

**Rhizomes, assemblages and nomad war machines –  
re-imagining curriculum development for posthuman times**

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This thesis results entirely from my own work and has not been offered previously for any other degree or diploma.

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Signature .....

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## **Abstract**

We live in troubling times. Issues of planetary concern under a regime of advanced capitalism include environmental degradation, pandemic, widening inequality gaps and mass migration; while accelerated technological mediation continues to connect us like never before. To say that the situation is complex is an understatement; yet meanwhile, education in the West continues to follow and repeat the same pedagogical and curriculum trends that we have seen for the past century.

Taking a ‘posthuman turn’ in education involves a shift from learning-as-cognition to a focus on connections between humans and non-human others; a move from the primacy of the written and spoken word to the re-emergence of the embodied self; and a recognition that other-than-human agents are always present in processes of learning. Posthuman pedagogies decentre humanistic values which privilege the individual (and certain kinds of individual at that), and Cartesian dualisms which separate body from mind, teacher from learner and human from non-human others.

Although the ideas are exciting and offer potential for liberatory pedagogical practice, the language of posthumanism is dense, challenging and often exclusionary. This thesis tells the story of how a group of educators from different sectors and countries put the ideas to work practically, using artistic and dialogic means to disrupt ideas of ‘education as usual’ and explore ideas of a posthuman curriculum. The findings offer new ways to explore education, either through professional development, informal learning projects, or public scholarship, demonstrating how posthuman philosophy can be employed as a

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navigational tool to rethink and re-imagine education for the 21st century and beyond.

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*Since each of us was several, there was already quite a crowd.*

*Deleuze and Guattari (1987, p. 3)*

The work of a PhD is individualising. You write alone; attend a viva alone; and are assessed alone.

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## Publications derived from work on the Doctoral Programme

Sidebottom, K. (forthcoming) A Thousand Gateaux: Rethinking Deleuze through the Great British Bake-Off. In: *Would Foucault have read Harry Potter? Unlocking social theory with popular culture*. Barnes, N. and Bedford, A. (eds). Springer.

Sidebottom, K. (2019) Inquiry-oriented or reflective teaching from a posthuman perspective. In: *Encyclopedia of Educational Innovation*. Peters, M.A. and Heraud, R. (eds). Singapore: Springer Nature.

Sidebottom, K. (2019) Nomadic enquiry: reimagining research ethics for 'posthuman' times. *BERA: Reflections upon Practitioner Research and Commentary in a Networked Society*. [Online]. Available from: <https://www.bera.ac.uk/blog/nomadic-enquiry-reimagining-research-ethics-for-posthuman-times> [Accessed 6 January 2021].

Sidebottom, K. and Ball, D. (2019) Art as a 'thing that does'; creative assemblages, expressive lines of flight, and becoming-cosmic-artisan in teacher education. In: *Decentering the Research in Intimate Scholarship*. Strom, K., Mills, T. and Ovens, A. (eds). Bingley, UK: Emerald Publishing. pp.153-165

Sidebottom, K. (2019) Disruptive pedagogies for teacher education: the power of potential in posthuman times. In: *Posthumanism and Higher Education: Reimagining Pedagogy, Practice and research*. Taylor, C. and Bayley, A. (eds.). London: Palgrave Macmillan.

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Sidebottom, K. (2018) From 'Prevent' to 'Enable' – Reclaiming Radical Thinking Spaces through Democratic Education. *Feminist Dissent*. 4, pp.246-273.

Mycroft, L. and Sidebottom, K. (2018) Constellations of Practice. In: *Identity and Resistance in Further Education*. Smith, R. (ed.). Oxford: Routledge, pp.170-178.

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## Chapter 1: Taking Flight

### Refrain #1

*15<sup>th</sup> March, 2019. I'm sitting on the train, on my way home from the very first meeting of #BrewEdLeeds; a new education movement which brings together teachers from all levels and sectors of education to discuss and share experiences, research, and stories. I came along today as one of the presenters; but unlike the others, who were talking about schools, behaviour, concepts of education and leadership, my session was focusing back in on the BrewEd movement itself. I was exploring the way in which so many disparate teachers from different areas of the country were gathering together both online and face to face, outside the formal hierarchies of organisations – giving up their Saturdays freely to connect and bond in solidarity within a system that limits agency. I was exploring how and why this might happen, and what metaphors might help us learn from and build on this.*

