology, the matter of epistemological violence and uncertainty is overlooked, if not concealed altogether. Informed by conversations I have had, and other conversations I have witnessed (but was very much excluded from) including issues of cybersecurity and health database management, or █████ management to name just a few. These discussions were not amongst peers, but amongst those with decision-making-powers; illustrious in the extreme. Witnessing those encounters robbed me of much sleep.

Sensitised through the method of phenomenological and *somatic walking*, I became enabled to articulate issues and concerns at a wide number of points. *Affirming my body^{ing} as a method* enabled me to sustain an epistemological commitment to elucidating problems that spring to me whilst reflecting on my walking practises.

Non-phenomenological topologies (such as *disciplinary frameworks* or *more structured methods*) would have stifled my holistic method of engagement detrimentally. Whilst existing work on the body as a method centres on *the body as a method* my radical phenomenological-somatic hermeneutic of *the philosophy of landscape writing* invigorates my observational lens, drawing on Walker’s work on *propositional objects* as material artefacts with which to alienate and re-discover ‘*the mundane*’

and

through reflecting on my practice of playing geolocative games, I am able to discuss and debate “matters of the digital” at

a more concrete and more abstract level

at once.

I consider my contribution to be an outline of a methodological prototype on *how to stay with the trouble* when it comes to *the digital*. I make a clear case for demonstrating the kinds of knowing and knowledges that landscape-somatic-phenomenological observations can put forward and how they invigorate at once: landscape writing, embodied methodologies, and critical engagement with *the digital*.

As a consequence of my walking practice and phenomenological approach to the digital I find myself increasingly more often in a position of making the following point in conversations with non-technology oriented peers, students and superiors alike: In the same

way that an absence of any economical training does not disqualify one from engaging in discussions of capitalism and its consequences, an absence of technological training (or even literacy) must not be a hurdle to engage with questions of the digital. I wholeheartedly admit that being in possession of the ability to write software fluently or conduct code-reviews would be an invaluable asset to my work. However - any ineptness in these matters cannot disqualify me from drawing out and articulating the real-politische consequences of internet inequalities as I become subjected to them (or at the very least witness these).

Reviewing much of the work in HCI and being familiar with the discourses of the disciplines and its norms, values and practises; I am explicitly conducting work that deviates from *these roads well travelled* – especially given an increasing body of literature concerned with some of these disciplinary idiosyncrasies and shortcomings in the field.

Thus, there is an autoethnographic dimension to all ethnographic research, which turns us into objects as well as subjects of enquiry, into observers of our own observing [78] .

Thanem and Knights [269, p.55]

It is in response to *observing these ways of observation* that my work, method and writing ought to be understood to be a demonstration of a wholly different kind of rigour. My rejection of *Ockham's razor* and common *discourses of objectivity* is intended to be a project of emancipation that demonstrates the value of non-linear engagements and how these entail and produce knowledge that is not inferior to linear knowing.

I illustrate my point with an example of a recent article by Prof. Torkild Thanem in the academic magazine *the Conversation*: “Fake news: emotions and experiences, not more data, could be the antidote [157]. Thanem discusses the interconnectedness of online discourse and how to go about researching and observing "fake news". Thanem draws our attention to the risk that academic “fact-centred” counter-narratives can expose us to: i.e. they notably increase the gap between academic lives and the lives of those drawn to these narratives.^[n]

4.3.2 Whose pluralism and *nuance for whom?*

My petition for *a keyboard with just one more key* is a call for nuance and ambivalence. *The right to nuance* cannot be reserved to *causes of the left*. However, having said that, I am firmly distancing myself from the work of Latour and his lamenting of an alleged “steamlessness” of

^[n]Upon request I sent him my Ch.4 invocation and I drew out how his work and mine are getting at uncannily similar conclusions, but through vastly different means.

critique [167]. Latour's response to the adoption of discourses of 'partiality' from the side of the political right (and populist governments and political actors) is the suggestion to *return to facts*. Latour suggests that he deems his project to be one resembling anti-factualism; which in a backdrop of populism he now seeks to reverse. However, my hermeneutic of his work is a different one. To me, Latour's project was once a labour of de-centring dominant narratives and *telling better stories*, and *telling stories better*.

What has become of critique when DARPA uses for its Total Information Awareness project the Baconian slogan *Scientia est potentia*? Didn't I read that somewhere in Michel Foucault? Has knowledge-slash-power been co-opted of late by the National Security Agency? Has Discipline and Punish become the bedtime reading of Mr. Ridge [...]?

Latour [167, p.228]

Yet, such an undoing of pluralism would throw the metaphorical child out with the bathwater. The subversion of stand-pointed approaches by dominant forces gets at the heart of much processing of the current political moment; in research and beyond.

By drawing inspiration from the correspondences between design and ethnography, and confronting the frictions caused by their basic differences, we hope to exploit some of the advantages of design to enhance or transform ethnographic pedagogy and practise. Our intention, quite simply is to dismantle ethnography's ageing frame, tear it down to its most basic elements, and then reconstruct something new using parts and assembly techniques shamelessly scavenged from design, with the goal of rebuilding the core engine of anthropology - and in doing so clear a space for further transformations of the anthropological apparatus.

Gunn et al. [105, p.261]

Populism's power, it seems to me, stems from its tempting alignment with flawed narratives on nation, race, identity, religion and other parameters. The power of somatic and inclusive non-representational approaches then would stem from

working with these communities
and re-telling the local stories and
telling their stories better;

and draw out
 how their biographies
 become co-opted to sustain
 (or amplify)
 the *status quo*;

rather than foster equity
 and/or improve
 their *life-conditions*.

I am dedicating the next chapter (Ch.5) to the project of being able *to think oneself better* and how to achieve this particularly in the backdrop of a vague and abstract, and global elusive *digiscape*. Nonetheless, already in this section, and in the backdrop of my work above, I understand an ethical and moral framework to be a key compass to aid in drawing out which stories need to be *told*, and *told better*. Work that fosters the proliferation of *situated pluralist empiricism*, possesses an appellative nature, for causes of marginalised, *subalternized* [257], ~~vulnerable~~ mortal^[o], sick, and dying communities is what I strive to catalyse through my work; those who are turned subaltern through the technologies of culture, language, historiography, nation and gender, and ethnicity, genetics and religion.

Whilst it is tempting to strive to understand *technology with the means of technology*, my work advocates for a pluralism of [M]ethod, grounded approaches (in the sense of grounded in standpointed-accounts [122]) but in a way that emphasise the need for immediate and localized action-responses.

It may be tempting to presume that an understanding of the technology can enable one to make better decisions/judgements, but reflecting back on my pedagogy of teaching computing in a critical fashion, I increasingly commit to centre on *the body* as pedagogical totem. Centring on the body as site for code-human encounters is where I see code education and coding-ethics turning towards.

Whilst it may seem like a good idea to get students to try to get an intuitive grasp of the flow of information, I abstain from this objective. I in fact doubt that it is *de-facto* possible to get a sense of code, in the sense of an ability to develop a *precautionary principle of_{u1} coding*. The global remit of code, and the diversity of context with which it collides will remain a paradox for the longest time. When we are striving to get the students to ‘get a sense’ for the code and mathematics; this may sound promising, but fundamentally, humans have no sense-of-code. There is no visceral sense for mathematics. Indeed, some gifted students may approach a proper grasp for code; but others won’t (or at least not consistently).

^[o]Braidotti [34].

By ‘grasp of code’ I don’t just mean that some people are more gifted at coding than others; I also include an ability to foresee the socio-political consequences of acts of coding. If somebody puts forward a game such as *Pokémon Go* which may or may not be well-designed - there is only a small chance of us being able to anticipate that the game for some children in the US can bring the potential of death through racist violence. We do not possess a sense of code that can do these things. We might encounter gifted coders/software designers/systems architects, but the true impacts of code are remaining beyond what we can anticipate, design and imagine; code’s affective dimensions are non-linear and more-than-causal. Any impact of code is above all, and always^[7] a curation of bodies; and of people.

Coding decisions affect who gets what credit score, who gets good wifi where; which bodies are allowed or able to access which type of information; what kind of people’s CVs get put forward through AI triages; and who gets to be responsible for whom and how (data security etc.); what definitions of semiotic meaning are considered *true* and *valid* over others [262]; - which epistemes are *desirable* and which ones *superfluous*. Code (and physical computing) is a means to docile (a) the bodies of the coders, and (b) those who will be subjected to the code.

Code curates bodies.

I am firmly convinced through my practise that ‘building artefacts of code’ as approach to teaching is only half the story.

‘Breaking down existing code’ and ‘re-building it’ is the second part we have not yet sufficiency emphasised in the education of programming. This ‘breaking down’ and ‘rebuilding’ (or re-imagining it) is not conditional on one’s ability to be a programmer/computer scientist/software-engineer etc. Critical (counter-)narratives of the impacts of computing are not a right reserved to [E]ngineers.

In my teaching practise, *fluency in the use of code and fostering an understanding mathematics* is thus not the objective my coding education (respectively, *the coding education I am involved in*). I strive to catalyse a practice of coding which is a by-product of a critical gaze that seeks to continuously revise digital artefacts to make them iteratively more human-friendly and considerate of the bodies that are affected (or forgotten) in conventional practices of computing. In practise, I have high hopes for object-oriented-coding practises to lend themselves to some of this potential ‘localisation’ of the phenomena of code.

When *being an object of code*, whilst suspended in the web’s perception of me through my phone, I am neither disembodied, nor race-less, nor genderless, nor digitised. *I am still ‘of my body’*. Still of my environment. Given the risks I would be taking by exploring new neighbourhoods and unknown streets, my own practice became a stern reminder that my

bodily materiality matters. I glide smoothly through the cyberlayer of the game, my body — depending on

how I walk,

when I walk and

where I walk,

grinds against the city-cyber-geo-scape, and frictions occur when I am playing.

In the same way that I advocate for “grounded speech” and “grounded text” that ties itself up in its context, my diegetic for *digiscape-infrastructures* abandons universalism and instead lends itself to local and abductive/emancipated hermeneutics. Consequently, I reject the premise of “code as artefact” – but instead consider “code a phenomenon”. By that I imply that code-objects cannot be considered stable (like finished edifices), but rather iterative and *changing* (like homes and houses that are inhabited). In the same ways that landscapes *reflect, influence and inhabit* those who occupy them,

code-scapes too are an intrinsic part of the lives we live,
the movements we conduct,
and the identities we possess and negotiate.

‘True code’, that is *code* which *inhabits* the landscape and my body, *phenomenological code*, is never finished, is always in-becoming, is always *bodying* and in the process of *being bodied*, is unstable, open, appropriated by context and by intent, and queered by its users and further subverted by its queer inhabitants. A phenomenological hermeneutic of code is one where *code* acts more like speech; it is uncertain, anxious and in its liminality such code is *fuzzy*.

4.3.3 Uncertainty and fuzziness

Re-reading a text again offers different impressions, differing insights and differing consequences. Text and reading in this sense are a central object-of-learning in my understanding and diegetic for future-code and future-coding-practises. Grounded in specific code-scapes, in specific situations and specific projects my reflections then can become appropriated actively and refracted into an applicable framework that informs code-smithing practises.

Exchanges with practitioners about my vision and diegetic cause extreme reactions: Whilst often celebrated as unique, and provocative, inside the walls of computer science departments my petitions appear daunting and unsettling the foundation of the premises of

disciplinary practises. (And yet despite their radicality, they linger and intrigue.) *There*, code is acknowledged to be a mere projection ontological truths; and poking holes into the promise_{ASITUAID} of *certainty* causes visceral concern(s). The closest approximation of practical code that may somewhat straightforwardly meet the properties of computation that I desire, may be attained through progress in the domain of “quantum computing”. Until such time, we remain in submission of the physical and temporal limitations of operations. No matter how imaginative and inclusive coding premises find themselves, so far it stands that: approaching my infinitely fluid, and inclusive, malleable network in turn demands infinite amounts of calculations, which all in-turn feedback to one-another.

Fuzzy logics - and *quantum computers* may be inherently more apt at meeting my criteria for standing a chance to be *the matter of future digiscapes* that enable my abductive hermeneutics. Where physics deems sequential uncertainties to be stacking, *logics that are fuzzy* wholeheartedly embraces the possibility reality of *uncertainties cancelling one another out*. You may not be surprised at my visceral disappointment when I found out that the first example I encounter where large-scale employment of *fuzzy logic* has been employed, was by the data science consulting firm *Cambridge Analytica* - in their endeavour to support the Brexit/Leave campaign(s). Fuzzyness how? : One does not need to *know* that a certain subject/person/citizen is susceptible to a specific rhetoric, to make the minimal investment of sending *them* tailored, polemic ads a worth-while expenditure.

One does not need to *know* of *exact* vulnerabilities, when ‘an informed hunch’ evidently works well enough.

Quantum computing’s potential lies in its ability to be unbridled of the one-zero foundations of contemporary code. The binary inputs of contemporary computing logic becomes replaced with »Qubits«. An superimposed uncertain state of information which, albeit its internal variance, can be valorised computationally.

Uncertainty therein gets transformed from *a hurdle of computation*, to a realm of infinite possibilities. *Quantum entanglement* becomes not *an absence of certainty* but *a potentiality of manifold-simultaneous calculations*. Quantum computers thus exploit uncertainty’s ambivalence as strength to be embraced, and not as error to be feared. The knowledge that *uncertainty* seems to stifle ethnographers, but can be commercially commodified in the realm of computing, gives me food for thought.

4.4 Summary, Conclusion and Outlook

4.4.1 Summary

It was a daunting task to embark on a project that confronts the cleanliness of method and reason and forgoes them, in the trust of producing something else, at least of equal value. Walker's words remained a faithful encouragement to me. "Creativity is inherently uncertain." *Hearing* this is reassuring. Once again, documenting my practise is a resisting effort.

"Creativity is about probing what you don't know,
its about being on uncertain ground,
being comfortable on uncertain ground."

Walker [296, p.c.]

With the certainty of hindsight my practice's importance for my thinking seems incontestable; yet *whilst in it*, the uncertainty of my practise was a source of anguish and concern.

Conceptually I approach *the digital* akin to climate change or capitalism, in the sense of their remit being global, but their effects and enactments witnessed in local settings and microgestures, and the ordinary. Given *the digital's* omnipresence and entrenchedness with the everyday environment, living within 'the digiscape' is therefore bound to leave its traces in the "shaping of self, body and landscape" [320, p.166]. The labour of this chapter was several-fold. On one hand I sought to establish a platform that enables me to harvest my movements and in-the-moment reflections and intuitions to transpose them into the written medium in the context of a thesis. This capturing was an unforgiving and difficult process with substantial amounts of agonising doubt and infinite revisions over many years. The first walks that were part of this project began in 2016; yet even in the last weeks prior to submission they still yield new knowing and remain fertile sources of learning.

How I write,

when I write and

where I write,

is a matter of somatics (i.e. my inner sensory and phenomenological experience of my movements) but also fundamentally a political issue. In my current function as a carer I become confronted on a daily (sometimes hourly) basis of the power of the body as a curator of knowing and curator of landscape-human interactions.

On the other hand though, through my writing, through my reflections and documentations and through somatic-anthropological strangeness I am trying to develop a method/practice/alertness of my bodily knowing which opens up new topologies of narrating about *dwelling in the digital*.

Rather than allow myself to be interpreted as *being translated* - I consider myself and the software that engulfs me, being in a process of mutual touch. Through *bodying* in the landscape, I overcome dualisms of human-computer oppositions, and instead queering the analogue ^{input} binary. Phenomenology and somatics then aid me to overcome *the enlightened premise(s) of dualism(s)* in favour of *troubled accounts*.

Having shared some of my writings from this chapter with peers who's input I respect, I am working under the assumption that these *troubled accounts* were successful in my pursuit to bring forward new knowing that is deemed impactful by those around me. My holistic approach to the body informed my writing, my coding, my teaching and my overall approach to *being*.

And whilst merely my hand is operating the cursor, it is not the case that *the whole of me* is (the) *input*. It is a mutually-catalysed transformation with profound consequences for the/an/our epistemology of computing. What happens if all-of-me becomes interpreted by the digital artefact as *input* and the software is not limited to the flat surface of my screen, but *everything around me* becomes ravished by the software.

My text-smithing becomes more and more concerned with crafting a type of *partial directionality*, a partial hermeneutic of code and 'the digital'. On one hand I strive to create a text-scape which is easy for the reader to navigate; but the type of text I strive to construct is one that demands an emancipated appropriation on part of the reader: *a text that is of context, and a reading practice that is 'grounded'*. In the same way that I reject the premise of *stable code-artefacts* I reject the assumption that this thesis is *finished* in any way by virtue of being finalized, submitted or sanctioned. My text, my practise, my body and my writing are relational; and [M]eaning_{input}[e]M only emerges in the instances of engagement. It is in this sense that this text, this thesis, code and 'the digiscape' are phenomenological worldings.

4.4.2 Conclusion

Merleau-Ponty begins with the negative claim that the body is not an object. It is the condition and context through which I am able to have a relation to objects.

Grosz [101, p.86]

The chapter closes with a birds-eye view on some fundamental epistemological assumptions I have made in the course of this project (i.e. accepting a notion of *duality*)

that opposes Mensch and Maschine). **In preparation for the next chapter I then propose to do away with such an assumption and look for alternate epistemologies** and how - with a similar method, and the knowledge gained in this project - the journey could continue. The turn towards the materialities, as a form of Levi-Strauss's '*thinking with*', enables us to reflect back on culture and cognition through the lens of us as an outside agent. "Things are not carved out of human relations" [1, p.6], but rather of sociomaterial "collectives of humans and nonhumans" [156, p.143].

Given its omnipresence and entrenchedness with the everyday environment, living within *the digiscape* is bound to leave its traces in the "shaping of self, body and landscape" [320, p.166]. A resulting phenomenological framing of cybertechnologies opens the possibility of applying new methods of investigation, and theories for analysis of the interplay of body and landscape and technology; it opens up the possibility and space for new methodologies and methods. Bodies are "a thing amongst things" [195, p.3] and their ways of dwelling are echoes of how they engage with their surrounding environment. Coming-into-being occurs through the bodily engagement with the game. The game does not exist independently of its use; *being in the gamescape, moving through the landscape and engaging with the game* is conditional for the coming-into-being of the game, the player,

the digiscape.

I, and my body, we may be *a thing amongst the things* - but not all bodies are equal; not all things are permitted to do the same things; and sometimes, two *things* doing the same *things* cause different reactions (cf. also Clough and Gregory [60]). I engaged in a practice, and placed it into a heritage and lineage of others doing the same. I do the same, but do it differently; and do something different - achieving very much the same (I hope). But different. They approach the impossible, don't stop trying; get there; and provoke us to do better.

4.4.3 Outlook

Thus the premise through which I sought to *make sense of the digital* was a body-centred methodology, based on the same type of thinking that has informed my intervention I (Ch.3). To me, it seems that the phenomenological lens, as I employ it, very much echoes my interpretation and relationship with the two companion tracks from Ch3.

A *Mensch-Maschine* interpretation of the digiscape is one that opposes either *the Pokéscape, city-scape, geoscape*- Or alternatively, puts my body into a dualistic-oppositional

dialectic with the *game*. Agnew and Duncan [2] identified three constituent parts in geographical exploration of people and place and mutual sensemaking. The first one is a location of abstract imagined grid-like reference framework such as mathematical geo-coordinates. The second framework of making sense of one's position relative to one's environment is one that uses the built natural, social, and interpreted ecology; the names given to cities, areas, places and countries. The third, the experienced affective environmental experienced of the individual that goes beyond symbolism and common language. It is for example that illusive quality that makes some places, that one has not been to before, feel strangely familiar; the sense of belonging to a place one has never been to before (or which may not even physically exist) or the temporal transience which lets urban parks transform from inviting social spaces to daunting sites to be avoided over the course of a 24 hours rhythm.

Whist such an appreciation of the instability of spaces, is aligning with much of what I seek to draw out through my method, such a framing does not go as far as I do. It falls short in matters of embodiment, and in its commitment to the phenomenological and somatic premise and method which I strive for. Rather, I understand the hermeneutic of my practise as one of an ongoing process of becoming. As much as I (and my body) are the catalyst for the coming-to-be of the game, the game is the cause-and-consequence for me *becoming a 'player'*. The game, respectively my engagement, my practice of the game becomes a method and a catalyst for a posthuman (in the sense of *more-than-human*) accounting of *what it means to inhabit the digiscape*. As for my encounters in the digiscape; new phenomena and relationships can be brought into conversation with each other; can be accounted for and threaded together.

My accounting of the digiscape includes all that I can sense: be this with with my hands, feet, skin, nose, fingertips, mind or tongue - all is on par with each other. For it is true: when playing, a Pokémon (to me; the player) from my phenomenological vantagepoint, becomes more real to me than a blue whale in the oceans, or the moon at daytime. And this goes both ways, *as much as I sense the world and cause its becoming*, I too am available for scrutiny by *it* — with its senses and sensing — I am on par with it. One amongst the others, and an other amongst it. The game forces us to re-define the boundaries of what a game is and what it can be; the limits and materiality of software (something that traditionally is talked about in alluringly immaterial ways), and the subsequent urgent need for a fundamental questioning of hard-scapes and landscapes in the backdrop of ubiquitous digital stories, intangible cyber-monuments and virtual culture.

What the game-as-method teaches me is to consider *the thingness of the things* on their own account, as they appear to me; not in the manner that I was taught to categorise them. This *thingness* of that which surrounds me, does not become inscribed by me, but instead

I strive understand the objects in terms of the relationships they_{AM} develop to each other. This ontological flattening is reminiscent of ANT [148, 169], which – through breaking with conventional topologies – enables the drawing of new connections, causalities and genealogies. The explicit aim of my work and presentation is to make a case for a practical and conceptual entanglement of the digital realm and *the analogue world*. I am using the term of *realms* as an intermediate aid to make my argument for an interwoven phenomenological entanglement of the virtual/digital and said *analogue world*.

Becoming written once was becoming frozen; solidified and catalogued; and mapped. Acts of colonialisation. But the rules have changed. (Or maybe they always were this way?) Becoming written *now* means to become erasable. Resistant writing is an optimistic strategy; as it hopes to free. But letters remain flammable. I will pursue to continue this declination my argument; but I cannot afford to *defend* my argument's *raison d'être*. What counts as evidence and what doesn't is not something I can *do* on my own. Evidence to support evidence cannot prevail in such an uphill battle. I can - continue to build this argument in a logic procession though - but ... puts *us* at risk of erasure.