*I was speaking about the rhizome.*

*As I reflect back on the event, I consider the way in which you're often advised during your PhD not to share findings or writings until after submission. I'm over a year away from this point, and yet my ideas are already out there. Twitter users at the event are busy discussing the points from my talk online; some are sharing images of plants and flowers as they apply the metaphor to their practice; one has changed his Twitter biography to include the word 'radicle' (an in-joke from the day).*

*I'm thinking about the nature of data as static and ideas as only needing to be presented at a certain time. How do we contain these concepts, rhizomic in*

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*their very nature, within the restraints of a PhD timeframe; particularly when our work is about social change? How do we stop working within the bounded rhythms of academia which hold us back from acceleration or deceleration? Like the 'leaky bodies' used to reframe feminist ethics (Shildrick, 1994), my work seems to be bleeding out into the world around it, and who am I to hold it back?*

(extract from research journal, 15 March, 2019)

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## 1.1 Educational precarity in the Anthropocene

*'Curriculum studies, like other humanist forms of intellectual labor, has long been anthropocentric. While we cannot offer any specific vision of what a new posthumanist curriculum studies will do, we are at the dead end of humanism, and now, together, we have to burrow in other directions' (Snaza et al, 2014, p.52).*

We live in troubling times. Issues such as environmental degradation, mass migration, climate change, species extinction, increasing technological mediation, widening equality gaps, precarity, and overt and violent racism and extremism - and of course, pandemic - comprise just some of the global challenges facing the planet as it enters the anthropocene. Human activity has transformed the world to the extent that current modes of being and becoming are no longer sustainable. We are living, in the words of Gramsci (1999, p.276), in a time of 'interregnum' - when 'the old is dying and the new cannot be born.' This crisis demonstrates a need for a new ethical engagement that allows us to 'dwell in the dissolve...where fundamental boundaries have begun to come undone, unravelled by unknown futures.' (Alaimo, 2016, p.2).

The global pandemic of 2020 has exposed inequalities along existing and emerging lines, as simultaneously the West faces intersecting challenges of white nationalism, fundamentalism, and associated democratic predicament. It is clear that old approaches are becoming limited - as Strom and Martin (2017, p.5) state:

As we move into this new political era, however, one point has become clear: good and common sense (Deleuze, 2004) ways of understanding

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the world and the current political movements are unable to account for the complexity and contradictions inherent in the confluence of today's socio-political phenomena.

Within this complex and uncertain space, the spotlight often falls on educators as being the ones with the ability to resolve issues of humanity through provision of (remedial) teaching and learning. For the United Nations (2018, para.2), education is a '...passport to human development. It opens doors and expands opportunities and freedoms. It contributes to fostering peace, democracy and economic growth as well as improving health and reducing poverty.' The focus here, whilst ostensibly logical (who would argue with a focus on peace?) centres human development and sustainability. It feels out of kilter with the material predicaments (unequal access to resources) and environmental imperatives of modern times; '...the discourse of sustainability echoes that of conservation...in its tendency to render the lively world as a storehouse of supplies for the elite.' (Alaimo, 2016, p.169).

Our global predicament is leading to an increasing call to de-centre the human within education and the ensuing humanistic conceptualisations within the design of curriculum. Jagodzinski (2018, p.84) suggests that we stop focusing on emancipatory humanist teaching that aims to create (but of course never establishes) a 'world-for-us'; and calls us to 'grasp the event of the Anthropocene, for the future of our species.' But what might a 'posthuman' curriculum that de-centres the human look like? And how might it be enacted?

Within current educational spaces of performativity, managerialism, academic capitalism and reductionist thinking it is difficult for teachers to identify ways to

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truly act in ways that enable creativity or find ‘spaces to dance’ (Mycroft and Weatherby, 2015) so that, (along with our students), we might re-imagine the world in the way that Jagodinski and Snaza suggest. Recent evidence indicates that the English teaching profession is itself in crisis; only 60 per cent of teachers remain in their jobs five years after starting, teacher training applications are down by five per cent and teacher pay has declined by ten per cent in real terms since 2010 (Education Policy Institute, 2019). Factors such as increasing mental health issues amongst both staff and pupils, and reactionary responses to ‘problematic’ pupil behaviour also give cause for concern; an additional 1000 pupils were excluded from English schools in 2016; reversing the downward trend seen in England over the past ten years (DfE, 2018).