Chapter 5

Writing. Reading. Evil.

ASDF ASDF. asdf asdf Asdf aSdf asDf asdF. Asdf aSdf asDf asdF. asdf.
ASDF ASDF. asdf asdf Asdf aSdf asDf asdF. Asdf aSdf asDf asdF. asdf.
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My mum used to tell me stories from her time in secretary school. Accurate and precise typing was an integral part of her education there. Hours and hours they would spend, dociling their bodies, typing the same letters and sentences over and over again, pages after pages. ASDF ASDF asdf asdf Asdf aSdf asDf asdF Asdf aSdf asDf asdF. And so forth. And so forth. She would also tell me of times when she took dictations from her brother, as he was in the process of submitting his diploma dissertation. No programmer can keep up with the accuracy, speed and discipline of a typist.

Now *I* find myself in the process of writing an ‘Abschlussarbeit’ of my own.
Abschlussarbeit - a ‘*work of closure*’.

In another country, in another language, in another house. Rather far. Still typing.

She would tell me stories of both of them having spent days and nights in their old parental home, locked in a room and doing nothing but taking - respectively giving - dictations. In her training at secretary school she was taught^{they were taught} to discipline her^{their} body^{ies} in a fashion that enabled her^{them}, via the means of a mechanical machine, to transform ephemeral spoken words accurately into ink on paper. The typing needed to be firm and forceful as to transfer the type impressions sufficiently deep through the alternating layers of paper and carbon tissue, to produce the required numbers of copies as demanded by the faculty. Imperfection in the final documents, whether their fault or not, would not be acceptable.

Decades later, ever since my first encounter with a computer keyboard, my mother wouldn’t tolerate me typing anything but ‘blind’ and using no less than all of my 10 fingers.

She ‘gamified’ the same exercises she had done many years ago when she was taught to type, but this time, *she* was being the teacher.

Now my mum has cancer and my uncle, who circumstantially ended up living in the intermediate vicinity of her, is looking after her in my place, whilst I find myself typing these lines. But even today, neither my uncle nor I have reached her speed and accuracy on the keyboard. His thesis, then-and-today, remains a legacy to their practises, their encounters, their work; but the document itself does not acknowledge what it took to write it.

As for my work? What does it stand for?

A text demands emotional labour. A labour by those *doing the writing* as much as it is an emotional labour and burden to be done by those *who are cut off from the writer*. Isolation - physical and intellectual - is a price of being *rigorous*; and we appear stern, far away and unavailable. These lines are testimony of this. My absence is the price for rigour in my thinking; or better; the toll of writing in compliance with the rules and procedures that the doctoral ritual entails.^[a]

I find myself saying *the* price; but I err.

Theses have many costs: demand vast amounts of time, resources, money, trouser sizes, diopters, energy, electricity, CO², calories, chocolate, intimacy, sleep, relationships, emotion, tears, RitalinTM and labour. This is my attempt to resist their erasures; politicise the network and intersections where my motherly ailment and the demands of the academic institution meet; at the intersection of my fingers and the keyboard; how my hands move across the letters; in the way ink meets the paper; *in* the microcircuits that open and close to modulate the LEDs in our screens, in our monitors, or e-readers or wherever this text must travel to.

Was it really worth it?

Writing is never an unemotive act, but always rather one at the nexus of a bewildering array of emotions. Ecstasy, frustration, despair, exhilaration, fury, deferring, anxiety, melancholy, lament, ennui. Whether through typewriter or computer-facilitated accounts, typed texts hide the lion-share of the socio-material encounters that underpin all writing. Yet, interruption, hesitations and omissions are part of dwelling in the world; they are a human trait. Beyond writing and thinking, they take place in all instances of subaltern stories that vanish in the transcriptions of meaning from author to reader.

Arendt^[b] praises the firmness of written text. *Written* and *thought* thinking, are fundamentally different; they have different strengths and weaknesses; are different practices

^[a]See also dedication p.iii).

^[b]Hannah Arendt; political scientist, 1906-1975. German-Jewish Refugee. First theorist to describe totalitarianism. Patron of this chapter, any *my* digital ethics.

altogether. To her, written thought possesses a rigour and firmness that pleases (her). She writes for herself; does not seek validation or approval; it is a process of externalisation and solidification. And whilst she does not *write for others*, knowing her writing may lead another (hu)man to *understand in the same manner she understood*, gives her a kind of satisfaction that feels like ‘having arrived at home’ [318].

Writing is not a straightforward and homogeneous practice;
I do not seek to bash a straw man;
strip *writing* of its nuance;
privilege [w]estern academic writing over others.

Rather, I understand *writing* as ‘umbrella term’ for a diverse set of practices that differ in their materiality and embodiment.: When pen and paper meet another, thoughts flow differently than when we are typing on a laptop or computer; which is different to a typewriter. Writing^[c] becomes writing^{[d],[e]}. With all the baggage that entails. Writing is a *making*.^[f] Writing is a kind of a crafting of an object. More explicitly: books, postcards, letters, zines, pamphlets and messages in bottles - they are *things* as much as they are ideas.

Thinking with the brush and body is undeniably different to traditional academic researching. Pen-and-paper encounters are better at *leaving traces* and *being-witnesses* to ‘our’ *hesitations*.^(Better at what? for whom?) One of the most moving examples of this effort is the Japanese cursive calligraphic tradition *Kanamoji*. This ancient (*Heian period*) writing tradition ties together the need to express one’s personality, movement and flow of words, poetic and graphic composition ; ties together 清少納言 and 赤川薫; and past and present. The Kana script has been developed as a particulate writing form to better convey and evoke sentiments and imagery imbued into the text by the author. Emotion, feeling, anger etc., are expressed not only into words, but just as much through the calligraphy.

Its usage was reserved for personal diary entries and courting correspondence. In *Kanamoji* then, flow, placement and movement of the brush strokes that make up the words are as expressive as the lexical aspect. Bringing into harmony (or juxtaposition) content and writing, allows for a more faithful ‘*mobilisation*’ of the author’s intent than the formal predecessor script (the *Kanji*). *Brush on paper* allows us to take note of the varying speeds of brush strokes,
the subtle changes in pressure

^[c]The practise

^[d]The text; its words. Its ‘ink’. Its paper-ink-wordings.

^[e]In German: “[s]chreiben wird Geschriebenes”.

^[f]Do I dare to make blanket statements about writing? Or is a universal ‘call for nuance’ not axiomatically a nuanced act?

and power,
and rhythm,
position;
commitment,
gender,
hesitations.

In Kanamoji, all this can remain.

Brush strokes bring together the rational and more-than-rational aspects in the practise of writing. But still

typing this text on my irritatingly old Macbook Air [52],

and

using brush and paper,

are nonetheless alike.

Both are events constituted through encounters of bodies; the result of bodily movements; the shifting of matter. As such, I understand text to be above all a witness to instances of body-technology encounters. Reading text *like that* then tells ‘other’ stories: ‘The bigger picture’ (one that is more-than-the-ideas-in-the-text) is one where *movement, body, language* and *material* come into contact, in *this* moment, and then break up again; to leave textual footprints in the sand, traces on paper, witnesses of our acts(,) remain. In its alluring linearity, text implies ‘sequentialism’, whilst in reality writing-is-anything-but.

(Writing better stories, and, writing stories better.)

(Who’s story; *what* is missing?)

(*I remember touch*)

(?)

Hesitations are in-between moments. Spaces for reflection, reconsideration and re-orientation. They are in-between times, and in between spaces. Joseph Vogl (a German theorist of media, finance, power and affect) in his reflections on hesitation writes that hesitations bring harmony to *motivating* and *blocking* forces; forces which take place between the moments of “perception and action” [288, p.22]^[g].

Hesitations are not instances of stagnation, or delay; hesitations are bodily utterances of doubt, critique and intuition. My notes read: ‘*Hesitations* (sic) *is where it happens?*’ In

^[g]In [36].

the instance of hesitation, one is not in a moment of “non-decisiveness” [p.272] but one is going through a process of “re-writing and re-shaping” [ibid.]. Hesitations are sites for nurture; prior to solidification. In-text hesitations fade. Hesitations give us time to clarify our thoughts, rethink our decisions. They are not a token to intellectual weakness, but in fact an example of prudence; of care. *The cost* of contemporary computer-enabled, Western traditions of writing, is an erasure of the emotive subtext that makes part and parcel of much hand-written text.

There is an urge in me to apologise for this excursion; but I won't. I shall not, but *there is no more doubt. Being written; being legible*; having nouns; the right checkbox on a form; a label that feels bearable - these are not merely matters of *comfort* and respect; they are issues of justice and survival. That is what this chapter is about. This preface to the chapter is a harbinger of Arendt; harbinger of the *Banality of Evil*. I am bringing together the ethics of inscription and the banality with which this can go rogue.

This introduction is my intimate way to try to communicate this key message: knowledge inscription is a political act; a curatorial act; a translation-and-transcription; a deed with consequences; a practice;

It is more-than-representation.

She is now too weak to press the ON button on her mobile. I cannot visit her. I cannot hack-fix-shortcircuit her phone's inaccessible design. I can only hope that she will not find herself too isolated, alone in her COVID-19 secured room, now, without access to her mobile. And failing a cure for cancer, I yearn for more inclusive design.

She was sad and appealed to me to fix her mobile.

Yet the phone was working as intended,
merely her body was not.

5.1 Background

5.1.1 Allied literature: Diffraction(s)

In the beginning, there was light and physics and diffraction. Then-*diffraction* referred to a primarily physical process. Donna Haraway [115] came and *appropriated it from physics*. Then Karen Barad [20] picked up Haraway's work and made it their own in return; and so *diffraction* moves on, grows, shrinks, changes, wanders - until here; for now; it pauses; from where it will go on. My preferred iteration is Barad's [20] re-kneaded through my reading:

Barad offers us diffraction as an alternative ~~uonpppe~~ to reflection.

This does not mean that diffraction and reflection ought to be seen in opposition, or as antagonists; no, merely different methods. Their respective employment ought to be a conscious choice and in response to different agendas. They do not merely do things differently; they wholeheartedly do different things.

one

Reflections \neq *Diffraction* The patron of reflections is the mirror. Mirrors enable us to observe, compare, remember. They 'externalise' what is within. Reflecting is a coming-to-terms-with; be this *in the moment* or *post-hoc*. Good reflections 'admit', and good reflections foster clarity through a trust-worthy deed of considering the past to cultivate understanding in the present and knowledge for the future.

Diffraction does some thing else: It is less like a mirror, but more like a CD [82]. One

can see oneself in a CD, but less clearly so; CDs add many other things.

So diffraction for Karen Barad is a way of interfering. It's about creating patterns that show interference. And diffraction might tell us something about the nature of whatever is being diffracted, so in this case it is light. So it might tell us something about the nature of light. Or it might tell us something about the nature of the diffraction apparatus. About the nature of the disc itself.

Fenwick and Doyle [82]

Inter/ferences The CD interferes with *seeing oneself*. **They** do *something* to the light, to one's reflection. A CD is not a mirror^[h] and whilst 'mirroring' *happens*, 'reflection' is not the objective of this exercise. Instead we see that the CD 'does something

^[h]Groundbreaking...

to the light itself'. The light which seemed white to begin with *is anything but*. [Not white! But a *big ol' rainbow!*]

zero

(*Under the hood* 'light' is in the closet.)

Light is queer. Light is queer and electrons are "perverts" [88]. Look at all this stuff inter/^{re.ɪ.ŋ.ɪ.ɪ}/fering with this thesis. Queer nonsense! This is not a ~~method~~ thesis text?

Why diffract [Arendt]? Diffraction is a *method* insofar as I am the CD. I read Arendt. And I listened to Arendt, I also bought the audiobook. I read Arendt in the dim night-light from the screen in the seat in front of me. The LED screen lit the pages of my book. Its light bounced of the pages straight into my eyes. There my lenses turned everything upside down, and my brain spun it around *again*. Now I am the CD. I glow, and shimmer. I shimmer like an orphaned drag queen [209]. I shimmer in_{sp} resistance. 'CD' as in *com-*

pact disc, but just as much as *cross/dresser*. I pass the text back on.

In the plane, I didn't know diffraction; I haven't met my co-author Rita LynneTM/_{u!l!n} - whom I now have entered in a most fertile research collaboration with.

minus one

At the outset, I thought *diffraction* was a method like reflection. A method where *I employ the method of diffraction to the text*, but this is wrong. That would not be diffraction.

I^{passive} *diffract*^{passively} the text^{active}.

I am the CD. We inter/^{re.ɪ.ŋ.ɪ.ɪ}/fer (with) another. Usually I am of the rainbow; but sometimes colours become white. I become explained, through diffraction; I explain through diffraction.

My advice: don't look for *me* too much in the text, or you'll miss Arendt, and she is *so damn worth it*.

5.1.2 Sonic sculpture

In the past, my creative working was once described by others as *STS in practice*. This label very much resonated with me. The sculpture that buttresses this chapter is an interactive soundscape that I have designed for my collaborator who implemented the design according to the concept which I developed.

The intervention was an exhibition-room sized, walkable soundscape. Visitors would walk along a large undulating, illuminated path that was drawn on the floor. Through custom sensor technology we were able to track the visitor's undulating walking-pattern through the room. The visitor's wave-imitating movement would be mapped on an internal scheme and projected on to a *period-tracking-graph*.

Being in the centre to the room would equate to ovulation events whilst being far away from the centre of the room corresponded to inter-menstrual phrases.

Depending on the visitor's location on the path, an ongoing unique soundscape would be produced. The sounds that compromised this soundscapes were contributions gathered in workshops that have taken place with people who experience menstruation. The tools of sonification were *foley*^[i], vocalisations, other sonic forms of expression. Distorting effects were added as required/requested.

The work was produced in response to calls for contributions for the *Data Publics Conference*. *Data Publics* was a conference held at Lancaster University in celebration of the opening of the *Data Science Institute*. The aim of this event was the investigation of the formation and representation of crowds, and clusters in *digital economies*. Calls for this inaugural conferences included academic contributions as well as artistic ones.

This artistic contribution sought to dwell in the difficulty of representing affective and embodied experiences that affect large parts of the population, yet are inherently resistant forms of knowledge that are unlikely to being included in quantified appraisals of researching *data publics*.

Rather than understanding my creative work as an isolated artistic intervention, I rather think of it as experimenting with physical artefacts, and my body and *knowledge* as experimental experimentation(s) with philosophy, knowledge curation and philosophy-in-action. The *sonic sculpture* is a counterweight, complementing my conference contribution paper for the *data publics* conference contribution. .

The central steering element for this intervention was an active endeavour to engage *that which is hard to engage with*. The sculpture therefore is a type of *writing with artefacts* and *writing at the limits*. I understand the process of *externalisations of ideas and philosophy* through this intervention as a form of *writing*; but a *writing with non-words* or more-than-words respectively.



ers? Can *the political walk* be sustained in the setting of an academic conference?

Difficulty 1 : The political walk *Walking*

has been such a rich and guiding practise of learning for me, I sought to explore how I can commodify the practice of *walking politically* for people who are not-me. Can a *practice of walking* be a source of learning for oth-

Difficulty 2 : Ephemerality *Walking* is an inherently ephemeral practise. My racialised walk from Ch.4 was a type of *meta practice* or *metawalk* (a walk where I walk in solidarity with others with similar bodies who have

^[i]The (re)production of everyday sounds through imitation, usually applied to filmed material in the post-production stage.

walked-whilst-*other*, walked-whilst-Brown), was a powerful and rich endeavour. However, not everyone is privileged with the lens of the subaltern; not everyone can access the experiences and meta-experiences of *walking whilst Brown*. This experiment seeks to grasp this ephemerality and capture *some* (or all) of it - and *make it mobile* to the walker.

Difficulty 3 : Menstruation and ~cis-maleness It is easy to connect over subaltern experiences amongst peers; I explicitly and intentionally centred this chapter's intervention on a topic that would be inherently beyond my horizon of *past* and *possible* experiences: In the same way that a reader's whiteness when reading my Ch.3 could stand in the way of *properly* accessing the essential connection amongst Black and Brown bodies across space and time; in this chapter's intervention I put myself in line *with those unable to talk from experience*.

A secondary subject of learning that I sought to gain from this topic is to confront myself with the uncertainties and process of learning about what my position as cis-male bodied creative could be, when endeavouring *to make Feminist art*. Where is the boundary between *amplifying someone else's voice* and *speaking over them*? Did I get this right? Did I know my place in the overall Feminist project?

It is my humble way to build on the work by the Women before me and the Feminist ancestors on which I base my thinking; it is an act of acknowledgement of the intellec-

tual heritage on which I base my work in the present.

Difficulty 4 : Reader/Author Blurredness

The piece puts very much into question neat binaries of author/audience dualisms. Who is the author in the piece; and who the audience? - Is there even such a thing? As much as I am an author of the piece; I am also very much its audience. As much as the informants who have contributed their experiences, memories and sounds to the installation; they are also both: very much authors and very much (the) audience of this piece, they are as much the *audience* as much as the conference attendees of *Data Publics*; they too are *the audience* of the installation and they also are *very much the author of the soundscape*. As much as I am very much the/a author of the piece; so too are the philosopher's and their texts who I read and which have inspired me to address the topic in this way, with questions, with these sensitivities; they too are authors of this work; very much so.

It is once again, an experiment with _{JO} representation at the limits. It is another experiment in how to think about the digitisation of people; respectively a demonstration of a certain degree of futility in any endeavour to codify and isolate *a certain something form within*.

Recently, I came across this love poem which I translated into English that - to me - expresses all these things I mean and I hold dear, concisely and accurately, in a way that brings me joy:

Poesie

Ich will
ein Gedicht lang
deine ungezogene Braut sein,
einen Vers lang
dich ungereimt begehren.

Sei du
meine neue
Handschrift.

D. Leupold

Poetry

I want
for just one single poem
to be your naughty bride,
for one verse
desire you rhymeless.

Be
my new
handwriting.

D. Leupold

5.1.3 Ideation and reasoning underpinning the intervention

Filling in the gaps

I want to be frank about the reasoning that underpinned this chapter. This chapter has begun as an manifestation of anxiety and insecurity, or better; an effort to build an preemptive intellectual, rhetoric and theoretical stronghold against an anticipated critic's siege. Despite my best efforts, this chapter was partially fuelled by an effort to 'fill up' much of what I assumed others may deem to be missing in this thesis. At least those companion-scholars who I was surrounded by at the time of these interventions. I do not want to tell a story of *strength*, of *smooth progression*, of *incremental success without setbacks, without hesitations, without fear, without agenda, without uncertainty*.

Whilst, *by now* I have *no more doubt*^[j], this was not always the case. Hesitations are not instances of stagnation, fallow fields may be idle, but they are not empty. Instances of failure and revision, I believe, are central to the process of learning and in fact preconditions for the happening of the most transformative learnings.

I imagined/gathered that others would not have deemed my work to be 'properly digital', to be 'proper art', even to be 'proper research', and most likely not 'proper HCI'. (At that stage I was still imagining that my work to be placed into the corpus of HCI, or an interdisciplinary domain that includes the discipline of *Computing*). I was also concerned that my work would not be considered 'proper Design' or 'proper art' (Or better: an *artwork of museal quality as well as in appropriate quantity*).

'Proper digital' (and 'proper' HCI) HCI has a long history of liaising with art and using the art/design space in/as research. Often, prototypes of human-computer interaction experiments are visually and conceptually as much at home in a museum, in a live performance as well as in a laboratory [37, 136, 72]. Yet, such work that possesses properties of such art and art-adjacent interventions in HCI is almost without exception using programmable/programmed or other digital components.

Whilst my exploration of touch (Ch.3) very much covers questions and themes that are part-and-parcel of HCI, its journey of inquisition and types of answers yielded, would be a challenging 'sell' to a mainstream HCI audience. Some sub-disciplines of HCIs have a history of using non-computational methods *for* HCI, but my process and framing would nonetheless have made it a substantial task to reconfigure narratives of my work in a manner that would fit. It was thus a clear objective of mine, when designing this practical component for my work, that it must entail a *computational and coded* dimension.

^[j]See Ch.7)

‘Proper art’ My preferred method of inquiry is practice-based reflective embodied research with a strong *ethnographic* and *auto-ethnographic* and *meta-auto-ethnographic*^[k] dimension. Evidently, solitary practice-based, reflective art is often ephemeral in nature. Whilst such art is obviously valid; I explicitly sought to produce an intervention that is distinctly more *museal* in its feel, presentation and its working.

‘Proper theory’ A final - yet central - design decision affecting the emergence of this work was several discussions with peers and a deep sense of uneasiness about my *approach to reading* and *theory*. Whilst I understand my work to be heavily skewed towards the theoretical side of the *concrete-to-abstract spectrum* of doctoral work, I did not rely on ‘theory’ in the more conventional way. By that I mean:

I ‘lacked’ *a firm theoretical grounding*, if *firm theoretical grounding* is equated to

- (1) having a single key author, and
- (2) a single key concept, which becomes applied to
- (3) a solitary topic
- (4) to a discrete end.

My take on ‘theory’ was is more mosaic-esque. I ‘build my version of a theory’. In fact - it dawns on me - that is the overall project; not to ‘employ a theory’ - rather it is to ‘discover’ a theory; to understand it; read it; *live it*. What it means to live a theory shall be the object of this chapter. Look out for it in the conclusion.

I draw together the work of many diverse writers across disciplines and branches and approaches that are traditionally not deemed to stand in relation to each other. Yet, *how I read them, how I see them, how I present(ed) them*, they build a thorough and comprehensive theory that buttresses my overall work. But this may not ‘feel’ like a theory in the conventional sense.. at least it hasn’t to me at the outset of my work; *now* I feel different.

This chapter attests to an alternate version of this thesis where the entity of my work would have been framed under the intellectual high-patronage of *Hanna Arendt*. This chapter echoes a thorough and deep reading of Arendt’s work which I deemed necessary:

- to arm myself against critiques of my academic approach, my way of working and my practice of researching;
- to stay sane in the backdrop of the political environment post-Brexit; post US election 2016, post Trayvon Martyn; post Pulse Disco; whilst children in cages; post ‘Muslim-ban’, post Windrush, post Cambridge Analytica, post ‘all-of-this’

^[k]By that I mean using my body and my history as pars-pro-toto for masses of bodies like mine, engaging in similar practises.

- because Arendt matters.

I thought that my ability to read original^{German} Arendt would be an asset I could valorise. Yet what turned out to be profoundly more important for my reading was the body I had. How my body is_{sq p[NO]} interpreted (today and in 1933); and what dwelling in a body such as mine would have meant for the integrity of *bodyme^{name}* under the *National Socialist* (NS) regime. I read with my body. She analyses *the making of the Jew* and *the production of the Holocaust* - just like others today untangle *the making of the ecosystem concept* [303], the mundaneness of the making and enactments of pathology [5], patenting and property [284, 285], or the translation of life into spreadsheets and databases [79, 225].

5.2 Account

Es ist in der Tat meine Meinung, daß das Böse niemals „radikal“ ist, daß es nur extrem ist und daß es weder Tiefe noch irgendeine dämonische Dimension besitzt. Es kann die ganze Welt überwuchern und verwüsten, eben weil es sich wie Pilze auf der Oberfläche ausbreitet. Es ist „resistent gegen den Gedanken“, [...] weil der Gedanke danach strebt, Tiefe zu erreichen, an die Wurzeln zu gehen und in dem Augenblick, da er sich mit dem Bösen befaßt, wird er vereitelt, weil da nichts ist. Das ist „Banalität“.

Tief aber, und radikal, ist immer nur das Gute.



In the May of 1960, Otto Adolf Eichmann was kidnapped by the Israeli secret service and abducted from his home in Buenos Aires, Argentina. Dubbed *the architect of the Holocaust*, Eichmann was put on trial in Jerusalem, accused in 15 points, including of *crimes against humanity, war crimes, crimes against the Jewish people, and membership in a criminal organisation*. Eichmann could be described as the *logistician-in-chief*, tasked with the process of optimisation and management of the extermination infrastructure of the Jews in the NS occupied territories.

Hannah Arendt witnessed this trial.

She was - amongst many things - a German, a woman, a Jew, a scholar, a refugee, reporter, an independent academic, a former student of Heidegger's, a political theorist *at odds with the field of philosophy*, and much more.

She expected to meet *a monster*, but what she was presented with was a staggeringly trivial man;
 a nobody.
 This shattered her expectations.

Nobodies

The unspeakable deeds of the NS regime to Arendt were not conducted by demonically evil powers, but by nobodies. The acts *these nobodies* conducted were not of diabolic profundness, but deeds of administration, logistics, mechanisation and book-keeping. *Evil* - Arendt identified, possesses purpose, agency, direction, volition and power. The deeds by *these men* were not such. The deeds by the Nazis were those of bureaucrats, administrators, logisticians and 'office workers'.

The Nazis' everyday *practice of the Holocaust* lacked what she, what *we*, what her peers, the survivors, the relatives, what everyone imagined: a profundness and boundless maleficence.

But Eichmann was neither grotesquely evil, of satanic monstrosity, or anything profound in any way, and most certainly not demonically intelligent. In her own words he "exuded stupefying mediocrity and utter [ludicrous] "dumbness"". This man, for Arendt, brought forward the concept *of the Banality of Evil*.

Origins of the *Origins*

Life, to Arendt, is a metaphoric and literal marketplace of ideas. It is a forum where ideas are exchanged, compared, bartered against each other, accepted, declined, hybridised, copied, counterfeited, innovated and/or set in competition. Ideas (and the humans that carry them) are in a constant space of engagement with each other. Ideas and people emerge at their junctures and through intersection. Arendt witnessed what happens when this ongoing meeting and engagement stops, when totalitarianism undermines it; and more importantly *why* totalitarian regimes atomise people.

Hannah was suspicious and surgical with the process of bureaucratisation and the loss of the individual and humanity in administrative systems. To Arendt, *Men*^[1] have a *name* and a *body*.

‘*Name*’

stands for all his personal
and social affordances

and

‘*body*’

for his physical integrity.

Bureaucratisation severs this bond and de-contextualises *the person*. When I become translated into a file; when I find myself in a spreadsheet, my name, my identity and my affordances sunder. Filing cabinets and databases are systems which profoundly affect how we relate to each other/ how we become related to another.

That is: those relations *amongst those within the database*,

as much as those *from the inhabitants of the filing cabinet with the administering bureaucrat*.

Mediated in such a way; within $\mu\delta\sigma\eta\sigma\iota\mu\eta$ the medium of the database, our social relations become severed. Mark Poster refers to this as *interpellations* of identity through databases - be they digital or not.

Such systems define and order their inhabitants in accordance to functions, variables and affects; such as *jobholder* $\mu\theta\omicron\mu$ or value $X/y/z$. Our ‘*names*’ get lost somewhere in this translation. Processed like this, an analogy dawns on me... I wonder how much ‘the humble paper spreadsheet’ and *Eichmann’s filing cabinet*, and *mediated digitised systems* may be a lot alike? *When mediated*, an individual becomes stripped of one’s ‘name’ - and all that remains is a mute organic lump on one hand and a muted decontextualised signifier incarcerated in the spreadsheet/cabinet/cell.

This disembodiment goes both ways: the architects, administrators and operators of a system can also find themselves severed from their *administrees*^[m]. In the extremest cases such as Eichmann, they forget their own humanity, and replace their own humanity *and*

^[1]Arendt, as was custom at the time of her writing, used *the male* and he/him/his pronouns as *pars pro toto*, i.e. to stand in for the whole of humanity. On one hand it emphasises the notion that *the default human* is usually conceived to be *a certain type of body*; but it is also merely staying true to her writing and how made use of these terms. Whilst Arendt had a nuanced relationship with *what we would today refer to as Feminism*, implying that her use of language implies a patriarchal stance would be a malignant interpretation.

^[m]Is it telling that there isn’t even a *real* word for *those being administered*? [I ask again - *Who/what* is missing?]

themselves with a disembodied function. And in absence of a human *thinking* consciousness, *evil* can occur.

Thinking humans, *engaged humans* have foresight, responsibility, afterthought, intent and all other affordances that buttress sociality. But when *through a systematic effort of dehumanisation* names and bodies get severed

- and if *administrators or architects* misunderstand themselves
as
computing tools who breathe and eat,

the foundation for any responsible *acting* vanishes. Thinking vanishes. And the worst of Evil can happen.

The state of Statehood

The 20th century has proven the enlightened idea *that humans have inalienable rights by virtue of being-human* wrong. It is not a matter of being born as someone of the species *Homo sapiens* that endows one's body with inalienable rights. Instead it is the state of *Nationhood* that render's one's body worthy of receiving *human rights* [11].

Non-human('s) bodies can attest to this: flags [46], aircraft carriers [■], military cemeteries [126], embassies [151], airports [203], nuclear power stations [n], University senate buildings [o][p] - [T]he rights their bodies' enjoy far exceed the rights of refugees, migrants, victims of war; and those of other "infra-humans" (cf. [94, 95]). *The stateless individual has no rights* [10]. *Rights* are not held; rights are *given* (cf. [11, 10]). Who gets to give such rights? It is *Men* in positions able to bestow these onto others; onto those who they see fit. It is through the attribution of *nationhood* with its protecting privileges, *humanness and humanity* emerges. The possession of rights therefore emerges *in relation* - it is not *intrinsic*. Humanity is not an intrinsic property, and *Humanness* is not bound to being a member of *a certain species* as the [E]nlightenment may have promised; [H]uman rights, the *rights of humans*, and the *rights as a human* are a concession, and are conditional. For better or worse then it seems that:

Humans are responsible for humans.

For architects and administrators of filing cabinets this means the following: it is imperative that these agents are in an ongoing process of recognising and cultivating their own humanity;

[n][\[https://www.theguardian.com/environment/2011/oct/03/hinkley-point-protest-nuclear-power\]](https://www.theguardian.com/environment/2011/oct/03/hinkley-point-protest-nuclear-power)

[o][\[https://www.theguardian.com/education/2010/dec/30/kent-university-tuition-fees-protest\]](https://www.theguardian.com/education/2010/dec/30/kent-university-tuition-fees-protest)

[p]<https://www.manchestereveningnews.co.uk/news/greater-manchester-news/rough-sleepers-speak-out-after-11574469>

as much as they need to think of *us* (those who inhabit the cabinets) as humans. These cabinets are spaces we inhabit; VR-buildings, databases, codescapes, SMART-cities, or any other inhabited infrastructure. *We* will have to inhabit these systems; have to cope-deal-and-flourish^{dwell} with ^{уиуиуи} them. There are many ways how our bodies inhabit *edifices of code*. Databases, spreadsheets, and governmental online forms too are *digiscapes* that I am ordered to inhabit.

The risks that dwelling in these spaces entails are significant. The degree of how well I fit these structures depends on the foresight of the designer, their willingness to surrender power, their thoughtfulness-in-designing. *Thoughtful* databases require *custodians* (in the sense of *thinking mindful and engaged beings*). Not just *architects* or *designers* whose primary allegiance rests with someone other than their *inhabitants*. Only when Thinking^{as a practise} do we stand a chance of preventing thoughtlessness and thereby avoid harm and evil.

The Nazi regime's achievement was a complete reversal of conventionally understood Good and Evil- *where Good acts were turned unthinkable*, through systems of fear, oppression, internalisation and nothing short of a complete inversion of morals and a suffocation of deep thought. Unruly thoughts were disincentivised and forbidden; and citizens' minds became dociled. *In the absence of thought* average men like Eichmann were capable of doing extreme deeds. Dociled, these humans were capable of doing extreme deeds, as I will explore further. They committed *extreme deeds* but in a banal fashion. Banality was the catalyst of death, not radical Evil. The Holocaust was deconstructed and bureaucratised *ad infinitum* until its meaning vanished; practical genocide became bureaucratic officework; Death was not instantiated through a thousand cuts, but through one million dea^d _{/A}ening *translations*.

Arendt not only refuses to attest to Eichmann any daemonic depth, evil genius or unspeakable wickedness; the opposite is true. Arendt diagnoses Eichmann with a baffling amount of stupidity and intellectual impotence; even "an inability to speak"[258, p.268],[11, p.18]. This being not the result of a potential disability or neuropathy, but a consequence of an ongoing process of self-brainwashing and dehumanisation. Through this, Eichmann attained a state of inability to think and to perceive.

Only through a sustained collective inability to think that encompassed all administrative echelons of the NS administration, was it possible to *practice the Holocaust* and to keep this system running, a system whose goal it was to destroy humans. Arendt's lessons provide a warning when dealing with any system whose job it is to mediate people through systems.

The separation of name and body: the split of *biography* and *lived sociality* is a central aspect of bureaucratic administration. *Lived life* resists any form of archiving; only a dociled caricature can be bound into the filing cabinet. Why caricatures? By that I mean that these translations are produced in service of a specific agenda; these transformations are not

universal.

Arendt opens up the socio-ethical implications of this transformation of human^{ness/} /*Λη*.

5.2.1 Art as method to *return to/maintain* [T]hought

In the context of the issue of data and (the) publics we proposed *art* as means to counter any assurances of certainty and actively stress non-*mobile* affects of being-human. In the backdrop of this, I understand my art-work as a *diegetic*^[q] *prototype* of further work that seeks to engage our critical faculties, remind us to remain modest, *when confronted with the certainty of data* and to always engage a critical mind when debating data and the public and hearing the promises of *data publics*. There is no denying that data *is* indeed revealing; but it also produces the opposite.

To some extent we believe(d) that art can mitigate the effects of an absence of diverse and subaltern voices amongst cabinet-makers,

at least in some ways and

to some extent and

for some time.

Our work is intended to have fostered ‘serious thought’ (cf. Shneidman [250] discussed later in this chapter). This *serious thought* is intended to oppose *thoughtlessness*. Thoughtlessness - being the origin and catalyst of destruction, not [E]vil. And how do we propose the counteraction of thoughtlessness? Thought in all its myriad of forms: philosophy, critique, art - and all other forms of *mindful engagement*. Our soundscape- artwork wants to be a reminder of this. A *memento mori* to our chase of increasingly more data, and its promise(s).

Our work wants to halt this race to collect more data. We want to halt, dwell and *wrestle with the uncollectable*. We resign to the realisation(s) that we never fully ‘get it’ that translations across digitised systems are always partial, political, and curatorial.

We ‘get’ neither the feelings codified in the soundscape, or the people inhabiting our databases.

This *not-getting-it* is the point!

^[q]A type of storytelling that demonstrates a future-world scenario through immersion, rather than through explanation or external contextualisation. The *visitor* can experience *data-ambiguity* and is invited to reflect on the nature of *that which is hard to commodify in databases*.

The point is that you don't get it. Or maybe some kind of get it, but also not get it. (Kind of get it.) Because we never 'really' do. And the fact that you^{we}_I don't get it, is only way to be certain on how-to-relate to our piece. The installation, as everything in this thesis problematises the boundaries of commodification...

and forces (you) to actualise a position as an active participant in this process of knowledge-mobilisation; forces you to *experience* (not witness).

5.2.2 Arendt interpreted

I now indeed believe that evil acts are never radical, but they can only ever be extreme; that there is nothing demonic or profound about them. Evil can engulf and ravage the whole of the world. It is like a fungus. But just like the fungus, it only ever happens on the surface. It rejects thought, for thought strives for depth. And in the moment 'thought' meets 'evil', it must vanish - for evil has nothing to offer to thought. It has no depth, which is what thought seeks. That is the banality, of which I speak. "Deep" and "radical"? - only 'good' can be those things. It is indeed my opinion now that evil is never "radical," that it is only extreme, and that it possesses neither depth nor any demonic dimensions.

Hannah Arendt, (transl. by me) [12, p.78]

The cruelty of the filing cabinet

Majumdar [184]'s reading of Arendt's work is an appropriate starting point to explore academic voices on her work. To Majumdar, bureaucratisation is an imperative consequence of the mindset of the enlightenment, alongside its sibling-offshoots of: industrialisation, modernisation, and the fetishisation of optimisation. The mindset that venerated the efficiency of automatised was instrumental in large scale generation of *new things*, but could equally be applied to increase the efficiency and speed of the *processes of destruction*. *Factorylining destruction* in the industrial mindset was unimagined until then. Industry's allure the promise of production and profit; not self-referential destruction (destruction for destruction's sake).

The logic of production became reversed. It was turned into a new form that - detached from [R]eason became the logic to the extermination of the Jewish population of Germany, alongside other unwanted groups and individuals. The unspeakable deeds of the NS regime were acts of unimaginable evil that were enacted through a dehumanising apparatus of bureaucracy; a system that Majumdar calls:

[t]he cruelty of the filing cabinet.

Great progress, great speed, and the great banality of evil. The dream of autobahns reaching its natural conclusion in Auschwitz.

Majumdar [184, p.259]

Picking up the philosophy of aesthetics (in the classical sense as *philosophy of perception*) Kristeva [162] describes an inseparability of Eichmann's ability to act deeply unethical as a consequence of his *inability to perceive his own deeds*. Only through a complete lack of reflection or introspection regarding one's own deeds, was the NS regime able to establish a moral vacuum in which unspeakable deeds could be enacted. The mechanistic mindset of the enlightenment was contorted in such a way that its dehumanising effects were not a mere side-effect of modernism; rather the regime fostered these dehumanising side effects and accentuated them. *The practice of the Holocaust* was dissected and transformed into a fractalised and distributed collection of banal and *digestible acts* which rendered the consequences of these action inappreciable to aesthetic judgement. The dehumanising affordances of *the practised Holocaust* rendered it impossible to evaluate one's deeds with reason or confront them with morality, civility or humanity. Arendt thus postulates a blockage of the ability to judge one's own deeds. It is a conclusion central to her work, and a central unique feature, which is why I am drawn to her work.

Speculative Arendt: Judgement as act of narration and path/condition for justice

Arendt obviously never commented on *issues of the digital* yet her thinking and writing profoundly influenced my stance, ethics and approach to it. Hence speculative. Thus, it is not 'me putting words in her mouth', but rather an account of my emancipated reading of her work; a valorisation of an openly biased, *situated* [113], *standpointed* [122], *diffracted* [20], *feminist reading practice* [206] that takes ownership and pride in its ravaging affordances. It is an inference of her reasoning; an abduction of her thoughts; an account of her work through a personal hermeneutic.

Arendt problematises potential implications of *being mediated* through the lens of *being translated* and how *the filing cabinet* can dehumanise a person; and how a *dehumanised*

human can find themselves expendable. Framed like this, Arendt becomes pivotal for thinking about *humans in mediated environments*. Ethical and moral acting are entwined with the ability to *judge*.

Jackson [147] explores Arendt's thinking *on judgement* further.

Thinking and [*J*] *judgement*, for Arendt are not isolated abstract intellectual tasks (as imagined in the Platonic tradition), but are grounded in one's social setting, produced through social relations and through a *making* and *doing* [147]. In other words, Arendt repositions the *locus of thought* from the realm of the *vita contemplativa* (the realm of the intellectual) into the *vita activa* (the realm of lived relationships and material-social practises) [13]. What she intends to do with this mobilisation is to reject the idea that *thinking* is reserved to "the professional thinkers" [323, p.354],

instead Arendt democratises *thinking*.

The evil conducted by the Nazis was that it was not a type of *motivated evil*, i.e. one that benefits someone at the expense of another. "It was simply evil for its own sake" [323, p.325]. Evil as a teleology has not been documented before. Das Böse als Selbstzweck [r] "breaks down all standards as we know" [10, p.141]. It was a period of systematic thoughtlessness, and with that a systematic prevention of moral judgement. The inability to *judge* was an essential condition for the possibility of the Holocaust.

This could be appraised through the lens of aesthetics (as study of perception and judgement). Notwithstanding [E]vil can be deconstructed as *an aesthetic shortcoming*. It was the consequence of an inability to reflect and an inability to perceive oneself and one's actions. Fundamentally then, an inability to think. It is *the absence of thought* that made reflection, recognition and ethics itself impossible.

Thoughtlessness precluded judgement and thereby any possibility for justice. Such an 'Arendtian judgement' is an inherently *thoughtful* act.

But not *thoughtful* in the sense of:
being situated in abstraction and philosophical reflection,
 but rather:
 as a result of care and *being social*
 and recognising one's own position
 as a social-being-amongst-peers.

Given the extremeness of the deeds by the NS regime, engaging in a fast and reactionary *abstract judgement* could no-doubt be tempting. Reading Arendt's *Banality of Evil*, there can

[r]Evil for its own sake

be no mistake that envisaged *de facto* outcome of Eichmann's deeds was obvious, right from the outset. The objective of the administration and the bureaucracy was genocide, but one that is deconstructed and de-personified. Reading her report, I become convinced that the entity of that particular piece of writing is the documentation of her process of conducting a *social judgement*; a judgement in the realm of the *vita activa*. Arendt denies herself to give into the temptation to judge Eichmann in an inflected and reactionary fashion, even if the extremeness of his deeds would entitle her to such a move. Instead, she seeks to *judge in a manner that strives to create justice*. As for her, even in the case of 'somebody as wicked as Eichmann' (cf. [147])

she practices a type of judgement as a recognition of her own humanity as well as the
humanity of *the other*.

Arendt establishes a framework of judgement in which the creation of justice must be preceded (or co-incides) with the creation of humanity, but a call to admitting *humanity* to somebody as wicked as Eichmann is a profoundly radical and unsettling act.

Deeply hurt by what she wrote, contemporaries of Arendt deemed such a proposition as tactless and her call for the admittance of *humanity* to the Nazis rendered her in the eyes of many a *persona non grata*. The implications of committing to a *thoughtful engagement with Eichmann* are severe.

From my diary:^[s] It is evidently not ^{can-not-be} my place to *debate, discuss* or *evaluate* the sensitivities of her contemporaries, many of them personally deeply affected by the consequences of the deeds by the NS regime. I see it as my endeavour in this text to provide my reading of her thinking; particularly for those sections that are deemed, even by scholars of political science, particularly difficult to read [■]. I seek to give my reading of her work, in the backdrop of my reading practice and in the backdrop of my search for *an ethic for the digital*.

Submission as judgement Arendt re-positions the locus of thought. Arendt rejects the Platonic idea of judgement and justice taking place in disembodied intellectual isolation; instead judgement ^{social} emerges in-and-through-lived-social-relationships: That means judgement is manifested-and-caused through social relationships and bound to context and local setting.

Transitioning from a *contemplative judgement*^{abstract} to an *active judgement*^{social} is for Furani [90] *a queering act of submission*. One surrenders

^[s]Revised 2020, original note from 2017.

one's own sovereignty of insular thinking

for

a relational thinking that takes place *between* individuals.

It is a relinquishing of a type of power that comes from being able to rely on a type of *judging* in an insular fashion which takes place *within*. By relocating the site of judgement *into the social space*, Furani identifies a waiver of sovereignty. Arendt subscribes to an *embedded justice* - a socially grounded verdict. Such Arendtian *social judgements* therefore require an abduction of power:

Arendt *would* have every right to condemn Eichmann, but she refuses to do this. She surrenders her prerogative to judge and instead engages in serious thought as precursor to the possibility of just judgement.

In her pursuit of a satisfying state of justice, what Arendt was willing to relinquish her insular entitlement to judicialise. In its place she engaged in a social practice of judgement that explores different narratives and a multitude of forms of narrative crafting. Through social embedding she would get a true sense of the assemblages of events that have led to the *status quo*. Arendt was willing to surrender power in her strive for justice - even when confronted with Eichmann.

The abdication this power ensues with uncertainty and maybe even a certain degree of pain, but the pay-off is a retention of dignity in the face of irreparable violence. Arendt's dignity emerges out of the creation of justice; a new form of justice, much bigger than Eichmann.

An inability to narrate as form of inability to attain justice

Arendt noted that moral norms, moral feelings and intelligence were unable to prevent the Holocaust; - the Holocaust rendered the ancient-Greek conception of ethics superfluous:

The Aristotelian trinity of good/divine/beautiful has been perverted.

Doing the unthinkable felt like office work.

Orchestrating the Holocaust was perceived as a mere 'labour of logistics'.

Any hopes of an *affective ethics of the body* has failed. These bodies did not sense the extend of horror that they caused. There was no affective reaction, no visceral "yuck factor" [210] that stopped the Holocaust.