Education itself is increasingly subject to the forces of neo-liberalism:

A complex, often incoherent, unstable and even contradictory set of practices that are organized around a certain imagination of the ‘market’ as a basis for the universalization of social relations, with the corresponding incursion of such relations into almost every single aspect of our lives (Shamir, 2008).

Within this context, education becomes a space of measurement, performativity and datafication in which policy becomes an algorithm and teachers act as controllable variables within the system. The emphasis is on pedagogical activities which will have a significant impact on students’ measurable outcomes; not those that impact emotionally or relationally (Ball, 2016). Within these spaces it is difficult (and in fact counter-cultural) for teachers to find room for consideration of deeper ontological or epistemological questions around

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education in the current times. Alongside this sits a culture of anti-intellectualism, whereby subjects such as art, literature and science are downgraded into the kind of knowledges that can be memorised and regurgitated to suit prescribed tests rather than studied deeply and meaningfully.

This instrumentalism can affect educators on a micro level too, deadening their own attitudes towards learning without them fully understanding why. Thinking, in an age of academic and expert distrust, is seen as the practice of the elite (that is, the preserve of those at the higher echelons of the educational system); yet we are in a time that calls for new ideas and approaches to complex ethical dilemmas more than ever. 'Think, we must' as Virginia Woolf said (1938, p.60); but in accelerated consumer cultures of product, customer and service, time and space for these activities is eroded. Where are the spaces for Gramsci's idea of 'philosophy of praxis', which push thinking outwards to incorporate the politically-informed, socially relational aspects of our situated lives?

The notion of '21st century skills', defined by UNESCO as 'An overarching concept for the knowledge, skills and attitudes citizens need to be able to fully participate in and contribute to the knowledge society' foregrounds collaborative problem solving and digital capability (UNESCO, n.d), and offers an opportunity to educate differently. However, whilst the value of these skills has been acknowledged across the education sector (Griffin and Care, 2015), the focus within standardised schooling systems continues to be on individual performance.

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Recent predicaments such as the Covid-19 pandemic have demonstrated the need for working across disciplinary boundaries and thus the need to educate in a non-siloed and transdisciplinary way becomes ever more pertinent. As Bayley (2018, p.34) states: 'Deeply more entangled thinking-strategies might help us in the business of education engage at the very root level of the trouble that is producing shifts that are arguably as tectonic as they are creative.' The reluctance, even in the midst of global pandemic, to imagine education differently is a testament to the way in which 'social reality' itself has become 'schooled' (Illich, 1970, p.3).

Despite this negative picture, this study aims to show that teachers across all sectors are nonetheless seeking out and exploiting subversive places of hope and transformation. The contradictory, or schizophrenic nature of neo-liberalism as described by Shamir above may well limit resistance, but opens up education also as a site of possibility; while we are embedded and implicated (and may well benefit from aspects of it), its very instability and contrary nature may offer opportunities to take 'lines of flight' (Deleuze, 1987), that is, momentary deviations from curriculum delivery as usual. On-line and fractional working practices, whilst also beset with their own pressures and paradoxes, offer the opportunity for teachers to act rhizomatically and nomadically, coming together in temporary project gatherings or 'constellations of practice' (Mycroft and Sidebottom, 2018) or simply taking the opportunity to teach in new ways that sit outside of formal, hierarchical systems. It can be suggested that enacting micro-transformations in pedagogy helps educators take an affirmative standpoint, employing the non-hierarchical and productive 'potentia' power rather than the organisational power-as-usual 'potestas' (Braidotti, 2013),

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overcoming 'places of pain' and seeking agency where it can be found. A posthuman approach offers a way in which to work within the constraints of the neo-liberal system in order to establish educational spaces as 'sites for prefigurative practice' (Suissa, 2014, p.25) through ethical practices which include:

The principle of non-profit; emphasis on the collective; acceptance of relationality and of viral contaminations; concerted efforts at experimenting with and actualizing virtual options; and a new link between theory and practice, including a central role for creativity (Braidotti, 2016, p.26).

By acting in ways that are driven by multiplicity and collaboration, it may be the case that a positive impact on the teachers' own resilience and well-being is being felt.

This study will explore the practice of a number of educators who form part of this phenomenon, working differently to teach in unexpected and oppositional ways to enact a 'posthuman curriculum', both worthy of, and appropriate for our precarious times. Braidotti (2017) suggests that we need new language for describing this rapidly changing and complex world in which neologisms most typically emanate from neo-liberal corporatisation and marketing. This project therefore will create space for 'pause in order to reach beyond' (Patel, 2016, p.88) and through a series of dialogues and creative, emergent projects (this study in itself operating rhizomatically) theorise and offer new language to practises that deconstruct and reframe the notion of curriculum for a posthuman future.