Any assumptions of humans possessing a primordial sense of nociception^[t] matters of ethics and morals has been voided.^[u]

Arendt was left with the metaphorical rubbles of ethics and aesthetics which needed doing away with. Yet, when we cannot trust *the body*, cannot trust *reason*, cannot trust *the state*^{hood}, cannot trust morality, cannot trust law, cannot trust oneself and one's senses; who/what then can we trust? Arendt's addendum to Descartes becoming

Cogito ergo sum, but being does not come with a promise of morality.

Inability to narrate The Nazis changed one's ability to tell stories, tell one's own story, and *tell oneself*. Narration was stifled.

The Nazis alteration of *perception of self* and *perception of others* puts into question one's own capacity to act ethically. This begets a collective decay of morality through short-circuiting collective [E]thics and norms. If neither *perception of self* and *perception of others* can be taken for granted, neither *intelligence* or *morals* can be considered trustworthy barriers to [E]vil [211].

Without the ability to narrate one is unable to recognise justice or articulate morality. This inability is contingent on thoughtlessness. Eichmann *banalises* his own narrative [214]. Eichmann is committed to sustaining a distributed interpretation of his role in enacting the Holocaust. Arendt observes a man unable to give a narrative of his life. Eichmann is unable to speak in anything but *bureaucratese* and clichés. He repeats the grotesque fabrications the NS regime fostered, and after which Eichmann lived. Eichmann did not internalise these thoughts, he *lived them*.

He acted in a manner that aligned with them, he *lived them* in the manner that - they sustained Eichmann's life. Eichmann was dependant on his banalized narration of his own deeds and his life. Eichmann's inability to speak in *real language*, *speak with humans* stems from that. Only within convoluted bureaucratic distorted narrations of the Holocaust and his actions Eichmann was able to maintain his self-deceptions. This is not possible in the plain light of common speech.

Without the scaffolding of his institutional fabrications, Eichmann's existence and deeds would crash onto _{our} him.

He is not rejecting his deeds

^[t]A bodily the *sense of pain*.

^[u]I am urging the reader to consider this idea and bring it into conversation with drone deployment, drone technology, drone-killings; its relationship with computer games, computer game design, the military-defence industry's entanglement and technology development. All these deeply related; but beyond the scope of *this* thesis.

I beseech the reader to consult the twitter feed of @dronestream.

or rejecting the consequences of his actions -
he cannot think them.

The difference being that one (1) is an active refusal to concede the truth *versus* the other (2) being an epistemological inability to *grasp* the causality between one's actions and their consequences. Eichmann only grasped his practice as one of *administration and logistics*; not a practise of *administering death*. He is (in)utterly *unable to think*. Any move towards *thinking* would make Eichmann crumble and unable to live with his deeds, argues Arendt.

Thus Eichmann banalizes his narrative.

A narrative approach to Ethics I want to build on this notion of the *banality of narrative*. Eichmann's inability to see himself manifests in two rejections; on one hand he cannot recognise his position as an *author* of the Holocaust, and in fact, he cannot grasp the Holocaust altogether. He is unable to narrate himself of the events he was causally interwoven with.

"[S]torytelling does not necessarily entail any realisations of what it means to be political, i.e. an acting human agent" [214, p.743]. 'Storytelling' as employed by Norberg must be unpacked in this context. Norberg's 'storytelling' describes the attempt or process of narrate one's life; indiscriminate if the account is *meaningful* or *legitimate*. Eichmann *does tell his story* - but his narration is one that is grotesquely at odds with History *as it has occurred as a consequence of his actions*.

Eichmann's clichés are not "only [...] isolated phrases, but of entire plots that impose a spurious order on human lives" [214, p.743]. Arendt's identifies clichés not merely in isolated phrases, Eichmann in fact *banalizes* entire plots.

Thus Ethics and *writing stories* emerge as fundamentally connected.

How we tell stories is a manifestation and canonisation of our epistemologies and in return impacts on how others around us perceive and build worlds. *Arendtian* ethics take place as the intersection of epistemology, ethics and narration/ inscription/ codification. It is thus *an ethics of a textual practise*. In harmony with my *reading* of STS; Arendt exploits/investigates *the absence of meaning* in Eichmann's narrative and dwells *in his intellectual impotence* and draws out profound conclusions on the nature of ethics and *being*. She asked *what is missing*; she cared about *how stories are told* and sought to *tell a story better*. I read her as a practitioner of STS as I see ^{and strive to practice} it.

The Banality of Evil - The Ambivalence of Nuance - The Perversity of Brilliance

To her contemporaries, the way Arendt engaged with the topic of the Holocaust and

- the appeal for a granting of *humanity* towards Eichmann,
- the rigour of her analytical gaze with which *she told better^[v] stories*; and
- the commodification of the horrors of the NS regimes for the context of advancing abstract political theory

was deemed profoundly inappropriate and tactless (cf. [224]).

Today, finally - it seems - that Arendt's name and work become utterable, even in Israel, even amongst more conservative voices (e.g. [135]). Whilst in 1962 Podhoretz (a scholar of her time) still wrote about Arendt's "the perversion of brilliance" and decried her misguided tonedearfness as it pertains to her report.

[T]here could hardly be a more telling example than this section of her book of the intellectual perversity that can result from the pursuit of brilliance by a mind infatuated with its own agility and bent on generating dazzle.

Podhoretz [224, para.23]

Faced with the horrors of the Nazi regime Arendt reacted with irony, laughter and irreverence [158]. These undertones of subversion, irony and focusing on *the grotesque* is a consistent undertone in Arendt's work when it concerns the topic of the Holocaust. For Podhoretz, this was the end of their friendship.

For 1962 this is too much for the New York Jewish (and non-Jewish) intellectual class to bear. Frankly, it doesn't go down easy in 2013, either. [...] It is to Israel's great strength, however, that it came not in the form of a unanimous revenge killing, but with giving witness, no matter how painful. Moreover, Arendt's dispassionate commentary, even if unpleasant, made the experience even more profound.

Hoffmann [135, para.8]

Arendt teaches us how to read history; re/read the present; read oneself and act accordingly. Arendt compels us to think without pause, to act without assurance. She teaches us how to read-live-judge-look; and through investigating the nature of narrating one-self, Arendt teaches us nothing less than how to *be*.

^[v]in the sense of *more nuance and ambivalent*

5.2.3 *How I read and Why I write*

“I felt like a spurned lover [. ... O]nly in this case it was a seductive idea (of suicide notes as the royal road to the unconscious) that had betrayed me.”

Shneidman [250, p.119]

Shneidman reflects on his long life and how his approach and *reading* has changed from childhood to the moment of writing (being in his late 80s). Shneidman’s research was concerned with the study of suicides notes to get a better grasp of what happens in these extreme situations. However, counter to his anticipation, Shneidman admits his frustrations and disillusion when engaging with these *ultimate pieces of writing*. His hope and assumption was that these letters would offer him *a shortcut into the human psyche; a direct gateway into the human condition*. Instead, the golden thread of these letters was a staggering degree of triviality.^[w] Confronted with such triviality, Shneidman was drawn to Arendt’s *Banality of Evil* as lens through which he recontextualises and reinterprets these writings.

In the same way that Arendt *dethrones* Eichmann from his allure of *profoundness*, Shneidman finds is drawn to conduct a similar *humanisation* to the authors of ‘his’ letters. Just like Arendt turned Eichmann from ‘monster’ into ‘human’; Shneidman would turn his ‘tragic heroes’ into *real people*. In our society, he states, anything death-related becomes imbued with an allure of “reverence and awe *any words* [...] that are part of a death-oriented document and thus we tend to think of suicide notes as almost sacred and expansive pieces of writing” [250, p.119, emphasis in original]. He establishes a derivative of Arendt’s *banality*, a derivative of compassion; a empathetic proposition of a *banality of suicide*.^[x] He seeks to lift the allure of tragedy and the veil of mysticism that *death* exudes.

Death’s sanctity, to him, is not *conducive* to understanding the deceased; it is not *conducive* to understanding what has driven *them* into death; it is not conducive to understand *those amongst us who are living; but find themselves in similar circumstances*. Shneidman asserts that people who committ(ed) suicide, must not be *read as tragic heroes, victims, patients, or damaged or sick individuals* - they are “butchers, postmen, bus drivers, housewives, accountants, students, retirees, unemployed—ordinaries” [250, p.119]. They were *people*, and more than that,

they are *us in different circumstances*.

^[w]He does not specify or illustrate further what constitutes such a *trivial message*, but I filled in this gap with expressions as to *which brand, type and regimen of feeding ought to be kept up for a potential outliving pet*. For any loving pet owner, such specifications appear vitally important information; but from the perspective of a posthumous reading of these letters, they also must appear *lacking closure*.

^[x]He hints with care at the hazard that comes with proposing such a phrase.

Hart [128] concludes that only *serious writing*: i.e. *the kind of writing which does not begin or end but is part and parcel of a practice of engagement and revision*, can attempt to fulfil or compliment perception; can deter thoughtlessness. *Writing* therefore in this sense is *a lived practice*, not a mere act of inscription. It is a continuous (re)visiting of internal impressions, externalisations of impressions, juxtaposition of interpretations and comparison of expressions. The words *we* produce are a mere by-product of *a life examined*.

An Arendtian practise of writing is not concerned with words, but with *rigour in thought* and a *Heimatgefühl* ^[y], when others understand in the same way. Whilst *writing* may be a means to gather economic benefit, anticipate recognition, leave a legacy, seek knowledge exchange or mobilisation of knowledge, “pursue tenure” [128, p.1603], *engaged writing-thinking becomes a means of telling better stories, and telling stories better*.

It is indifferent if this writing is *textual*, or code.

Arendt’s genius that buttresses *the Banality of Evil* becomes evident when reviewed in such a light. On one hand it is a method through which Arendt observes *against the grain* - and unpacks Eichmann’s story with such surgical accuracy and nuance, that it risked to unsettle many *adjacent* myths and traumas; disturbed much needed amnesia and undermined victims’ survival strategies to *move on from the past*. Her rigour was unseen; but a price for the gains in political insight and understanding, was hurt in *adjacent* bystanders. Yet, the same method, - whilst enlightening global politics of the 20th century,

this same method,
this same hermeneutic

was able to foster *a means to read in a manner* that sparks compassion with *those amongst us who have hurt more than the rest*.

It is through this approach, of reading-writing-thinking that takes place in one swoop, that Arendt offers us not only *an Ethic for everyday life*, she also provides us with a new, much needed, ethic that applies when inhabiting and designing man-made scapes, including spreadsheets, databases, textscapes, *digiscapes*.

It is at this nexus where *representation*, ethics and morality, design and art encounter one-another. At this impossible nexus that transects philosophy, art, technology, poetics and *the body* I propose that theorist Artendt is offering us a moral, intellectual, and affective toolbox to remain thoughtful and engage with all of these at once.

^[y]A feeling of having *arrived at home*.

5.3 Implications

5.3.1 Final Somatic considerations on body-thinking

Getting to her relevance *for the digital context* in this thesis through the traditional path of academic analysis would be justified (and necessary) but is beyond the scope of my work; and beyond what a single thesis can hold. Hence the need for a compassionate *diffraction* of her work that asks for trust and suspension of disbelief on the side of the reader, and a hope for posthumous sanction and approbation by Arendt for my appropriation of her work.

I understand my work to be profoundly shaped by her. Rather than framing *speculative Arendt* as ‘me putting words in her mouth’, I want this passage to be read as a reverence for her body of work that was and remains pivotally important to *think through* the human condition.

Shaped by her scholarship, her biography, her visceral encounters with the NS regime, her memories and ongoing confrontations with the violence that has been committed to the Jewish people and all other victims of the NS regime, shaped by all this Arendt ~~decided to resist. chose to resist. resisted.~~ Arendt observed the Nazis, and their deeds, and their institutions and their underpinning; but it was *an active looking*; a resistant gaze and an undermining practise of observation. Arendt did not allow herself to become *object* of her narrative; she resisted and remained subject. This thinking, was not an intellectual exercise of analysis (in the academic-philosophical sense), it was a mechanism for literal survival. A means to remain legible; a labour of writing oneself to deter erasure.

In the work that buttressed this chapter, I wanted to explore the medium of ‘movement’ and ‘the body as part of the sculpture’ and explore what it means to be ‘designing with time’. I usually ‘design backwards’ - I externalise what I want to have achieved with my work. My notes from the outset described the criteria above and are concluded with the label *an invisible sonic sculpture where ‘movement’ is a didactic medium.*

Audience/listener/walker bodies

I understand my project to be one that is concerned with queering reading and writing more and more. Queer the notion that it is a disembodied intellectual endeavour; and instead make a case for a material practise and a bodily craft. I want to unsettle the boundaries of reading and writing; in fact, I want to demonstrate explicitly in the accounts of my work, how *my* craft of writing is fundamentally an exploration of "how I am being read". My craft-of-writing is not a predecessor of "my-text-being-read". Questions on "how I am read" in many instances preceded notions of *how I write*; and in other parts, my writing is a survival strategy for me;

and an act of self-defence against hegemonical rules of oppression; rules that are disguised as "regulations" - "custom" - "precedence" - "best practice" - "good practice" - "proper English" - "proper HCI".

This is an experiment in writing. In how to 'write with the body'; or 'write for the body'. Write with *not-words*. Explore deeply that which is beyond words, in a medium beyond words, in a temporality (an ephemeral time) that is most-untextual in nature; - simply *go deep where text can't go*. Go boldly beyond that which is utterable; that which is only feelable (to some) and which in my case is fully un-feelable altogether.

Arendt: "Ich muss verstehen. Zu diesem Verstehen gehört bei mir auch das Schreiben. Das Schreiben ist noch mit in dem Verstehensprozess."

Gaus: "Wenn Sie schreiben dient es ihrem eigenen weiteren erkennen.^(?)"

Arendt: "Ja weil jetzt bestimmte Dinge festgelegt sind.

Nehmen wir an man hätte ein sehr gutes Gedächtnis, so das man wirklich alles behält was man denkt... Ich zweifele sehr daran - da ich meine Faulheit kenne - dass ich je irgendetwas notiert hätte."

Gaus: "Wenn sie ein solches Gedächtnis hätten..."

Arendt: "...habe ich nicht⁽¹⁾. Das heisst worauf es mir ankommt ist der Denkprozess selber."

Arendt: "I urge to understand. And part of this pursuit of understanding is the act of writing. Writing is implicated in this process of understanding."

Gaus: "Writing is an aid in your personal process of clarification.^(?)"

Arendt: "Yes, as suddenly, things become consolidated.

Let us assume, one had a truly remarkable memory, where one remembers truly all one has ever thought... I sincerely doubt - knowing my own laziness - that I would have ever made note of anything."

Gaus: "Had you such a memory..."

Arendt: "... but I don't⁽¹⁾. What matters to me is the very process of understanding and *thinking* (in) itself."

5.4 Summary, Conclusion, Outlook

5.4.1 Summary

Diffraction as I understand it is the practice of ‘staring so hard into the deep and asking the abyss what *they* see’. My inspection of the process of commodification is so surgical - it taught me about *the (un)ethics of databasing* and *Hannah Arendt*, it taught me about life, living and and living an ethical life; it taught me about my practice of instantiating knowledge in this thesis. It brought me to get a sense of the limits of the English language; and drew me to look at it with my native tongue, with Japanese calligraphic traditions, with my own sex and gender and my *not-being-a-womanness*.

As much as my intervention politicises the bodies of the people who gifted *us* their sounds, the sculpture looks back at me; looks back at the ‘*visitor*’ reader. It draws heavily on my academic anxieties - and strives to resist the need to fulfil ‘what I imagine I ought to say’ as I strive to remain faithful to ‘what the intervention teaches me’. But the intervention is also many other things: I want the work to be understood as well as an optimistic and abstract envisioning of some of the affordances that we envisage when I_{/əM/} dream of ‘*databasing*’ in the future.

It drew me to write a poem (in press) published privately by Kieran Cutting, where I draw on the Afrofuturist tradition. It is a text where I *dream of a library in 500 years*. I imagine a teaching space that is visceral - that is authoritative, grounded in geography, time, sex, gender, family, history, ecology, relationship, season and climate. It is the same dream I had when I imagined the sonic sculpture at the centre of this chapter.

Arendt compels us to think without safety net; think without pause; think without nostalgia or melancholy. Thinking is serious business; but how can one think without fatiguing or exhaustion? After all, thinking is hard and tiresome.

It is *serious* business. It is that thinking is not only aⁿ exhausting part of life to live ethically,

it is that thinking is life.

To *be is to live*.
To study *is to live*;
to live *is to learn*;
and to *learn is to be*;
and being *is relational*.

And viewed like that, ‘methodology’, Methodology, and Method reveals itself as a rule-set for *thinking*;

and science-writing the commodification of thoughts.

As we approach this intersection where *a thinking that is of life* becomes confronted with *the violence of data-basing*, of inscription, I am placing this text, this sculpture and this life, as propositional artefact and diegesis to make a case for a new type of text. A new handwriting. A case and example for

for knowledge that resists and [T]ext that/ $\frac{\text{OUM}}{\text{OUM}}$ / looks back.

5.4.2 Conclusion

The move to discussing code feels like a bit too big a leap?

I don't speak code. [Lies.] But if I did, I would *look under the hood* of Facebook; Twitter and above all Microsoft® Teams™. A hilariously odd piece of software; so absurd, so pitiful, it makes me smile warmly with nostalgia. Rather let it frustrate me though, it makes me laugh out loud on a daily basis; smile at its terrible user-journeys, roll my eyes at its unintuitive hiding of functions and settings; its awkward attempt to intersect firm organisational hierarchies with informal emoji and GIF-culture. A deeply bizarre piece of software that unexpectedly slid into the nexus of my social interactions. Teams™ *is here* but it is also very much already abandoned.

If I spoke code, I would diffract its code, look at the code, and then look *through* and at its eoders

authors

nobodies

people

humans

Roberts

Jacobs

faces

mothers

heroes

administrators

lovers

Eichmännerehen

tricksters

orphans

children.

“We naturally act towards a child with a spirit of love we often find hard to adopt towards adults. [Seeing one-another as children] symbolises a commitment to treat one another with the kindness one wouldn’t hesitate to show a child, but so often refuse grown-ups.”

de Botton [68]

End of Part 2 - *so what?*

I have, in three distinct “interventions” explored, with different methods, different literatures, different styles and different hand-writings explored what ‘a more-than-rational’ engagement *with the digital* could look like. I wrote about writing; I wrote about the digital; *I wrote about writing about the digital*.

Looking back these past 3 chapters; the work, in part, became exactly what I wanted it to be. In other parts, the writing took on a life of its own and what resulted is unfathomably different to I had intended. There are passages that I am most proud of; and other passages that stand there, that confront me with the limitations of my craft.

Re-reading this, and making sense of it, I am under the impression that this thesis - so far - feels like a snapshot of the night sky, taken with an early *feature-phone* (the predecessor to the *smart-phone*). We see several bright-ish dots, dispersed on a large black canvas.

Whilst most theses are in-depth satellite close-ups of single astronomical objects, my work is nothing like that. What I hope though, to offer instead, is something else: a hint at the overall star-sign. That which is hidden by astronomical close-ups but which still somehow buttresses the _{/mo/} firmament.

I never wanted to be an astronomer; but I always loved the stars nonetheless.

rock - paper - scissors
tongue - journal - crown

So where from here? I have presented you with 3 creative, subversive, generative interventions - each one full of life, full of philosophy, full of *more-than*-ness. I once presented my pre-decessor work at one of Lancaster's postgraduate STS conferences, and a fellow student whose name I cannot retrieve despite my best efforts, described my work as *STS-in-practice*. Rather than use the common envelope of methods, customary in STS (e.g. ethnography, interview, observation, ANT etc) to **do STS**,

I use the method(s) of Design
and *Design itself*,
I use Dance,
Technology,
my body-sensory-apparatus,
foreign-language,
my_{ino} trauma
- and the written medium itself...
as [M]ethod.

I make these my method;
I make the case that *these are [M]ethod*.

This is a smudge-stick.

Smudging is a Indian^[z] ritual of purification and cleansing one's soul of negative thoughts of a person or a place.

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In late Summer/Autumn 2020 I started (irregularly) attending a MOOC^[aa] at the University of Alberta. My teacher Dr. Tracy Bear started every seminar with doing a smudge, in the way she learned it from her Elders. She would take off her jewellery and glasses. Then she took out some sage she picked herself. She set it alight with a little match so she could take her '*spiritual shower*' in the sacred smoke. "*You are washing your spirit in this way*". The smudge container she used was a gift by a dear friend of hers, but she explained to us that any vessel would do.

"I always like to put my hands over the top of it. I wash my hands, so they do good things."

She briefly lowered her head over the bowl, and used her hands to fan some of the barely visible smoke to her face.

"I breathe it in"

She fanned it towards her eyes, and then her ears, and then she grabbed her pony tail and waved it over the little container.

"I smudge my eyes, so I see good things. I smudge my ears so I hear good things, and I speak good things as well. And my hair. Because I like the smell of it, and it stays with me throughout the day."

^[z]Arguably the preferred adjective by most extant indigenous/aboriginal communities of the North Americas.

^[aa]Massive Open Online Course, a free online course via the web.

Let this be our smudge for the day. Winter is coming, and this year has been tough on all of us.

I hope this little remote smudge ceremony helps us all to remind ourselves to be compassionate to each other. Lift each other up and be ~~there~~ here for each other. As a community we are only ever as strong as our weakest link - and the best way to shine is to make others glow up.

Sending you (and myself) lots of strength, compassion, good ears to listen, good mouths to speak well and good brooms and buckets for all our emotional housekeeping.

Sometimes there is nothing harder than asking for people when we need them the most.

You are all valid - no questions asked.

Lickable Cities

Lickable cities is many things. The paper [44] has been published at the flagship computing conference CHI (2018) and was considered a contribution in a number of relevant areas. It explores aspects of multi-sensory design, urban informatics, feminist computing and interface studies. Yet, I was primarily driving by questions of epistemology, representations and how my work unsettles Computing from within. Lickable cities is an acquiescent piece. *It does all the things a proper HCI paper ought to do and yet it does them so much differently.* Whilst for the purposes of the publication we employ a firmly empirical discourse of *methodology* and *data collection*, the manner in which we designed the study makes it clear that any attempts of objectivity are intentionally futile.

We present a study that *on the surface* is not too dissimilar to other studies in the aforementioned fields, yet by merely modulating the sense of investigation, new politics emerge. How did we achieve this? We conducted a survey that is driven through gustatory explorations, i.e. taste. I write:

Taste is one of our most complex senses. It is resistant to quantification, profoundly situated, individual, ephemeral, and difficult to replicate [...]. Perhaps for these reasons, thinking with, designing for, and interfacing through taste are inherently challenging endeavours for all researchers, including those within HCI.

Brueggemann et al. [44, p.2]

The paper is a self-conscious and rebellious piece of experimentation, and whilst I am content at its publication and acceptance by the discipline, I am much more fascinated by its reception and its nonchalant undermining of the very discipline by which it initially got accepted.

Recently I have been made aware of said work being nominated for an Ignobel Prize (2022). This is a wonderfully dubious honour and I am glad to see that my work is interpreted to be as irreverent-yet-acquiescent. The paper does exactly what I wanted this work to do: It

is a matter *of research*, it is a matter *to be researched*, it is a matter that *exposes research* and therein itself *becomes exposed* as what it is.

It is my diegetic prototype of what it means to do *non-representation*. Consequently I choose not to *represent it* here and now, but instead I move on and dwell in the implications of this piece for NRT at-large.

Part III

After Licking

Invocation: *The typewriters' emancipation*

I make the case (and have made this case all along) that my body is a [M]ethod, my queerness is a method, my heritage is a method, my neurodiverse mind is a method, my movements are a method, my writing is a method. And as much as they are method, they are also a way of being. And a way of thinking. And a way of living. A way of writing oneself into being. I take this premise seriously. I put my money where STS's mouth is; where the calls for *inclusion* and *inclusivity* claim they want to steer towards. When taking these premises serious though - the thesis becomes a battleground.

And my work is one where I do not surrender to the medium; to the format, to the expectation.

Docile(d) knowledge is just a euphemism for *colonized*, for *sanitized*, for *sedated*. Instead - this is a labour of resistance and argument-by-Trojan-horse. And you, Reader, have been made complicit.

I make _{αρεται} the case that this generative enlivening and invigouration of [M]ethod itself, of STS, of [K]nowing brings forward questions that were inutterable to-date, and that the type of questions which I generate are getting at matters of life and death for those who find themselves at the margins of *the bell curve of 'normality'*. Kirkegaard alluded to these as 'phantom publics' [243] that become produced when *the individual* vanishes and becomes replaced with *the public*. Utterances of *the public* proliferate myths of *averages* and suggest a promise of *generalisability*. Being able to produce *an average citizen* conceals the fundamental *also-truth* that *nobody ever is the average*.

I obsess about writing, type, typewriters, typing writers, writers' typing and types of writers. To do this, the work of Yaroslav Senyshyn [243] was vastly helpful for me to become able to conceptualise the meaning of *publics* and their implications for *individuality*. Senyshyn taught me to bring into harmony conceptions of "the public" that do not erase those individuals which constitute said *public*. Whilst *publics* seem to be an inevitable necessary concept for sociological inquiry, its very *raison d'être*, that generalising affordance is inevitably also a source of ontological violence.

Senyshyn resolves this conundrum though a study of the nature of orchestral music. His investigation outlines what a resolution of this dialectic individual-vs-collective opposition may look like: The role of orchestral musicians of the same instrument is *not* to play the exact same note in exact the same way aiming to produce the exact same sound. If such an *exact* replication of timbre, note, pitch and duration was possible, the resulting sound would merely be sonic amplification of the noise volume. Instead, the role and underlying working of an orchestra is another. An orchestra is not composed of an amorphous mass of

identical replicators, but instead of a large collection of talented and trustworthy individual *interpreters*. This collection of individual artists, who through mastery of their craft and instrument, generate a collection of different-yet-coherent sounds which in their conjunction we ‘read’ as fullness of when listening to music. The richness of the sound of an orchestra is therefore not testament to identical replication, but it emerges out of the organised celebration of *difference* and mutual *filling in the gaps* to produce a fullness that is fundamentally different to mere *amplification*. *Variation* and *diversity* is not a threat to music alike, but enriches it.

I find Senyshyn’s analysis deeply insightful and helpful in my efforts to overcome dualist-dialectic perspectives on individual-collective considerations. Orchestral music’s grandiosity is the outcome of both synchronous and a-synchronous affordances at the same time. It is in this *integral* in between synchronicity and individuation where *the meaning of the orchestra* rests; it is in the diversity of collecting *trustworthy interpretations* of the *source score* where the reason for co-existence emerges.

As far as diversity in music is concerned, thinking about practising orchestral diversification to produce creative meaning inevitably reminds me of Leroy Anderson’s *The Typewriter* (1950). Anderson emancipates *the typewriter* from its taxonomic prejudices which prevents it from being admitted to the canon of *instruments to make music with*. He *mobilises* the typewriter across epistemological taxonomic categories and in doing so he,

- not only re-envisages *the boundaries of music*, but also
- *invigorates the typewriter* and turns the artefact itself into an ontological provocation.

Before Anderson’s emancipation it seemed that the *typewriter* was *unfit for conservatoires*. Through Anderson we learned that the typewriter *can* be an instrument... may want to be an instrument. Even if it may not seem to us in any way *inherently instrumental*.

Just like the aforementioned typewriter, percussion too, do not play notes in the same way a violin, the piano or the voice transposes musical scores according to pitch and key. The percussion does not ground itself alongside rubrics of pitch, scale, harmony and key in the way other instruments do; but nonetheless the percussionist has become a staple member of any orchestra. The percussion’s *being-different* does not threaten music; its inclusion makes possible new works that until-then were impossible, unimaginable and hence inaudible. This chapter is written in gratitude for all those who laid the ground for drummers and typewriters to find their way into *the orchestran*(provided they are so inclined).

Chapter 6

NRT *before* and *after* Me

Theory sees everything as textuality, as networks of signifying systems of all kinds. Foucault sees an idea like madness as a text; Lacan sees a human being as a text; Derrida argues that everything is text in the sense that everything signifies something else. But ecology insists that we pay attention not to the way things have meaning for us, but to the way the rest of the world—the non-human part—exists apart from us and our languages. It's central to this insistence that we remember, in David Rains Wallace's words, "that the world is much greater and older than normal human perception of it... that the human is a participant as well as a perceiver in the ancient continuum of bears and forests" [...]. The systems of meaning that matter are ecosystems.

Campbell [55, p.208]

6.1 NRT before me

My recounting of the origins of NRT centres on the work of Nigel Thrift and British continentalist writing in [G]eography in the backdrop of *the crisis of representation* and the cultural turn. Nigel Thrift plays a key role in consolidating these critiques and refracts them under his umbrella designation 'nonrepresentational theory'. Thrift's work is a critical evaluation of geography's *take on 'the cultural turn'* where he thinks through the ultimate consequences of 'everything being text'. If all is text, but text cannot be trusted, what does this mean for academic ways of knowing? What is the meaning of academic practice in the backdrop the imperative to put our faith in *text* and *representation* into question? If [T]ext's certainty and promises become investigated and deconstructed, what does this mean about our legitimacy to represent, engage with representations and respond with representation's representations? Thrift provokes us to (re-)evaluate the privileged position of '*writing*' as

epistemological promise and certainty. In light of this new attention to these emerging uncertainties of textuality itself, how can we deal with the limitations of ‘text’, *the written medium, writing as method*, and the promise of language as tool for reason? Whilst Thrift acknowledges that framing ‘everything as text’ has undoubtedly been a fruitful promise; it is imperative to then *take text seriously* and with that take *writing, text* and *reading* under serious consideration.

Heavily influenced by geographical thought (such as the politics of map-making) and with his background and grounding in *cultural geography* Thrift renders his network of references and writing style in the traditions of this discipline. I want to move on from his work for reasons that I will elucidate in this chapter. My reading of these pursuits is one where there is much overlap in values, aims and methods. The central mission of this chapter is to show the merit and the boundaries of Thrift’s work. I make my case that *NRT* is *bigger than Thrift*.

6.1.1 Thrift

Thrift’s work from 2007 consolidates and shapes nonrepresentational thinking as it is understood today, yet *‘the non-representational project’* dates back to as early as 1996. Thrift himself writes already in 1996 that it “has to be said that [such a book on NRT] has been a long time coming” [274, p.xii].

After *Spatial formations* (1996) [274], and *Knowing Capitalism* (2005) [275], *Non-Representational Theory: Space Politics Affect’* (2007) Thrift [276] closes off this trilogy on more-than-representational theory. The book’s title alone indicates that Thrift leaves little room for speculation: the text is intended to be the conceptual focus-point of NRT and put itself at the centre of ‘the non-representational movement’. Thrift, in the phenomenological tradition of Merleau-Ponty and Heidegger, re-defines *geographical conceptions of landscape* to include individual emotional dimensions including subconscious landmarks such as *the pre-rational, trauma, atmospheres* (i.e. collectively shared barely-tangible impressions) and other phenomena.

Thrift seeks to complement the predominant cultural turn in geography, which he deems skewed towards understandings that are grounded in an analytical and cultural study of place and space. *A new geography of landscape*, to Thrift and his contemporaries however also ought to entail qualities beyond the straightforwardly rational. Thrift’s work is a challenge to the certainty with which *landscape is written* in geography. Whilst *the cultural turn in geography* sought to ‘get at’ messy realities of social relationships, it did so by emphasising the cultural and social relevance of phenomena that critical-realist and Marxian (grand-narrative-oriented) approaches overlooked.

The *cultural turn* in the social sciences expanded the topics of analysis from economic, political, social and national interactions and identified culture, practices, and speech as sites where these processes can be witnessed alongside macro-geographical narratives. However, even aside of their socio-economic and political relevance, cultural practices *in themselves* are important themes that merit study *in their own right*. “Everything is text” - being a quasi-motto of the cultural turn [220, 139]. If this premise is that *everything is text*, consequentially everything can be studied and interpreted and culturally contextualised.

Whilst this premise prepares the ground for a range of new analytical and interpretative studies and methodologies, Thrift appeals for caution and a higher degree of nuance in socio-geographical research. He argues for ‘a new geography of landscape’: a geography that includes qualities of social worlds that are *beyond the straightforwardly rational* and *beyond that which is straightforwardly perceptible*. The premise that “everything is text” suggests that *all* is fundamentally understandable and utterable. Given the central role *text and language* plays in the context of geography, Thrift’s work is an analysis and deconstruction of *text*, and of *method*, and *the premise and promise of method* itself:

In the same way that geographers have understood landscapes and *socialscapes* to be *textsapes*;

Thrift *does geography* by _(un)*doing* text.

Lorimer [179] offers a very helpful condensation of three key characteristics of *the non-representationalist premise*:

- Non-representationalist accounts and research is celebrating an awareness for seeing and feeling.
- Non-representationalist writing is underpinned by an awareness of the “un-innocen[ce of] translations” Haraway [117, p.9]. It requires thus a kind of surgical gaze that is able to follow through shape-shiftings of objects and draw out relationships that become obfuscated in ‘guilty’ translations.
- Non-representationalist work exhibits an attentiveness to the small dramas formed by fragments of speech [116, 283]. That applies to the words we (researchers/authors) rely on to ‘get at’ telling stories; but this applies just as much on the words of our informants and of the texts we read and learnings we accumulate from others over time.

6.1.2 Undermining *Actants* and *Processes*

Thrift's mistrust of *everything being text* is therefore a type of mistrust in *semiotic certainties* [274]. It is an epistemological ambivalence insofar as Thrift casts doubt on any claims to understand objects and actors in a way that enables us to submit them to analysis or investigation.

Harman's notion of undermining/overmining objects [123] articulates well the conundrum which Thrift begins to articulate in his earlier work:

Undermining (to Harman [124]) refers to an oversimplification of what any object may be: a lack of acknowledgement of the full complexity of *the things* muted through the lens of common sense, science, culture or others. Here, the object/actor becomes 'misgendered' according to categories that are foreign to the object/actor in question. *Overmining* however is also an act of misinterpretation: here however it is not the politics of grand-narratives and culture that overshadow the actor or object's essence, but *the observer's own interpretation of the things*. This overstepping of individual epistemologies results in flawed deductions and mis/interpretations and predictions about the world.

To sidestep this epistemological deadlock, Thrift proposes a process-centred ontology where artefacts and actants are merely ephemeral illusions of an infinite network of ongoing processes that interfere with each other. Such a world is one that is constantly *in a process of becoming* 'of entanglements'. By rejecting *a world of discrete actors*, he seeks to deny the possibility of skewed narratives of some actors overshadowing other's narrations.

In consequence, Thrift strives to get us to pay greater attention to illusive properties and affordances actors or networks possess in themselves. Forgoing their *actorness* and *networkedness* in some ways is a means to appreciate their inherent idiosyncrasies diligently. Undermining any illusion of isolation (and *isolationability*) of objects, he seeks to reduce 'anthropocentric epistemological violence' that human-centred topologies exude. Whether this effort is always successful ought to be better judged on a case by case basis, yet the effort to shift from actor-based world-views to engagements, *fluidity*-acknowledging epistemologies (such as the approach of the sub-discipline of *mobilities*) gains relevance across the critical theory and research.

Rather than being intimidated by the complexity and non-linearity of *lived life* and therein its fundamentally opposition to the linearity of text (amongst other things) - Thrift thrives in *in the mess*^[a]. The epistemological binary of the *res extensa*, the *res cogitans* have long been unsettled; other ; other Rēs have introduced themselves and *mess things up further*: the *res*

^[a]Drawing on Law [171]

semiotica, *res textualis* and the *res illegibilis*.^[b] It is in this mismatch of representation and *the represented* and the ingestion of a representation where instability and politics emerge. It is in this *in-between-space* where Thrift begins to exploit the ambiguity of each *layer* and its feedback mechanisms with each other layer it is *networked* with. But rather than be intimidated by this ambiguity, or seek to deconstruct it, Thrift celebrates this dynamic space and uses the lexico-epistemological uncertainty as an enlivening and emancipatory force. Unbridled from the fixation with accurate and *stable* representations, Thrift is committed to describing/cherishing an ephemeral, mobile embodied relationing in any representative endeavour.

Flat ontological strategies^[d] enable Thrift to retain (respectively even exploit) degrees of ambiguity in actors in favour of a drastically performance-based styles of description. That is, rather than focus on seeking an ontological insight into the nature of the actors, flat strategies enable a description of what these actors do, how they achieve it, with whom they interact, when and for how long, why and where, etc. These processes become matters of performance and thus are explicitly reliant on a perception that focuses on mutual engagements.

Thrift con_[sub]sequently re-defines the objectives of geography, which to him are not an attempt to discern and account spatial patterns and relationships, but their evolution over time. Even prior to *Space Politics Affect* Thrift relied on the phenomenological approaches by Merleau-Ponty, Heidegger and elements of Wittgenstein through a Deleuzian lens: by that I mean that he conceived space (*the matter of geography*) as distributed and transgressive [127], not physical, geometrical or Cartesian. *Space* instead is the connecting property at the intersection of events (or non-events) that can be connected through material relationships, emotional relationships, ideological, conceptual or political relationships. *Space* becomes a potentiality in which interacting may-or-may-not take place, even if such interaction is mediated, asynchronous/non-contemporary or "*merely*" *felt*. Traces of such a space-time sensitive and practice-focussed attenuation can be found, according to Thrift in his interpretation of the Marxian call for an abandoning of "frozen circumstances" [p.1], for an analysis of the enlivened processes ([273]).

^[b]Or maybe these Rēs^[c] out to be considered to be plural, i.e./e.g.

res cogitantes,

res extensae,

res semioticae,

res textuales,

res illegibiles. My argument is one that stresses that the contemporary continental position in philosophy (i.e. one that emphasises *the partial perspective* - has been placed falsely into a position of binary-opposition to enlightened epistemologies; the work of Thrift is the refraction of these positions into a complementary epistemological position.

^[d]Conceptions of the world where flat ontologies are exploited to enable new vantage points and stories.

Such a pursuit of understanding time as vital component for his new geographies resonate well with phenomenological approaches, notably those by Heidegger and his studies of time and how to theorise time and time's entanglement with dwelling/(be)wohnen. He commits to this time-sensitive conception of processes right from the outset and throughout subsequent work has stayed faithful to it. His theorising of the relationships with objects and subjects has continued to evolve. That means that whilst his attention to *temporality* was substantial, explicit and intentional right from the outset, his phenomenology of the things has continued to evolve through his later works to take in account writing of Latour [67, 304], object oriented ontologies [124, 123] and provocations such as Ian Bogost's alien phenomenologies [27] or Bryant's *Onto-cartographies* [47].

6.1.3 Thrift's *alchemy* and radical positivism

Writers who allude that this may be the 'next new paradigm' changes are therefore rather polemic. It is not - as put by Lorimer - a 'pejorative'^[e] bashing down of empiricism, but a re-invigoration of it.

extract from my research diary [n.d.]

In this passage I will focus on the central point that Thrift does not seek to *do away with empiricism*, and should not be read as another voice making a case for a *situated perspectives* or *the partial perspective*; instead his argument is grounded in a rather unexpected buttressing concept: he grounds himself in the positivist tradition.

Situated interpretivism and rational positivism are conventionally put into stern opposition and generally described to possess opposing ontologies and epistemological assumptions. Yet, Thrift's NRT undermines this opposition. Rather than trying to find strengths and complementary remit and potential synergies between both 'oppositional' epistemological positions he approaches the paradox through the lens of phenomenology; he 'reads' the paradox through hermeneutic perspective. His subversive non-representational reading practices (of this paradox) circumnavigate the analytical deadlock between [I]nterpretivism and [P]ositivism. He transforms this epistemological paradox into a source of creation, creativity and imagination, rather than a site of surgical analysis and deconstruction *ad infinitum* [182, 223, 253, 320]. NRT is an emancipated proposition that offers *a diegetic* as well as *concrete constructive suggestions* of the new research practices that resolve the paradox. His approach is one of *radical positivism* which is heavily informed by the

^[e][179, p.2.49]

phenomenological literature. Their phenomenological and radical positivist stance lifts the imagined deadlock of opposing research strategies and recklessly breaks down traditional alliances and produces a hybrid stance that puts its own values for success on the table and its own rubrics by which it seeks to be measured.

Whilst his conclusions resemble to some extent those by Sandra Harding and her concept of *standpoint theory* (cf. Harding [122]), when their work is *thought through till the end* the implications of their writing is distinctly different.

Both Thrift and Harding are critical of the idea that knowledge, knowing and perception are fixed and universal entities (read: modes of representation) that can be discovered or acquired through purely rational means.

Both Thrift and Harding view knowledge as being social and contextual, influenced by a variety of factors. However, they differ in their perspectives on the specific forces that shape knowledge. Harding situates these forces explicitly within feminist traditions, such as power, culture, and identity [121]. On the other hand, Thrift seeks to locate these forces in a more elusive, pre-political, pre-conscious, and affective realm that is intrinsic to the individual human condition. For Thrift, these forces are not the societal power-dynamics that inherit or represent injustice or privilege.

Harding deduces her approaches towards her standpointed epistemologies from an emancipated feminist intellectual heritage, Thrift *gets to a similar position* through the route of a *stern commitment to positivist epistemologies*. Thrift's [austere?] interpretation of what it means to commit positivist epistemologies echoes many properties of its theoretical opposite (i.e. anti-positivist feminist epistemologies).

Re-iterating from above: his stance is that *emotions, affect, impressions, perceived atmospheres* are empirical phenomena, not subjective impressions. Thrift's empiricism asserts that these cannot be treated different to physical phenomena. The separation of subjective phenomena and physical-material ones is - according to Thrift - an inherently un-empirical one, and irreconcilable with good positivist practise.

He asserts that *atmospheric affordances* [247, 8, 190] qualify as part and parcel of what is perceptible data. Hence, it ought not be excluded from empirical research, as doing so would violate the values of positivist research. Thrift employs such a radical reinterpretation of positivist principles that it brings to harmony to phenomenological research philosophies and positivist ones. Thrift *commits* to 'the empirical premise' in a way that recognises the perceptibility of emotions, impressions, affect, and *the inutterable*; and by virtue of being *perceivable* they are empirically existing; and hence are epistemologically *valid*. He does not participate in discourses of 'subjectivity' or attempts to validate personal narratives as valid *aside of 'objective' accounts* - he re-positions individual affective experiences *into*

the realm of the empirical and subsequently demands their inclusion in the same manner as *conventionally objective phenomena get to be included*.

Thrift condemns the inconsistency with which conventional classifications of *subjective/objective* and *natural-science/social-science* divide-up the *entity of the lived experience* which privileges ‘certain types of knowing(s)’ over others. Thrift’s *alchemical intervention* is one of de-legitimising this dualistic and skewed epistemological stance in favour of a *radical positivist stance*. Here, my term *alchemical* is meant to draw attention to the element of transformation of the epistemological deadlock (of interpretivism vs positivism; of natural vs social science; of objective vs subjective) into a source of new epistemological and methodological invigoration.

Such an NRT is the attempt to overcome the limits of representation as it is practised to date *without bashing on of the cultural turn as a “straw man”* [179, p.2.49]. It is due to this firm and literal appropriative hermeneutic of *empiricism* that Thrift employs to draw out his *alchemical invigoration*. NRT is not a rejection of empiricism, nor a rejection of writing, but a recognition of the new demands to either of them if *the enlightened premise of empiricism* is taken seriously; And as much as Thrift invigorates *perception itself*, with that, comes a need for *a new writing*.

Thrift unsettles some of the fundamental assumptions about the nature of empiricism, and the foundations of *what makes proper science* and affirms qualitative and partial perspectives and imbues them *with a positivist sanctioning*. This (re)taxonomisation flies in the face of strict vision on what makes good science and subverts the intellectual gap between the objective and subjective which are almost inseparably constructed to go together with hard and soft traditions of doing science. Thrift however positions himself in a fashion that ignores these traditions and intentionally provokes.

Staking claim to engaging in a positivist method is an emancipatory act that in a single strike challenges, critiques and re-threads the commonplace assumed architecture of research traditions. Thrift in a fashion queers the oppositional logic that underpins these traditions and offers a space in which the subjective becomes manifested as authoritative and tangible resource. By designating subjective phenomena as valid for positivist inquiries Thrift does not need to outline visions for future research; they become evident as soon as Thrift conducted his re-categorisation.