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## 1.2 The need for a posthuman framework

The various and connected crises discussed previously suggest a need for new education practices which go beyond the additions of further knowledge and content. Taylor, for example (in Malone et al, 2017) calls for a 'Common World' curriculum, which re-situates human relationships with the natural environment so that nature is not positioned as a romantic ideal or other, but is messy, integrated and located. Such a curriculum accepts that we are always already entangled with the world and integrates pedagogical practices that allow for shared explorations and recognitions of mutual dependence.

In addition to re-framing the human/nature relationship, new educational practices are needed that position difference as generative rather than as deficit, in order to elevate the missing voices of those considered non-normative throughout history.

Posthumanism, in its bringing together of post-anthropocentrism and a desire to move beyond humanism, allows for a convergence of these ideas. This study therefore leads off from Braidotti's (2013, p.1) statement: 'Not all of us can say, with any degree of certainty, that we have always been human, or that we are only that...' This challenge to the deeply engrained legacy of humanism strikes at the heart of our current predicament; that the refusal to admit so many people to the category of 'human' has resulted in the horrors of slavery, eugenics, settler colonialism and many more injustices based around an assumed view of idealised 'Man' (Wynter, in McKittrick, 2015).

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Critical posthumanist thinking is on the rise as a new way of theorising the world, and while it has had a degree of impact in the field of teaching and learning theory, its influence on front-line educators has been limited. As Snaza et al (2014, p.40) state, 'Posthumanist discourse, which has been sending shockwaves through the humanities and social sciences, has yet to make its presence felt in educational studies, despite some notable attempts to gain traction.' And whilst Deleuzian concepts have been put to work in research qualitative enquiry and educational philosophy (Strom, 2018, Taylor, 2016, Mazzei and Jackson , 2012, St Pierre, 2004, Ringrose, 2019 and others), we have yet to see inroads made in theorising pedagogical practice.

Through participative, reflexive and democratic means (via an online discussion/reflection space and a collaborative digital art project) this project attempts to give words to new practices in order to both 'conscientize' (Freire, 1980) and consolidate. In doing this it is hoped to contribute much needed 'newness' to the field of curriculum studies – grounded, as much of it still is, in the traditions of the educational 'canon' of master narratives about learning and teaching, featuring mainly white, Western and male thinkers. Even critical pedagogical approaches, whilst sharing the aims of social justice with posthumanism, generally situate themselves '...within the confines of anthropomorphism' (Braidotti, in Bozalek et al, 2018, p.xxiii). As the wicked, complex problems of environmental degradation, climate change, and species extinction become ever more pressing, a more radical shift to a 'worlding' and 'ecologising' education is needed.

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Posthuman teaching practices may be described in various ways; as anti-fascist, postcritical, decolonialising, democratic, nomadic, wilding, and experimental. In some cases, the educators themselves may not have attempted to redefine or theorise their ways of being or what makes them different. This study therefore uses posthuman thinking as a navigational tool, drawing on the work of writers such as Braidotti, 2013; Deleuze and Guattari, 1987; Patel, 2016; Pederson, 2010; Strom, 2017; and Taylor, 2016, to problematize dualist and linear notions of 'progressive' versus 'traditional' curriculum and move towards a new idea of a 'posthuman' approach to curriculum. The gap around the application of critical posthumanism, and emerging pedagogical approaches will be explored further in the Cartography.

By breaking with ideals that centre the human (and by troubling what kind of humans have been centred at the expense of others), posthumanism offers new ecologies of belonging to both each other and the wider environment (Braidotti, 2013). Our current predicament calls for a curriculum that encourages notions of kinship with non-human others; accepts complexity; and reframes our attachment to a shared world. Posthumanism can offer a much-needed affective turn towards the kind of social justice that accounts for difference; enacted through a process of de-familiarisation from the dominant vision of education.

### **1.3 Concepts of Critical Posthumanism**

Posthumanism is a much-contested term that has many different iterations and interpretations (Braidotti and Hlavajova, 2017), and it is important to clarify my

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own approach within this wide-ranging field at the outset. Francesca Ferrando (2014) suggests that posthumanism is an umbrella term which incorporates a number of variations: these include transhumanism, anti-humanism, accelerationism and metahumanism. My own usage of the term is based around posthumanism as a philosophical tool, based on a Braidottian-Spinozan-Deluegian ontological framework which is put to work to explore and apply new concepts of what it means to be human. This philosophy incorporates affirmative ethics; that is, not a passive acceptance of the world as it is, but a belief in the idea that by gaining knowledge we can transform pain into action. Braidotti's focus on nomad thinking; and cartographic processes of mapping the terrain, bring in other relevant concepts from feminism, post colonialism, gender studies and other emerging post-humanities. This brand of 'critical posthumanism' thus refutes the often-held assumption that posthumanism is 'all about robots'; although given the radical extension of technology within recent years, artificial intelligences and their ethical usage are naturally issues of key concern.

Thus, posthumanism is '...a field of enquiry and experimentation that is triggered by the convergence of post-humanism on one hand and post-anthropocentrism on the other' (Braidotti and Hlavajova, 2018, p.5). This 'brand' of posthumanism critiques the humanist ideal of 'Man' as the universal representation of the human (ibid., p.1). Using such posthuman approaches as a navigational tool requires researchers to elevate the voices of those deemed 'non-human' throughout history, accept and work with technological mediation, consider the role in our practice of non-human actors such as animals, artificial intelligences, and take account of the agency of material 'things'. Under the

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umbrella of critical posthumanism falls approaches including new materialism (Barad, 2003), 'thing theory' (Bennett, 2010), ecocriticism (Alaimo, 2016), critical feminism (Strom, 2018) and post-structuralism (Deleuze and Guattari, 1987).

Posthuman thinkers, such as those listed above, employ a range of concepts that may help educators to reframe and re-imagine their practice. The idea of the 'cosmic artisan', for example - someone who is 'determined to follow the flow of matter' (Deleuze and Guattari, 1987, p.345); an 'avant-garde without authority' (Jagodinzki, p.86), suggests the possibility of educators working creatively and across disciplines, outside formal hierarchies. The concept of assemblages and rhizomes takes this collaboration beyond the joining up of like-minded humans. In the words of Strom (2017, p.7), an assemblage is 'an aggregate of elements, both human and non-, that function collectively in a contextually unique manner to produce something (e.g. teaching practice, a situated identity).' Introducing concepts as active components for new thinking (or as 'bricks' as Massumi (1992, p.5) puts it) can help us to raise questions such as: What kind of human and non-human assemblages can be formed and enacted in the rethinking of curriculum? What might it mean for educators to work in rhizomatic ways? And how can artistic practice help frame these re-imaginings?

Posthumanism is also influenced by new materialist thinking, which promotes the agency of 'things' and the idea that 'we are all one matter.' As Fox and Alldred (in Atkinson et al, 2018) state: 'This turn emphasizes the materiality of the world and everything – social and natural – within it, and differentiates new

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materialisms from a post-structuralist focus upon texts, 'systems of thought' and 'discourses', focusing upon social production rather than social construction.' The term 'new materialism' was first coined by Rosi Braidotti (2000) and although her thinking shares common themes with Actor Network Theory (Latour, 2005), Thing Theory (Bennett, 2010) and Object-Oriented Ontology (Morton 2010, Harman 2002), her work maintains an ethical, feminist imperative based around situated knowledge and subjectivity that is embedded and embodied in the world. Feminist thinkers have taken on these ideas and enacted them in research studies which promote the agency of material items such as school uniforms, advertisements, slippers, (Wolfe and Rasmussen, 2020, Ringrose and Regehr 2020, and Taylor, 2018 respectively) and also voice (Mazzei, 2016) and noise (Dernikos 2019). The acknowledgement that we, as humans, are always partially constituted by the non-human is an important recognition which de-centres 'Man' as other material entities are brought into focus. As Morton (2010) states: 'Human means me plus my nonhuman prostheses and symbionts, such as my bacterial microbiome and my technological gadgets – an entity that cannot be determined in advance within a thin, rigid outline or rigidly demarcated from the symbiotic real.' This emphasis on matter and monism via a relational and process ontology is a central concern: '...articulating this multiply-constituted throng of becoming is a prime goal of the posthuman project.' (Marchand, in Braidotti and Hlavajova, 2018, p293).