What I am trying to convey is that, to me, *non-representational methods* are a *constructive* attempt to a) propose and b) experiment *with knowledge production* in a way that is sensitive to the challenges posed by postmodern critique. It is the offering of new experimentation that re-iterates the value of postmodern critiques, sometimes understood of being too uneasy with empirical pursuits of knowledge. Simonson goes so far as to refer to it as “‘*new humanism*’

after anti-/posthumanism" [252, p.10]. The nonrepresentational manifesto uncompromisingly puts into question the imperative of interpreting this as an inevitable paradoxical binary of those two imagined classes in the first place. This *moment of alchemy*, is where I see a lineage between Thrift's radical approaches and the meticulous forms of commitment that buttresses *successful* and *innovative* design. Simonsen [252] concludes that NRT's re-reading (and applying) of the phenomenological literature re-orientates epistemologies in a manner that "avoids the rationalist and self-righteous claims of the old ones but maintains elements of the experiential dimension of social life, the acknowledgement of the other and the significance of human agency" [252, p.10]. What I am drawing out from Thrift's work is his subversion of *positivism's objectivist constraints* to [alchemically] produce a playful positivism of inclusion.

NRT understands itself as an outcome of a radical dedication to empiricism rather than the result of a rejection of previous methods and writing techniques because of their weaknesses. A type of writing that is guided by the properties and affordances of such a *radical positivist way of accounting* counters commonplace relationships and established 'objective' orders. Sticking with these subaltern classes reinvigorates the vantage point from which we can observe our own life-world. Through such an invigorated *new seeing* that which is otherwise *hiding in plain sight* can become (re)traceable and utterable.

I find Latour's concept of "anthropological strangeness" very helpful in this context: Latour, in order to study the practises and methods of contemporary *science making in laboratory settings*, de-familiarised himself from his customary way of seeing. Through an epistemological repositioning he *exoticizes* the laboratory in order to overcome his temptation to buy into classifications of practises such as 'technical' vs 'social' (e.g. break room practises, eating apples, producing tables, inscribing data with the help of machines). Latour gets at this new vantage point through the lens of *anthropological practise* - Thrift seeks to do the same through *a new hermeneutic of empiricism*.

6.2 Politics, Theory and *the Left*

6.2.1 Thrift on *the Left*

I owe a great debt to the theoretical framework of NRT, but with this intense entanglement also - to me - comes the need to seriously engage with the provenance and supplementary ideology that Thrift has woven into his conception of the *non-representational*. In fact, this section is dedicated to a firm distancing with some of the aspects of Thrift's writing, not only caused by - what I deem to be internal contradictions in his writing, but also real-politische

ruptures of his intellectual projects and his acts, deeds, decisions and comments in his function as Vice-Chancellor of the University of Warwick.

Thrift, in the following passages, goes into great depth in his critique of *the Left*, which is a category of scholars which he does not define in any clear terms. The selected quotes that will follow are intended to aid in my attempt to draw out what/who Thrift imagines when making large and sweeping statements about *this Left*. I would like to discuss his excessive dependence on the notion of *the Left* as a reified and imaginary category to oppose or push back against.

Evidently it goes without saying that *the (academic?) Left* (if there is such a thing) is a deeply inhomogeneous group of individuals from vastly differing disciplines, coming from a bewildering range of backgrounds diverse set and often holding deeply contradictory and in-compatible convictions, approaches and epistemologies.

Too often it falls back on the orthodox politics of resentment of left radicalism which has become an increasingly sterile political repertoire whose appeals to unity simply repeat the old terms of succession within a foreclosed 'radical' community intent on the pleasures of victimisation.

Thrift [275, p.222]

It remains unclear what Thrift means about the sterility of *today's* critique by *the Left*. "Becom[ing] increasingly sterile" to me implies that according to Thrift, there might have been *once* a meaningful and worth-while mission of critique; but this critique may *have run out of steam?* (cf. also Latour [167]).

The only alternative to left moralism often seems to be a mystique of protest which can call forth 'a community of angry saints in which the fire of pure opposition burns', [...] which then provides, simply through its existence, an apparent revolutionary justification.

Thrift [276, p.33]

Does this obsolescence of '*critique*' imply that the contemporary debates in the literature are moot? Or merely a rehashing of established scholarship? Or does he instead imply that the level and rigour of contemporary critique is lacking? What has changed to the nature of *critique* as to have transitioned from a *once fertile endeavour* to a sterile activity?

In days when the Iraq War, Afghanistan, 9/11, 7/7 and other such events often seem to have claimed total occupation of the Western academic psyche, and

many academics have reacted accordingly with mammoth statements about warfare, imperialism, capitalism, global warming, and numerous other way points on the road to perdition, it is difficult to remember that other kinds of political impulse might also have something to say, something smaller and larger, something which is in danger of being drowned out.

Thrift [276, p.vii]

His approach to investigating *the micropolitical* ignores the macropolitical; or is a macropolitical that excludes race, politics, gender, epistemic justice or the like.

The inconsistency and fallacy in Thrift's thinking is that he explicitly opposes global [P]olitics and affect. He rejects the notion that affective responses can be caused by macropolitical events; respectively that affective reasoning can shape global politics. Whilst I thoroughly agree with Thrift that *capturing affect in writing* is a difficult endeavour due to its subconscious and elusive manifestation(s), I firmly reject the notion that in instances of *affect and [P]olitics* intersecting, affect is bound to become erased or overshadowed by *the political*.

[...] I am deeply suspicious of, even [hostile] to, autobiography or biography as modes of processing. One seems to provide a spurious sense of oneness. The other seems to me to provide a suspect intimacy with the dead. [...] Biography, for Freud was a monument to the belief that lives were there to be known and understood, rather than endlessly re-described. Biography did to the dead what Freud feared psychoanalysis might do to the living.

Thrift [276, p.7-8]

Thrift proposes a notion of individuality that is so deeply grounded in an engagement with the world that the notion of individualism, (whole-lism) is a dangerous bias rendering oneself too close to the centre of the narration. Biography entails an illusion of capacity to "know" the other, the notion of a singular 'other' and thus an inherently un-empirical and representational exercise (cf [276]). The reason for Thrift's vehement focus on *biography* as focus point of his critique remain somewhat unclear, and remain contested even amongst NRT scholars (e.g. Vannini [283]). His presumptions on the damaging nature of biographical narration may be unnecessarily exaggerated or erroneous altogether (Probyn [226]).

It seems that for Thrift, life and living emerge out of the assumption of an ontological supremacy that is individual wholeness. *Biography* then tears up the wholeness of lived life,

and forces life into a flattening normalised caricature (Lorimer [179], Probyn [226]). The practice of biographical narration (and the violences of singular story-telling) is irreconcilable with his appeal to see *lived life as a practice of being embedded and being part and parcel of an entangled network*. Yet, what he excludes from his argument is that writing itself (and any form of narration, representation or textuality) is not singular, but at best an umbrella term for a vast collective or narrative practices.

For Thrift the act of writing a biography is an instance of ontological violence to aliveness and to life itself. Whilst I find myself not inherently at odds with this interpretation of inscription, I want to distance myself from Thrift's consequent refusal to admit any validity to projects of biography. Instead through celebration of the partial perspective [113] 'written life' must be understood to be an emancipated new form of the manifold manifestations of life-as-it-happens. Written life cannot, will not and shall not be equated to 'life-itself'. Biography and life are related but not mutually interchangeable or reversible.

In as many ways as lives can be lived, lives can be interpreted and in as many ways as life can be interpreted, lives can be 'biographised', and in just as many ways lives can be read. Equivalence was never the objective of writing. The product of each of these transformation is just one of many possible variants, and whilst each one of these remains valid, none of them are authoritative; whilst any of them are legitimate, none of them are exclusive. Singularity in narrative is not an inherent claim to biography, but a fallacy in acknowledgement of the very basic principles of a hermeneutic that is informed by NRT. Lorimer too expresses ambivalence about Thrift's comments on biography and rather than retrace Thrift's thinking instead adds different flaw in *a biographical approach* to narration and research [179]

Lorimer is furthermore uncertain about Thrift's remarks on biography and, after of revisiting Thrift's perspective, adds a further distinct challenge to his rejection of *a biographical approach* to storytelling and investigation [179]: Biography can suggest a notion of distinction between oneself in contrast to *others*; a biographical premise of narration privileges *one actor above others*. Other theorists suggest that a more metaphorical reading might do Thrift's original ideas more justice [143, 145]. Probyn [226, p.73] writes on this that "potentially much gets thrown out—as in Thrift's championing of the anti-autobiographical and the implicit disregard and misapprehension of much of feminist writing inspired by the 'personal' or rather by the lived fabric of the everyday".

Lorimer counters Thrift by calling for "work that seeks better to cope with our self-evidently more-than-human, more-than-textual, multi-sensual worlds" [178, p.83]. This ought to be informed by "a cultural-feminist programme that has nudged the more-than representational debate out of a predominantly white, western orbit" [178, p.89]. Thrift

imagines his nonrepresentational toolkit to be an a-political catalyst of *tamed* knowing that does not unsettle macro-capitalist superstructures; an assemblage of practices that can aid attempts to accommodate for the more elusive and affordances in research. A type of radical positivism where Thrift's definition is some kind of *primordial truth* - getting at *the essence of being 'before the political'*. "For Thrift, like many today, critique is not about identifying oppression and suffering and its causes, but merely the academic virtue of being reflexive and revealing the unnoticed"

Sayer [239, p.97].

I am searching for another way of going on, a different kind of politicalness which has its roots in new intellectual practical formations which have cried 'enough' to the usual knee-jerk left analyses and are attempting to re-materialize democracy. Such formations do not rely either on a politics of resentment or on the kind of 'spiritualism' that too often emerges in its stead, and in their search for a political reanimation they take biology seriously as a key to thinking about the political as a part of a more general search for political forms that are adequate to current modes of being: forms of multinaturalism rather than multiculturalism, if you like [...].

Thrift [276, p.222-223]

6.2.2 *The Left on Thrift*

NR-theory brings (back) into consciousness the pervasive, yet invisible; the mundane that is continuously overseen; the universal yet unaccounted layer; that which is always new and yet in its ephemerality never deemed original.

Brueggemann et al. [44, p.4, typesetting adapted for this thesis]

Performance in Thrift's sense is firmly and explicitly emancipated from Butler's conception of performativity (namely in *Bodies That Matter (1993)* [48]). He writes "Butler is unable to 'disarticulate performance and history'" Thrift [276, p.129]. Thrift seeks to hold Butler's project against their own yardstick, and therein it seems that he mistakes that which is its source of strength as a flaw.

Butler's project is a feminist endeavour grounded in the material, cultural, geographical, economical, socio-political and temporal loci. Butler speaks with the authority of their contemporary context and necessity. Performativity and performance there are products of their

context, their *history* and a call for their disentanglement seems to me like a *non-sequitur* argument at best.

Thrift, alludes that the discourse of '*the Left*', which intends to liberate subaltern, has itself become hegemonic. The passage further describes an erasure of meaning of what it means to be *suffering from oppression*. Thrift includes much of Sedgwick's work into this aspect of his writing. Sedgwick writes:

The seeming ethical urgency of such terms [*hegemonic* and *subversive*] masks their gradual evacuation of substance, as a kind of Gramscian-Foucauldian contagion turns 'hegemonic' into another name for *the status quo* (...) and defines 'subversive' in a purely negative relation to that.

Sedgwick [242, p.12]

Gramscian subversion in this sense means (according to Sedgwick) that claims to feminist acts of resistance over time, become deployed increasingly more often and in a thoughtless matter. Thrift, by applying Sedgwick's argument in this manner into his own writing appropriates the tools of feminist analysis and claims these to be deployed indiscriminately. It seems that Thrift is unable to interpret the increasing expansion of feminist and liberating initiatives as a

manifestation/consequence of an increasingly more nuanced and powerful, feminist toolkit that... enables those affected to identify subtle-and-concealed oppressive politics that becomes circulated through ... artefacts, peripheral utterances, the invisible, micro-gestures-expressions...

... and *the design of the mundane*.

Rather than understand engagements or '*utterances*' [276, p.131] as *performative* in a textual sense (and thus political and discursive), Thrift advocates for a more abstract understanding of performativity: Thrift's definitions of *utterances* are *holistic bodily engagements with the world*, and, in his reading, Butler's political attenuation obfuscates these embodied and affective qualities. To Thrift, "Butler offers little to help the reader [to] account for the unaccounted" [276, p.131]. Yet, whilst putting forward such unbridled critiques of Butler (and also the postcolonial writer Homi K Bhabha) Thrift positions himself as liberal advocate, and enabling an agenda of emancipation through liberating subaltern ways of seeing.

When reading his work however, it transpires that his interpretation of *situatedness* possesses a distinctly neo-liberal capitalism-embracing disposition. His advocacy of the

principles of competition, upkeep and ‘revitalising’ capitalism, and his anti-humanist stance enable him – he claims – to put forward a “*diagnostic tool*” [276, p.2] for a space-time sensitive “*speculative topography*” (idem).

Projects that are more conventionally designated as ‘left’ (such as postcolonial ways of “reparative knowing” [276, p.191]) are seen by Thrift as self-subjugating to hegemonic pressures by seeking to subvert oppressive forces. A recognition of one’s position *of being in need* is for Thrift inevitably framed as an utterance which weakens one’s own position. This argumentation is reminiscent of Hegel’s master-slave dialectic [180]: a dialectic where relationships of bondage become framed as co-dependant; and from this co-dependency, the slave obtains power over the master through the need of mutual recognition.

Making use of such a circular conception of fluid power, Thrift (drawing on Sedgwick) seeks to re-endow subaltern groups with new forms of agency; that is through a revising of the affective process that manifests subjugation. Sedgwick [242] suggests that such an appraisal of one’s own situation forces oneself into an unnecessary binary of *complicit* respectively *liberating*; whilst only an intermediate hybrid could offer genuine freedom to act independently. This is a state of being which Sedgwick [idem.] refers to as Foucauldian “pseudodichotomy” [p.12].

Thrift’s provocation, whilst internally consistent, fails to acknowledge that this argument about feminist and emancipatory refutations of exterior binaries has been already addressed in Haraway’s project (notably Haraway [113]) provided by the concept of *the partial perspective*, or her emancipated *cyborg epistemology* [114], or the *Modest_Witness* concept [118]:

A feminist ethics thereafter need not be subjugated to categories of absolute and abstract rules, but instead about the momentary local needs and ethics. Thrift reverses Haraway’s argumentation and, through oversimplification, turns it on its head: **At the core, he alludes that emancipatory movements are themselves hegemonic modes of thinking; merely re-aligned according to alternate ideologies to the currently dominant ones.** Thus therein, Thrift acknowledges all initiative to the hegemonic power; and with that in his model, those seeking emancipation, fail to critically reflect. However, given my engagement with Arendt’s work (Ch.5) and her dissection of the nature of thoughtlessness, I reject Thrift’s argumentation. The very process of *recognising injustice* and identifying systems as hegemonic inherently requires intellectual engagement, i.e. thoughtful engagement. The process of producing new narratives of justice (and creating justice through new narratives) counter to hegemonic discourses is in itself *evidence for engaged thinking*, not of thoughtlessness.

What Thrift understands as evidence for thoughtlessness however, is in fact vouching for the contrary: The recognition and vocalisation of injustice is the ultimate outcome of an act of categorical liberation that Thrift and Sedgwick imply is not taking place. Thoughtlessness

in Arendt's sense is a form of absence of engaged thought that stifles critical assessment of one's situation (I will pick up the intersection of Thrift and Arendt in the interim summary below).

6.2.3 Interim summary

It is hard to write about NRT without making frequent and profound references to Thrift; I have avoided giving him much space in the course of this monograph, but this section of this chapter is my occasion to engage with him in a manner that credits him with the space his work deserves in my epistemological heritage, whilst acknowledging him in the greater political context and discourse in which he actively places himself. His prevalent position in NRT writing needs to be acknowledged in my endeavour to use, forward and contribute to nonrepresentation in theory and practise. Assessing his work and deeds beyond his writing, the dissonance between his written postulations and acts as vice-chancellor have been pointed out in writing and more frequently in conversation amongst colleagues and students in the hallways of universities throughout the UK and beyond.

The tensions between pursuing a fluid way of writing knowledge and the persistence of written language is a conundrum Thrift seeks to bring harmony to through the means of NRT. I find Stewart's emphasis and appropriation of the concept of topologies very useful here to tie together a number of Thrift's arguments. Based on her groundwork I develop this further into the related concept of topological vantagepoint and how NRT is a unsettling practise that re-invigorates one's ability to see the mundane and familiar with 'new eyes'. This new and *verfremdete*^[f] (cf. [32]) perspective – according to Thrift can yield new insights; akin to *anthropological strangeness* (cf. [277]) in this sense. Thrift seeks to pursue originality in these subsequent insights by side-stepping feminist and emancipatory traditions of critical social science writing as – according to him – these have a sufficiently rich tradition and body of literature.

It is here where I most strongly disagree with Thrift and I make the argument that NRT is distinctly desirable and a way to identify illusive processes of exclusion that are hard to grasp and to describe. The value of NRT, as I see it rests in empowering subaltern and subverted narratives that are overmined respectively undermined by conventional methods. A emancipatory NRT has therefore the potential of being a substantial asset in a rich and well-grounded "Left" constructive critique of global capitalist structures, rather than a mere reactive movement of "self-victimization" [276, p.222] as Thrift continues to make a case for. This emancipatory NRT I argue for is an attentive practise of thinking and working that

^[f]Ger: *defamiliarized*.

can aid in warding thoughtless practises (whereas I employ the term thoughtlessness in as described by Hannah Arendt, see also Ch.5).

Evidently then, the definition of NRT and its remit and agenda is a contested space. Yet, any attempt to provide a definitive definition of NRT, would do violence to its very nature.

When examining the theoretical landscape of writing about NR approaches, it becomes apparent that there are conflicting and inconsistent interpretations about how NRT should be applied. However, it is also emphasised that the unique style and perspective of each NRT practitioner is essential in this practice. Without wanting to see these different interpretations as cause for discredit of this body of literature, I want to understand these inconsistencies as catalysts of (new) knowledges and development of NRT, into new modes - and in my case - away from its original roots and also away from Thrift.

6.3 Thrift after me

6.3.1 My practice of NRT

Non-representational theory is popular and influential but it is controversial and often poorly understood. This is in part because of its complexity, but in large part also because of its limited application in research practise and because of its many unanswered methodological questions.

Vannini [283, p.2]

Vannini picks up Thrift's project and juxtaposes it with a wide range of voices. Whilst Thrift's work was a solitary project, Vannini captures a wide range of voices who - whilst discussing the impact and implications of *the non-representational premise* for research - also strive to *be* examples of a more-than-representational handwriting. Notwithstanding the importance of Thrift's work, there is more to NRT than Thrift. I too advance this theory by expanding and interpreting what *the non-representational project* is/ *ἡ(α)ποδοῦσα πρῆσις*. I see nonrepresentational methodologies as un-methodologies^[g]. What I mean by this is that they are not in fact methodologies

in the sense of a system of offering systematic step-by-step structures through which research may take place; or even its own new NRT set of methods,

rather

– NRT's (un-)methods are an undoing and re-opening of conventional methods and a re-interpretation of what they can achieve and how they can function in research.

NRT-Methodologies can be understood as 'un-methodologies' in the sense that they do not seek to introduce entirely novel methods in the discourse. Instead they embody an epistemological reorientation towards existing methods. These methodologies invite us to reconsider and reinterpret conventional approaches, emphasising the importance of criticality, inclusion and overlooked perspectives. By doing so, they challenge established paradigms, offering a fresh lens through which to engage with and critique existing knowledge frameworks.

^[g]Cf. Grois [100]

Non-Representational Methodologies (2015)

There has been much debate about what NRT is. When surveying the landscape of theoretical NR-writing, contradictions emerge and incoherent interpretations of what NRT is and how it should be practiced; whilst at the same time continuously emphasising the individuality that every practitioner must bring to their non-representational practice.

Thrift is not advocating for a *forgoing of representation* in the backdrop of increasing concerns of our ability to rely on it, but rather - he encourages us to celebrate the successes and strengths of it; appreciate the limitations of it and explore new means to push the boundaries of 'what text can do'. Eight years later, Philip Vannini published an edited collection of essays in the book: *Non-Representational Methodologies: Re-Envisioning Research* (2015).

Philip Vannini: Non-Representational Methodologies: Enlivening Research

Vannini's book picks up these concerns and enlivens them; envisions some new ways forward and how the abstract concerns by Thrift can be turned into new work that does not forgo writing, but takes aboard the nuances and ambivalent stance towards writing - and turns Thrift's suspicion into an argument to re-invent writing, research and maybe even [M]ethod itself.

Vannini's work is for most centred around the questions: What are the methodological implications of the tenets of NRT? epistemological concern: How to deal with *these* and how others deal with *them*? How to teach in the context of epistemological uncertainty and the implicatons for all textual practise and [M]ethod itself? What this means for higher education, academia, research as practice, research as industry? Can we be invigorated by uncertainty, rather than inhibited?

Vannini's work, unlike Thrift's, is not distancing itself from feminist politics and the *Realpolitik of the everyday*, instead it recognises its mutual entwinement. Yet this revised take on NRT, through my interpretation, permits me to articulate my *atmospheric experiences of the digital* that take stock of its hard-to-describe hegemonic qualities.^[h] It is therefore that Vannini's re-telling of NRT is highly appropriate to legitimise my creative investigations which seek to articulate the ephemeral and subtle ways *the digital* (re)produces existing macro-social injustices *through the medium of code*.

^[h]Vannini's discourse on Atmospheric perceptiveness captures fluid interplay between space, emotion, and social interaction, challenging traditional, objective methods of understanding human environments. "Atmospheres" within *Non-Representational Methodologies* posit these as affective, mutable entities integral to social experience, rather than mere physical settings. They transcend conventional spatial analysis.

6.3.2 Thrift's 'alchemy' and his situated *radical positivism*

Law [171] imagines the *inquisition of method itself* as a deconstruction of the allure of intellectual hygiene that rigorous research strives for: A critical engagement with the naive/unchallenged self-evidence and the trust into *being able to disprove or gather evidence for hypothesis through methodology and method* (see also Law and Hetherington [172]^[i]). He speaks of “*short-circuits that link us in the best possible way with reality, and allow us to return more or less quickly from that reality to our place of study with findings that are reasonably secure*” (p.9). Thus, method is a means to represent and understand and feed back into ideas on how the world works. The use of representative samples becomes a consequential concession to the impossibility of studying *everything*- and is therefore a relative of *specialisation* and disciplinary *narrowing down*.

With representation at the quintessence of *methodology*, what is the relationship a follower of non-representational convictions can build when constructing a methodology of one's own? Different disciplines and traditions have developed different *tools for, means for, and epistemes on how validity of research* may be retained with respect to the limitations caused by the complexities of the world and the *sum of the things that are*, their relations, dependencies, causes, non-things, absences, agendas, and biases (not last those introduced by the tools of study themselves and the studying observer). How can the premise of sampling at its most fundamental level sit with nonrepresentational *radical empiricism*; a type of empiricism that takes seriously those phenomena of social life worlds that resist exploration by many methodological tool-sets?

Out of a concern for this question stems my commitment to explore and push the boundary of text and textscapes as battleground for epistemic dominance and epistemic survival of subaltern epistemologies. Poetry is not a luxury. The *label... or - the declaration of being engaged into a poetic practice* provides us with an epistemic means to reclaim and subvert textualities' normalizing and colonial affordances. Pushing the boundary of text (as a form of code) for me is an alchemical resolution of an epistemological paradox with respect to the big epistemological rupture of “the two cultures” (cf. [255]) which becomes resolved through the methods of [d]esign_{un}sign[D].

^[i]The paper introduces the concept of *economies of representation* and explores ontological and epistemological aspects in representation theory. However, it falls short in addressing contemporary developments in representation discourse, such as intersectionality and postcolonial perspectives. The text's focus on conventional academic writing as a dominant mode of representation neglects alternative voices and methods that have gained prominence (notably digital methodologies, or methods researching the digital). The 1998 work is lacking practical guidance on how to implement alternative economies of representation in empirical research. While it calls for change, it doesn't provide concrete strategies for achieving this transformation.

Paradoxically, our utilisation of the notion of **anthropological strangeness** is intended to dissolve rather than reaffirm the exoticism with which science is sometimes associated. This approach, together with our desire to avoid adopting the distinction between "technical" and "social," leads us to what might be regarded as a particularly irreverent approach to the analysis of science.

Latour and Woolgar [169, p.29, emphasis added]

When developing a research strategy, the disciplinary approach and the history of the discipline are important in steering the researcher into an ontological, epistemological and strategic assemblage “*even when these [chosen strategies] are not the most appropriate tool*” [252, p.9]. Albeit that these methodological pairings^[j] are often taken for granted in practice, no discipline or epistemological tradition inherently dictates preference for any research strategy. ‘Method’ becomes *ravaged* through the nonrepresentational hermeneutic and performed in a new, invigorated and *queer* way. Positivism is opposed to interpretivism, deduction to induction, hypothesis testing against grounded approaches, context validity versus abstraction, qualitative data versus quantitative methods to name some examples. Such methodological pairings within epistemologies, ontologies and strategies have become splintered and attributed to either side of the divide of *the two cultures* ([255, 102]).

Vannini and Lorimer both meander and remain with the questions of *how a nonrepresentational methodology may resolve its intuitive contradiction into a space of emancipation and creativity*. The mere existence of nonrepresentational propositions entail in their own right a politically challenging momentum. It is my resolve and rigorous commitment to a *more-than-representational radical positivism* framed through creative design practice where I see my contribution to creative practice, NRT and the academic literature, as well as academic praxis of doctoral research from marginal vantage points.

The story I am telling is one of NRT as an alchemical resolution out of an epistemological paradox with respect of the big epistemological rupture of “the two cultures”^[k]) and its parallels in resolution with the methods of design.

Thrift’s work is explicitly influenced by Latour [167, 169, 168], Law [171] and Ingold [143, 144, 146, 145] and can be used to address weaknesses in conventional methods and theory by producing a constructive outlook on how a hybrid research paradigm may look and how subsequent research may be produced. Their phenomenological and *radical positivist* stance lifts the imagined deadlock of opposing research strategies. That means that stern

^[j]Quantitative research being associated with objectivist deductionism or positivist approaches, versus qualitative research being linked to interpretative constructivism or inductive reasoning.

^[k]Cf. Snow [255].

positivist approaches becomes emancipated from the connotation of being exclusive to natural-scientific and quantitative investigations. They enable epistemologic *recklessness*.

Recklessness here is meant as a term of admiration that enables new creative-yet-robust engagement with fundamental original definitions of epistemological rigour, but one that is *situational* and *inspired by the study of the material artefact and lived experience*, in a fashion that emphasises the individual case study whilst grounded in context, experience, location and locality. Framed that way, NRT is a figuration of positivism in its *ultima ratio*. NRT methods are not a *thing* (or set of things) intrinsically different in its toolbox^[1] of methods and approaches; it is in *what is done with this data* where the crucial difference is set.

^[1]In the discussion of research methods, a notable tension arises between two contrasting viewpoints. One perspective views methods as a fixed set of tools that can be straightforwardly applied to empirical subjects with minimal modification. In contrast, the other perspective challenges this simplistic outlook on methods and advocates for a more expansive and nuanced approach. Law's work on the *Social Life of Methods* serves as a reference that highlights a critical examination of the conventional 'toolbox' interpretation of methods Law [170].

6.4 Conclusion: My hermeneutic of Thrift

Thrift's reading of feminism, of emancipation and *of the Left* is one where feminist tenets have become hegemonic in their own right. Such a profound criticism of feminism needs to be well-argued yet, even Vannini - who puts his own work in NRT in direct heritage of Thrift's - describes the passages on Thrift's call for anti-biography as abstract and peculiar at best. Thrift alludes to the existence of a more profound humanness that is more profound than feminist worldviews:

Second, as must by now be clear, non-representational theory is resolutely anti-biographical and pre-individual. It trades in modes of perception which are not subject-based. Like Freud, I am deeply suspicious of, even inimical to, autobiography or biography as modes of proceeding.

Thrift [276, p.7]

An erasure of feminist politics – he suggests – opens up a deeper phenomenological perspective that empowers the things to articulate themselves on their own accounts. Such a non-human-centric vantage point (or at least an approximation to that) is what Thrift seeks to approach [174, 276, 283]. Positioned in such a way, feminist perspectives and NRT would appear to be undesirable for Thrift's envisioned use of non-representation. Thrift's guidance that – given the increasing number of feminist work that could qualify as more-than-representational – did not catch on.

It goes without saying that *not all stories are the same*, and whilst the notion of shared humanness is an interesting proposition, it must be made clear that such an “unaffected” neutral gaze cannot be equated to the experiences of male, middle-class positions that Thrift implicitly seem to presume/defend as valid default vantage point. I want to argue for the opposite: that is that the nonrepresentational method is in fact a potentially powerful asset in the feminist toolbox. Those micro-practices and subconscious rituals that are prone to remain unnoticed would be a prime objective to be made utterable with the means of NRT. Grasping *everydayness* and that which is often remains sub-textual can turn into shareable stories; stories that document exclusion.

Thrift's proposition is nonetheless regrettable as, after all, a central aim of NRT, is to facilitate the articulation of the subliminal. Globalisation is an atmospheric phenomenon manifesting itself everywhere, in movements, artefacts, the environment, history, emotions and futures, the glass ceiling, patriarchal structures, everyday racism, homophobia and the like are equally universal and yet ephemeral. A call for a categorical stakeholder's

biographical erasure evidently is problematic and far too drastic. Yet, NRT may offer alternate opportunities to resolve this conundrum.

I keep on returning to my endeavour to *tell better stories* and *tell stories better* which I achieve through my unique employment of NRT and creative new forms of feminist narration. For me, these new stories are a form of productive *reparative knowing*. Such knowing is characterised by its ability to mitigate, prevent and resolve instances of epistemic violence.

Thrift writes the following on this topic:

[... It] is possible to work on negative affects (e.g. paranoia) by taking up reparative positions that undertake a different range of affects, ambitions and risks and thereby allow the release of positive energies which can then be further worked upon. Seek pleasure rather than just forestall pain. Again, what we find here is an ethical principle.

Such projects of *reparative knowing* are, of course, becoming commonplace as means of producing affective orientations to knowledge which add another dimension to what knowing is. I am thinking here of many studies in the spheres of postcolonial struggles or struggles over sexual or ethnic identity in which a coalition of activists has been gradually able to change the grain and content of perceptual systems by working on associating affective response in both thought and extension.

Thrift [276, p.191]

Thrift's call to "[s]eek pleasure rather than just forestall pain" to me seems to be instance of grave thoughtlessness. The achievements of postcolonial and feminist activism, he suggests are the result of an affective shift (whilst withholding where and for/in whom this shift has taken place). In the backdrop of postcolonial, gender and sexual injustices, past, present (and future) his call to *seek pleasure*' is *unsettling* at best.

Recognising injustice and resisting the status quo are the very acts that Thrift cites as uncritical ingestion of oppressive ways of knowing on part of the left. A truly faithful uncritical subscription to the binary of the oppressor (as Thrift alleges activists harbour) would be a striving to merely seek to substitute '*oppressor*' and '*oppressed*' without intent to change the infrastructures, practises or hierarchies. He acknowledges the '*instantiation*' of capitalism into virtually all everyday practises but sincerely holds the opinion that this state is not undesirable. He advocates for a differentiated re-evaluation of capitalism that does not focus on its destructive forces. More important to Thrift seems that:

“[f]or quite a few people, capitalism is not just hard graft. It is also fun. People get stuff from it- and not just more commodities. Capitalism has a kind of crazy vitality.”

Thrift [275, p.1]

From my diary: There is indeed a crazy vitality to capitalism. An accelerating unbridled energy that takes root where capitalism is celebrated (or celebrates itself; or at least makes us celebrate it). New house owners celebrate the reason for their severe indebtedness for a significant portion of their lives. In a similar vein the release of new iPhone devices are spectacles of celebrations of consumption. Recently I happened to be wearing a lot of Adidas-branded clothing myself, and as I write these lines, I sit in a major chain coffee shop in my city's main shopping mall. And whilst I did not purchase anything today, but merely ended up using their free wifi hotspot today, I wonder - is this the sort of *fun* that Thrift refers to?

“The world of capitalism is best seen, I think, as one closer to the imaginary of the medieval world of dark superstitions and religious bliss than we fondly choose to believe [...]”

Thrift [275, p.2].

Unsurprisingly, such a nonchalant attitude is subject to criticism. Andrew Sayer writes that, in Thrift, “neoliberalism and the widening class inequalities of contemporary capitalism, [...] are passed over” [238, p.93].

I find it hard to bring together his calls of NRT as a method of compassion and unveiling of stories beneath-the-surface to appraise capitalism foremost as a source of enjoyment, teasing amusement or light-hearted pleasure. Thrift and his writings remain a paradox. On one hand, tracts of his writing are dense, complex and abstract; and other passages, sensitive, relatable and full of vulnerability. When I read Thrift the first time I did not pay particular attention to the middle section of the triptych that is his 2007 book. Part 2 is a single, extended chapter called ‘Afterwords’. In order to prepare this chapter, when re-reading his book a second time, things were different; and whilst I was half-bored gazing over the first lines of the chapter, two paragraphs borderline moved me to tears. In ‘Afterwords’, Thrift right from the outset declares that he is writing in the memory of his late father; to commemorate his father, and yet he grapples with the ethics of turning his memories into fodder for the academic circus.

Almost nothing that he ever did was written down and whereas I once would have seen this as a problem I now think that putting his life in order through text, in order to rescue him from the enormous condescension of posterity, may, in certain senses, be just another form of condescension”

Thrift [276, p.109].

Drawing together, with impressive subtlety and inherent *vicious critique of academia as a whole* in this opening paragraph profoundly impressed me. My own, appraisal of Thrift’s work and deeds outside of his scholarly writing and my strong personal reaction to these lines— for a moment, I found myself unexpectedly reconciled with him, and for a moment unexpectedly deeply moved, whilst reading his work. Given my on-going critical stance of him as a contested public figure, and the brief outline of his particular version of NRT, I am not seem to be the alone in struggling with his writings and the implications of his work. Parker [218, p.493] writes: “When academics claim to care about the Left, I am pleased. That is, assuming that consistency is a virtue in this new politics, and in the lives of people who write books like this.” Yet, in many ways, Thrift explicitly considers himself to be an emancipatory force *on the Left* and *of the Left*, whilst at the same time in his function as Vice-chancellor of Warwick University the discrepancy between the opinions voiced in his writings and his deeds is dramatic.:

Taken together, the two Thrifts are a lesson in how someone can go from celebrating “new and interesting forms of resistance ... many of them based upon a resistance to corporate power”, to branding free education activists “yobs”.

Woodman [316, para.4]

Establishing a straw man is not the aim of this piece of writing. Rather, I want to put forward the provocation that maybe Thrift is doing nothing else but taking ownership of his right to situatedness. After all, one can say that all he does is take ownership of his right to a partial perspective, and as part of that he is entitled to emancipate Left-liberal Foucauldian anti-hegemonic tools into a framework that suits him and his convictions best. Thrift lifts key ‘feminist weaponry’ from the Left and makes them amenable for market-liberal thought. On this appropriation by Thrift Andrew Sayer scathingly writes:

For all its insights on what the cultural circuit of capital is up to, this book is effectively complicit in this ignorance and lack of reflexivity. One could

comment, for example, on the insanity of acting in ways that are likely to end up in the destruction of the planet, but presumably that would be to make “too easy points that have as a consequence only the salving of the liberal conscience”^[m]

in Sayer [238, p.97]

In the backdrop of this phenomenological interpretation and reading of NRT, I interpret Thrift’s work as being a *queer* and *emancipatory reading practice*. Queer, in the sense of being an emancipated method from the binary of the partisan position and proposes NRT as a resolution that irreverently draws from the strengths of either side. *Queer* and emancipatory drawing on the tradition of queer (re)reading practises: a reading practice that unsettles existing frameworks seeking to emancipate from these structures by making them palpable. Given these substantial gaps between Thrift’s politics and my own, I want to take full ownership of my emancipated reading of Thrift’s work and my - potentially subversive - appropriation of his ideas.

NRT sees the artefact, performance or process in its own right; sees the things in a literal sense, *aside of its symbolic and semiotic meaning*. Mobile phones for example become disconnected from their symbolic and semiotic meaning (i.e. what they enable us to do, their social function and the promises and practises they enforce and enable) but instead their material heritage the origins of the phone’s components; the future flux of its material parts after the end of the phone’s life as a communication enabler. These practices go beyond the tenets of the new material turn, or Latour’s ANT. Latour strives for flat ontologies in the pursuit of new objective forms or narrative.

[E]ntire Ph.D. programs are still running to make sure that good American kids are learning the hard way that facts are made up, that there is no such thing as natural, unmediated, unbiased access to truth, that we are always prisoners of language, that we always speak from a particular standpoint, and so on, while dangerous extremists are using the very same argument of social construction to destroy hard-won evidence that could save our lives. [...]

Why does it burn my tongue to say that global warming is a fact whether you like it or not? Why can’t I simply say that the argument is closed for good?

Latour [167, p.227]

^[m]From Thrift [275, p.vii]

Once Latour advocated for more nuanced observations and storytelling, he now actively rejects it. He fully rejects any possibility of epistemic pluralism. His allusion that the deconstruction of climate change from a purely scientific descriptor inherently and inevitably leads to anti-scientism or empirical nihilism.

I hope to have shown through my work that such an argumentation is a deeply exaggerated *non sequitur* that is neither based in Latour's own original writings nor a consequential imperative from their implementation. Queer and subaltern narrative techniques or my creative practice of more-than-rational NRT are examples of *the more than rational* not being *at odds with facts* but instead an enriching supplement that unpacks them, revises them and adds to them; but not outright and blindly denies them. Lorimer aptly named his clarifying articles from 2005 [178] *Cultural Geography: The Busyness of Being 'More-Than-Representational'*.

'More than' -

Lorimer's important suggestion for a re-naming of NRT is apt. After all, NRTers insist on not *forgoing representation altogether*, but instead letting textuality's existence pose its own questions; and taking these questions seriously. Where Latour positions feminist and situated perspectives into opposition to *objective forms of truth* such as those produced as scientific-empirical *fact*, the opposite is true. More-than-representational cartographic methods in fact allow *us* to describe and articulate the social consequences of empirical phenomena; climate-change being a central driver of these. My own work on pollution or Stewart's work on *red* demonstrating this explicitly:

Its more-than-representational mode veers off the critical track of tacking perception, context, and cause onto an order of representations located nowhere in particular or in some paranoid hyper-place, like the state or regional prejudice. What happens instead is the throwing together of the phenomena of wood and water, territory, mood, atmosphere, and sensory charge. People, rivers, time, and space pop with significance like the raised knap of corduroy or a paper doll cut out of a dreamworld.

Stewart [260, p.20-21]

In producing such (what I call *queer*) mapping practices I imbue myself with the power to begin to bring into articulation my queer perspective through which I seek to re-discover my own environment. This environment being my physical ecology, my intellectual ecology and my institutional surrounding. My case is one where *the body* and its affective reactions and *a somatic practice* are powerful techniques to produce such accounts sovereignly. With

my body being ‘alchemically’ turned into a quasi Walkerian *propositional object to think with* that a de-familiarisation with myself happens, and subsequently seeing with a queer lens becomes possible.

An epistemic readjustment then becomes a political tool that uncovers and undermines and supplements grand-narratives; epistemic readjustment therein is a political tool through which I can introduce epistemological emancipation from habitual orders and introduce a form of randomness. This disturbance allows me to encounter my familiar environment in a manner that is unforeseen.

End of Part 3

"There is no more doubt."

Tuesday, the 25th of August 2020

Dear Saskia,

I hope this letter finds you well.

Latour once asked me who is my inspiration for my writing.. my role models. Who I am looking to write like; to emulate - ? I said something to the effect of “*well, I'd hope I am not looking for anybody else's voice when I write*”; that I am hoping to find my own voice. His response was a very French: “*Oh, don't give me any of that bullshit!*”

What I *really* thought, but was too dumbfounded to tell him is, that there *is* nobody whose writing I seek to emulate as, in all honesty, I have not yet encountered any academic author who's writing I find *truly* satisfactory. Tim Dean's [70] writing craft might come close, but so does Karen Barad's [20]. The two could hardly be more different, thus... somewhere in between? Anyhow, almost exactly 3 years after my encounter with Latour, I finally have an answer to his question. Who is my rolemodel in writing? **Niki Nakayama**. She says^[n]:

“This is gonna be the most horrible night of my life.” And I started crying a little bit. And I was like, *“It's gonna be okay.”* And then I was just like... *“Universe, if you're up there and if **anybody**'s up there, just let me get through **this** night without messing up.”*

But I think I used the word “*fuck up.*” [She laughs.] I was like,

“Just don't let me fuck up.”

As the night progressed and things were moving, I was more focused than I usually am, and I got through the night... and I walked away from it knowing *I could do this*. No matter what happens, *I could do this*.

At some point, you need to trust yourself.

^[n]Redactions by me.

When it comes to ██████...

...there's no more doubt.

Because of my culture, I'm uncomfortable with trying to make loud, bold statements. I could do that in the ██████. The ██████ can be an egomaniac. It could be loud. It could be aggressive. It could be all these things that I personally am not comfortable being.

It allows me to have crazy ideas or experiment, to not follow the rules.

Maria Fontoura^[o] on Nakayama: “*At this point, she's not trying to prove anything. She's carving her own path. There are certain things that in traditional 懐石^[p] would not be done. Her signature ██████ is one of them.*”

The ██████, it's called 強肴^[q], which [I] translated ‘*not bound by tradition*’ - ‘█████’s choice’.

People who have experienced 懐石 in Japan, they might find it questionable that I ██████. But I wanted to do something that was very *me*.

[...]

Earlier in my career, the motivation was that feeling that, ‘*I have to prove myself.*’ But at this point... the whole *feeling* for ██████ has shifted into something different: I'm enjoying this work more for myself, without thinking about pleasing people. Everything that is happening to me now is something that I've always dreamt of. I constantly remind myself that I have to really, really *live* it, to be *in* it... and appreciate it *now*, so it doesn't pass me by.

Niki Nakayama (in Fried et al. [86])

^[o] ██████ journalist from *the Wall Street Journal*

^[p] ██████

^[q] Shiizakana

Part IV

Returning to *the Ground*

Chapter 7

How I met this need:

My Head of School recommended that I brand this thesis

‘Where the Racism Emerges in the Code’.

It is certainly a powerful title, and indeed, a central motivation for my project is the countering of the emergence of racism in/through code. Yet, I respectfully declined, simply because think my project is *even* bigger than *that*.

7.1 My project

My project is enormous, ambitious and irrevocably committed *to the trouble*. I emphasise synergies across a wide range of marginalised communities and phenomenologically explore their exclusion as well as the consequences of their exclusion in the context of digital innovation. My work is a project of radical inclusion and emancipation and active resistance problematising the academic institution from within. It is a labour of *compassionate resistance* and *radical empathy*. Is that inherently a contradiction? This work has made a case that it is not.

Whilst at first hand my project may appear to be

(1) an exploration of the digital medium and new methods of its investigation, it is just as much

(2) an examination of *the thesis* and overall (textual) academic practise,

there is more to my work than meets the eye.

Staying with the trouble here means a firm commitment to the circumstances I am bound to, via my own biography, as well as the contemporary socio-techno-political context I find myself immersed in. These are entangled and conditional to each other. My biography informs my ability to perceive exclusions, my positionality informs my argument, and my argument is conditional on a certain way of word-smithing and text-crafting, which *bears witness and negotiates* the imbalances that are embedded into the digital-academic medium,

the medium I find myself encased in.

Within this textual form, and *the thesis' life as institutional artefact*, certain ways of knowing, and arguing become privileged/stifled over others; disadvantaging my biography, biographies like mine and other subaltern knowledges's ability to participate in *thesising*.

On one hand is my partial-hermeneutic of exclusion, making me able to notice and utter these observations which could only stem from me and my biography, yet (on the other hand), the very nature of these observations and their fragility - my fragility - make writing this hard in a way like nothing else; hard - and yet unimaginably needed; for my own sake; but also for others - respectively *with others in mind*. My project is unlike reflective biographies, and does not want to be placed into the canon of literature belonging to creative writing. Nothing is inherently wrong with these forms of writing, yet they are not my chosen labels. My intellectual invocation stems from the concept of the *biomythography* [176]; but as a method/means to write oneself into existence and therein - through existence - become a challenge for Research.

My work is political and intended to broaden the envelope of what can *pass as academic*. *Rigorous thought* is not a luxury, it is an attempt to make sense of one's life, surroundings, experiences and injustices and limitations. In my case, above-all, limitations. Through *the digital, the thesis, academia, and the written medium*. All this, all *these* are entangled and conditional to another, and my thesis is conditional on this ensnarement. Investigating *the-digital-at-large* at an infinitely detailed level is an incommensurately large task, but it is in nothing less than *there* where this work emerges.

My commitment leads me to reject any notion that I ought to tame my aims in order to be neatly archivable and conducive to taxonomy. I reject the notion that I should privilege any aspect of my investigation over another. ('Their' definition of *detail*.) That may be *the working method, precedent and approach pursued by others*, but I will do no such thing (not here). This work is mine, of me, of *the other* and it is needed. My account and my biography standing in for libraries and cities full of uncited, uncitable, forgotten and erased thinkers, stories and lost knowing.

My knowing is one of a holistic and ravaging nature; and I make my point of contribution to STS (Science and Technology Studies) that *such new knowing* demands new ways of writing, narrating, evidence, and reading. *This* will be in service of achieving my aim: to commit to *the big picture* at infinite detail. My rigour does not emerge from isolation, my rigour is *of context*.

The lens of my thesis is my body, heritage, ancestry, *locality*, epigenetics [■], identity and needs.

2021 brings with it an increased attention to *intersectionality* and the need to decolonize. I attend many meetings on those two topics. I make two observations:

(1)

I usually am the only person of colour (PoC) in these (virtual) rooms. I consistently am more knowledgeable (in theory, practice, training and experience) than those who sit next to me, and

I am almost without exception, the only person in the room who does not get paid for their attendance.

I would never dare to deem myself in the matter of Decolonizing *adequately learned* in a manner that I consider *satisfactory*. **I am blatantly aware of many of my shortcomings, and I get nauseous at the thought of all the many things I currently am unable to even sense my own oblivion in.** Yet my past training and experiences *do include*: (a) a substantive training in critical theory, feminist theory, post-colonial theory and decolonizing practises (enough to get me summoned by another University to teach these things and supervise at PG level), (b) a decent amount of 'hands-on' activism and *applied decolonizing*, (c) fieldwork "with" indigenous communities, and (d) a colonized heritage in my biography itself.

I *am* more knowledgeable in these matters than those to my *digital* left and right, below, and on top of me, which is not a claim to brilliance on my part, but merely a reflection of an absence of knowledge in these matters on the part of various decision makers and institutions. The thought of all those brilliant and extraordinary PoCs who trained me (and continue to train me to this very day) brings forward in me a bitterness that makes *diplomacy* hard.

Eventually I make time (at the expense of writing this very thesis) and smile, and mince my words and patiently

catalyse what I can achieve on my own in matters of decolonizing

whilst I try to ignore the fact that it takes place on the back of free labour by *this* person of colour.

(Good thing I have a prescription for Ritalin.)

(Good thing I rarely take it,
or
I would get nothing done
that matters.)

My work and my writing will be neither limited by discipline, language, culture, grammar, syntax, orthography, [M]ethod, timeline, convention, medium nor tradition - and instead - all of my life, and deeds, and impulses all are subservient to this (my? our?) overall project. In this sense, this work is without compromise in its approach and mission of negotiating *that balance* of

academic needs with

ethical, moral and political imperatives, provided by the *status quo*.

(**That** is the need for *this*.)

And over the course of my work I will not only stay with the trouble, I become the trouble, and I will show why you must be troubled too.

The outcome of my labour is a *diegetic prototype* [56] for a new way of enlivening the academic medium; a *decolonized and intersectional thesis* as well as a demonstration of *new knowledges* and *new ways of knowing* that can occupy this new space that I have created. *Diegetic* being the design-specific term for 'a type of prototype that makes it possible to think (and discuss) something new which does not yet exist' but in a manner where I do not merely describe *what such a decolonized thesis should look like*; instead I demonstrate it to you *here and now*. (We are already on the way.)

Such writing, discourse and knowledge-encryption is a most overdue deed of restorative justice [189], equity and fairness. This new handwriting of mine prototypes a new way to decolonise, emancipate and re-think academia and its practices. It is catalysed by my biography, heritage, queerness, experiences and sensitivities

in intersectionality

with my (un)medicated madness.

7.2 The big picture

A conclusion completes the scene for the reader, concludes to ~~~~~/them/her/him why the work was necessary, why the work was needed and how I have achieved what I wanted to *make happen*.

to me that sounds a lot like "baggage".
 Alright then, here shall be **your** baggage:

The remit of ‘the digital’ is limitless. Its discussion and shaping cannot be a privilege to those who call themselves *technologists* or similar. In the same way that capitalism, sexism and racism are pervasive enacted phenomena, *the digital* too, is in no way confined to screens, databases, digital infrastructures or the computing disciplines. Albeit shrinking, yet: - in my experience, it appears that there is still a certain hesitance from non-computing scholars to engage with *digital technologies* and *matters*; especially when compared with other *grand-issues of our time*:

- An absence of any training in economics does not disqualify a scholar from engaging in considerations of capitalism’s impact and entanglement with/on society and the planet.

- An absence of a knowledge of the Feminist literature does not (for better or worse^[a]) disqualify scholars from commenting on issues of sex, sexuality, gender and gender identity; and

- *not-being-a-climatologist* does not in any way release one of the need to be mindful of one’s own research impacts and entanglements with the global climate.

The same goes for *the digital*.

Shaping (and discussing) *the digital* cannot remain a privilege of those who are *literate in computing*; and its research cannot be limited to methods that privilege *detailed close ups* and small and concrete case studies. There is also an urgent need and imperative to approach *the digital* at-large (and to do so right from the outset).

Whilst I firmly value and stress the importance of surgical *thick* [93] ethnographic studies of *the digital*

(such as social practises such as technology-mending [198]; technologies and their colonial entanglements with e-waste [270]; the impact of *the digital* in a *particular way* such as carbon footprint [159]; cultural analysis of computer games in the tradition of media studies [321]; the potential to support disabled individuals and communities [317, 271]; discourse analysis of policy underpinning and shaping governance and technology’s governance [208]; the feeling and acts of motherly love and care supported by digital tools [53]; software-production-site ethnographies [7]; or the impact-and-enmeshment of technology and indigenous culture, etc, etc, etc, ...)

^[a]See also Walsh [299]

I am certain that there is also a need for a brave overall approach to the topic; and I will demonstrate how I propose this could be done.

The right of being permitted to ‘speak about the big issues’ is usually reserved for (in)famous and established scholars in the field(s) but I assert that there is also a need (and right) for such work to hail from early-career-scholars. Just as large-scale projects involving *digital artefacts* (which concern us all) are ‘dodgy’ when deployed “top-down” [6, 71], “big philosophical thinking” too, is a democratic right and must be permitted to sprout and blossom “bottom up”.

Nothing-is-non-digital.

We are *of/in/through/via/with* the digital. My exploration of *the digital-at-large* is therefore nothing less than equally-so an exploration of the *digitised human condition*; and my madness and the wisdom of Audrey Lorde make me brave enough to pursue this in this manner.

*“When I dare to be powerful, to use my strength in the service of my vision...
It becomes less and less important whether I am afraid.”*

Audrey Lorde [177]

Dear prospective decoloniser,

A software architect or programmer looking at my work to find aid in learning about enacted technological racism hopefully will find my work *instructive*, yet, I make no promise of *instructions*. That is a type of labour I did not do for you. That is not the result out of a *lack of want, laziness or malice* or a *sense of superiority on my part* or an attempt *to be original for originality’s sake*. It is because I cannot offer you an instruction. Looking back on my thesis - I regret to conclude - there can’t be one.

Solutionism is very much at heart of the problem.

Colonialism (and exclusion) are not an abstract-evil force that can be countered, it is continuously instantiated and emergent from ubiquitous, mundane and everyday practices. Much of racism is abstract, ephemeral and enacted; and it is in you and me.

Exclusions’ insidiousness is that these practises are interwoven into our every life, into our foundations of language and thinking, our buildings, roads, architectures, train tracks, movements, software(s), rivers, bodies, climate, statues, schools, names, hospitals, writings, tables in *all* and in every way we [*be*] (sic).

As such, I cannot offer solutions for you to do better (I can barely offer these for myself). I cannot (and will not) offer you this service.

Your decolonizing begins with *you*.

I cannot even make an *objective* argument for decolonizing; as *the premise of argument* and *the premise-promise of reason* is colonial, and more a toxic life-draining distraction from the realpolitisch matter-at-cause.

[Slower. Why? What makes you say this, can you back this up? You need to explain this in more depth to the reader.]

There is indeed a wealth of research documenting the benefits of decolonizing and listing the advantages of inclusiveness from a business/strategic vantage point [327, 150, 141]

but I want to stand away from any project of diversification that is guided by motivations of profit, commercialisation, productivity or return-on-investment. This kind of premise and argument excited me briefly in the past, but the price for *that kind of integration* is *at best* assimilation at the risk of a grimace-like caricaturing of oneself (cf. also [80]).

My True decolonizing must foremost centre on the needs of colonized and marginalized communities. Must take place for them and on their terms. And whilst *in practice* the support of *centred voices*^[b] is (for better or worse) a non-negotiable prerequisite for success, my project falls into a different tradition: an unapologetic one; a proud and colourful assertive resilience. An act of self-love and self care.

This work is not a service.

It is a document(ation) of thinking, of being, a demonstration of being-as/in-resistance. The work documented in this thesis is a longstanding project of *learning to see*. Learning to write and an 'un-learning' [100, 158] the temptation to surrender, to comply and be dociled,

to self-docile.

7.3 Meeting the text *half-way*

This work is anything but *docile*. Over the course of these past chapters, I took you by the hand and slowly guided you through a thick underwater-forest of ideas. My work is dense, untamed and full of life; *of life* and life-affirming.

It is ~~distracted~~ curious work,
~~impulsive~~ creative work,
~~forgetful~~ dynamic and engaged work,

^[b]Read: voices who get to speak from the centre and not *the peripheries*.

work that can't stay on point sees what others miss,
 hyperactive energetic work,
 disorganised spontaneous work,
 stubborn persistent work,
 that I insist is not 'inconsistent' but rather

over-and-over again shows flashes of brilliance.^[c]

[N]eurodiversity is not only part of who I am, how I have become, my bane and super-power,

it is my method. Reader, my work has asked a lot of you, yet, - I promise to have done my upmost to never let my word-smithing be the source of anguish on your part. "I am nevertheless too sensible of my defects not to think it probably that I may have committed many errors" [108, p.164], and so I regrettably deem it more than likely that we may have briefly lost sight of each other in this thesis, but I have asked of you to nonetheless bravely continue on our journey.

Both of us are divers^[d] in this thesis, we have looked out for each other, carried each other and now we are connected by a sturdy safety-rope, spun out of the threads of my writing, your reading, the ink on the paper (or the pixels on your monitor), a common sense of ethics, justice, and a spirit of compassion. In instances of separation, I asked you not to halt! We are forevermore bound to words, but these words ought never be tools of oppression but rather utterances

"of greeting,

not of confrontation,

of anticipation,

not of prediction"

[145, p.viii, *page layout adapted me*]

Poetry is not a luxury. Poetry is not a textual practise. Poetry emerges in response to being confronted with the limits of reason, the thresholds of (one's) language and the boundaries of cognition.

That is why I am drawing so much of my strength from the *nonrepresentational literature*- ; A body of work that has become part of me, and I of it.

^[c]List adapted from *the ADHD mirror*: <https://chadd.org/adhd-weekly/adult-with-adhd-you-rock/>

^[d]as in SCUBA

It is NRT's explicit invocation of novel forms of writing that square this circle of *representing without constricting*, and *putting words down on paper, but in a fashion that leaves them mobile* that I am committed to. This thesis is not docile, this work is not a service, and this text - whilst designated finalised - is anything but *finished*. Instead these words remain very much mobile-dormant, only to become instantiated in dialogue with you, - the reader. My resort to *the poetic* is not an indulgence - but the only manner in which I am able to pursue this endeavour. This was the case before I read Audre Lorde (et al.)'s work - and since I read it, I am *even more assertive* with my reclamation of *language* in extreme circumstances. Poetry offers scope for innovation and new "different way[s] of writing"; or alternative narrative genres such as design-fiction (e.g. Thomas et al. [272], which I co-authored) or Kathleen Stewart's incredible work-and-play with *topological narratives* - catalysed through the emergence of the colour *Red* - throughout time, space and biographies [260].

In both texts stories become re-threaded through the lens of an unexpected golden thread through which the world is made sense of. New unbridled vantage points, emancipated narratives, new networks of connections and new ways of being rigorous, engaged and *of context* rather than *of(f) topic*.

Works like these reveal social relationships existing between humans and humans and their companion objects; their inter/intra/wovenness [20]. Such an alternative perspectives enable *new ways of telling* that facilitate subaltern stories and makes them *tellable* (respectively told).

Looking back at my years of work, I finally realise what the golden thread of my vastly different interventions was. My work ~~was~~ is firmly committed, but to what or who(m)?

They were of *me*.

I am my own method, my body is my lens, my perspective is my topology and context is my rigour. And whilst *bodies*, *context(s)*, people, and *that which is infinitely large* is hard to write, - I will nonetheless endeavour to write about nothing less.

This is a new way of writing, a claim to ownership of text by *those kinds of knowing* that are usually not considered *writable*, worthy of record, sufficiently rigorous (or rigorous *in the right way*). This discrimination ends now; this work will be a precedent. It is *our* claim to a doctoral text.

This thesis is calling on the faculty's bluff promises: This thesis does all the things a thesis ought to do, but does them so much differently. My work is a claim and assertion of a right to be written. "Other creatures do it differently, but verbal intercourse has always been our human way, and our entitlement." [145, p.ix]. I entitle us to this new writing; as a human and not an other-creature. "Unruly" knowledge [33, 286] *is still knowledge*,

and as such it is entitled to be written
and recognised
and read.

Are you in?

7.4 How I met the Lancaster MARP PhD criteria:

MARP: Manual of Academic Regulations and Procedures

A successful candidate for the degree of PhD should be able to demonstrate:

(a) an ability to conceptualise, design and implement a major project for the generation of significant new knowledge, applications and/or understanding, using appropriate concepts and methods, where necessary adapting these to meet unforeseen issues;

I claim that my work has produced a significant amount of new knowledge(s) attested through:

- the production of conference contributions,
- published artwork(s),
- published peer-reviewed papers,
- the contents of the thesis and
- the embodied and diegetic knowledge that is woven into the construction/mechanics/form of my thesis-artefact.

(b) a systematic acquisition of, and insight into, a substantial body of knowledge including the primary literature in their particular area of interest;

- I systematically engage with primary literatures from (above all) the fields of critical theory, STS, ethnography and philosophy; as well as the body of literature of HCI.
- I demonstrate my insights into these disciplines by engaging these writings with issues in/of computing and its disciplinary-institutional practises of the interconnections of *digital innovation* and its embedded knowledge-power(s).
- I demonstrate my insights into these literatures by mobilising philosophical concepts and debates and issues across the disciplinary context into the realm of digital innovation and apply them to my research in computing.
- I am firmly familiar with the literatures above to successfully make use of/for them to engage/inform with/against debates in/on computing and *digital innovation*.

- In particular I am fluent in the philosophical literature on non-representational-theory as conceptualized by Thrift and advanced by Vannini and his collaborators.

(c) an ability to relate theory and concepts to evidence in a systematic way and to draw appropriate conclusions based on the evidence;

- I demonstrate a command of the STS literature and its debates and concepts and systematically engage in STS-related debates throughout the entity of my work; from title all the way into the bibliography (see the acknowledgement section of [44]).
- I am convinced that I have not only made convincing and appropriate conclusions from my investigation, but also act upon them which I demonstrate in the materiality/construction/architecture of the thesis-object itself.
- I am convinced that I make a strong case in support of my central hypothesis being that *non-representational theory* makes a powerful addition to *digital innovation* in particular with regards to its potential to make *the digital* a more inclusive space to marginalized communities.

(d) critical investigation of their research topic resulting in the creation and interpretation of knowledge which extends the forefront of their discipline through original research;

- The work that has emerged as part of this PhD research project, respectively the projects that buttress this thesis has also been published in academic circles and peer-reviewed journals and conferences; and whilst they are not *the same*, they are *of the same*; they are of equal quality and rigour. As such I am convinced that I have evidence for my claim that *created knowledge which extends the forefront of my discipline*.
- Therefore I think my publication list and conference contributions are indicative/testament to the originality and pioneering nature of my work.
- Whilst my publications are mainly limited to the discipline of HCI, my thesis research offers deeply original new connections and new insights relevant to discussions and debates within (and beyond) STS.
- These ideas, sanctioned by my peers have been included and consolidated into this thesis.

(e) a detailed understanding of, and ability to use, applicable techniques for research and advanced inquiry in their field;

- I make a case that my understanding of STS's reasoning and writing techniques and
- my command (and innovation) in terms of STS's methodological remit has been demonstrated as part of this thesis.
- I refer to *the practice of writing* and approaches to *knowledge encryption* as core-technique in STS, sociology and ethnography which I have innovated in my work.

(f) that they can make informed judgements on complex issues in their field, often in the absence of complete data;

- Given the large scale of my project *an absence of complete data* was inevitable. *The digital* is inevitably a complex issue in its own right. I maintain that this thesis nonetheless can sustain the claim to have successfully made *informed judgements*.

(g) that the research is of publishable quality and is of a standard which satisfies peer review;

- I have a number of peer-reviewed publications and thus consider this criterion met.
- In exchanges with editors of journals in the context of conferences (both, online and offline) have been approached by various boards with expressions of interest to publish my work; particularly in the context of exploring new ways of the academic form.

(h) that they are competent as an independent researcher in their discipline and capable of continuing to undertake research at an advanced level, contributing substantially to the development of new techniques, ideas or approaches;

- I believe that I make a case that I am a competent researcher in my discipline STS as well as in HCI alike. As stated above my work has been accepted by the main research outlets and I continue to be an active member of the active STS, HCI, mobilities and *Creative Computing* domain.
- I believe that I am offering substantially original techniques of writing and in ethnography. My work fills the important gap between STS's demands for inclusive forms of writing, the appreciation of bodily wisdom in the academic context and inclusive epistemologies centering on other-than-dominant engagements with the world; be they queer, non-western, non-able, non-linear, more-than-rational, - and *more*.
- I furthermore produce innovation of methodological kind (in STS and HCI alike) and,

- I offer a broad range of new ideas, approaches and arguments relevant to my target-discipline(s).

(i) an understanding of the place of the research in the wider context;

- I make a case that I understand the importance of my work in the wider context: be this a context of political nature, institutional nature, disciplinary nature, personal-biographical nature, departmental nature or activist nature.
- My work identifies gaps in the STS literature and the literature of HCI, and fills them.

(j) an ability to recognise the limitations of the research undertaken and to be able to suggest ways of overcoming these in future research;

- I (as I also write in my introduction) firmly make a case that this work is not *directly-instructive* but *pedagogical*.
- I firmly assert that I am making a case for the inclusion of *NRT* as method and that it can offer a means to emancipate HCI research and make it more inclusive, as well as empower non-technology-literate STS scholars to engage with technology-at-large through creative non-representational bodily methodologies.
- I am very obvious about the context-bound nature of my work and that my research cannot be *mobilised directly* but must be appropriated to any following reader's context, aims and biography.

(k) an ability to write clearly and effectively and to meet approved criteria for formal presentation of a written thesis;

- I have used the official Lancaster Doctoral Thesis template and therein my work is written in line with the BSI *British Standard 4821 1990* REF on the *Presentation of theses and dissertations* and complies with it wherever possible and conducive to argument.
- I make a case that I wrote as clearly as I am able to; adequate and in constructive frictions with the conventions and traditions of my target-discipline (STS) and I maintain that any remaining ambiguities in the text are not the result of an absence of clarity-of-thought but a requirement to achieve objective (e): i.e. my innovation in the field of ethnographic and STS writing and scholarship.

(l) the qualities and transferable skills necessary for employment requiring personal responsibility and autonomous initiative in complex and often unpredictable situations;

- I believe that any research conducted over the course of 2020 and onward is testament to any researcher's talent and skill to act in a manner that demonstrates "personal responsibility and autonomous initiative in complex and [...] unpredictable situations".
- Given that I have been hired and recruited several times during my PhD candidacy I consider myself *employable* in a scholarly function as a direct result of my/this research; my employment is a direct consequence of the work I did as part of this PhD and my creative-didactic practise that is heavily informed by (as well as the outcome of) the research in this monograph.
- Since September 2021 my *associate lecturer* position was expanded to a full lecturer post at the Creative Computing Institute at the University of the Arts, London.

(m) the ability to communicate their ideas and conclusions clearly and effectively to specialist and non-specialist audiences

- I have several conference contributions which are testament to my ability to communicate my ideas to an audience of peers, as well as outreach activity (such as globally acclaimed podcast appearances) where I talk about issues and matters related to this thesis in a clear and effective way. A full list of these engagements is attached in the annex section of this thesis.
- My thesis is written for a specialist audience (STS audience) and those committed to the non-representational literature;
- yet my work - as I make clear in this opening chapter - also has a firm more-than-academic and more-than-STS dimension. This includes code-scape architects, novice writers, indigenous and colonized readers, queer audiences, scholars of media studies, artists, poets and many others; many others who are not STSers *per se* but nonetheless interested or sensitive to the issues, politics or methods I use to *make my case for an inclusive mode of writing-coding, catalysed through the body in matters of the digital*.
- Furthermore I will take the occasion of my viva to demonstrate my ability to communicate my thinking, reasoning and writing in a manner appropriate for a specialist audience of peers.

7.5 Conclusion

This thesis is indeed an unapologetic, intersectional work of self-advocacy. A self-advocacy, from a place of power. My Head of School recommended that I brand this thesis

Where the Racism Emerges in the Code.

It is certainly a powerful title, but - this thesis is

*so
much
more
than
that.*

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