Posthumanism is thus a final call to '...mark the end of the self-reverential arrogance of a dominant Eurocentric notion of the human, and to open up new perspectives.' (Braidotti and Hlavajova, 2018, p.3). These new perspectives are

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re-imaginings rooted in Spinozan ethics; affirmation here is not mindless optimism but the ongoing process of transforming pain into knowledge.

#### **1.4 Towards a Posthuman Curriculum**

It is useful to theorize this, but how is posthuman thinking being enacted in the everyday? What is already happening and what can we learn from educators who are already acting in ways which might be considered 'posthuman?'

This research project aims to bring these things to life through stories, diffractive reading and creative pieces, working around the hub of a Community Open Online Course (COOC); a digital not-for-profit learning space which anyone in education can use to create opportunities for personal and group development. These will lead to tentative conclusions of what a posthuman curriculum does and could look like.

In order to explore this, I will put to work three key concepts from Deleuze and Guattari (1987). The three concepts that have been chosen; rhizome, nomad war machine and assemblage have been selected as they offer routes into notions such as:

- Power and resistance
- Community and belonging
- Interaction with the natural world and non-human agents.

'Thinking with theory' (Mazzei and Jackson, 2012) by using philosophical concepts such as these is unusual in development work with educators. Most CPD (continual professional development), unless via Masters or other further study, involves the application of existing techniques or research findings. As

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Holme et al (2020) suggest, teacher professional development is fragmented; effectiveness differs widely, and is under-researched. Our use of the Deleuzian idea of viewing philosophy as a 'toolbox' and 'plugging in' new ideas, aims to trouble the hegemonic idea of high theory as exclusionary (Strom, 2016) and allow educators a new route into philosophical thinking. The process aims to render theory active and process-based, utilising concepts as levers for new imaginings; as Parr (2010, p.54) states: '[Concepts]...become the means by which we move beyond experience so as to be able to think anew . . . in other words, concepts must be creative or active rather than merely representative, descriptive or simplifying.'

Whether or not educators consider themselves conversant in philosophy, it is the case that their educational practice, values and preferences will be grounded in certain views of humanity, childhood, and the role of education in personal advancement. These views, often expressed via the false binary of traditional/progressive, can limit the potential of new understandings or approaches. Thus, by taking a conceptual framework and encouraging artistic re-imaginings and the creation of neologisms it is hoped that new insights will be realised.

The creation of new concepts is central in Deleuze and Guattari's (1994) work. Creating new concepts means focusing on one's philosophical problem, consequently disrupting the ideas of other philosophers, and being forever disloyal to one's favorite philosophers (Deleuze & Guattari, 1994).

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Through the interrogation and exploration of each concept, participants will put these Deleuzian ideas 'to work'. Recognising that Deleuze and Guattari establish a 'parallelism between philosophy, science and the arts' (Bignall and Braidotti, 2018, p.5) this project will act in a trans-disciplinary way, inviting participants to express their views through creative means such as sketches/doodles, photography, poetry and collage – thus allowing opportunities to engage with the stimuli and reading in diffractive ways. Using artistic expression to explore responses to the research questions may be, in itself, empowering and an act of educational agency through working in new relations with others.

My role as researcher here is thus similar to that of the 'pedagogista': 'one who 'co-exists with and dwells in questions' (Vintimilla, 2018, p.22) and defamiliarises spaces for inquiry. This concept, drawn from the anti-fascist practice of Reggio Emilia schools, moves the researcher from impartial observer to facilitator and provocateur; setting the stage for philosophical thinking.

Although I have selected three Deleuzian concepts to work with initially, it should be noted that the ongoing participative project may well go on to utilise other philosophical motifs as a springboard for further thinking. 'Cosmic Artisan', planes of immanence, and Bodies without Organs are just a few other Deleuzian concepts which participants may wish to put to work in later phases of the project space. For scale and practicality, this research is taking an 'agential cut' (Barad, 2007) at a 'pause point' after exploring these concepts over a period of four months.

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I will now go on to explore more fully each concept in turn.

### **1.4.1 Rhizome**

In botanical terms, a rhizome is a kind of plant that has no fixed root systems, but a complex network of nodes, shoots and tendrils which span a wide area. Examples include bamboo, couch grass, ferns and the humble buttercup (rhizomes are often known as 'weeds'). Such plants are difficult to contain and if pulled up in one place, will often reappear in another.

Deleuze and Guattari have given 'rhizome' a distinct meaning in philosophy, suggesting that many systems in the world are also rhizomic. They suggest that generally we are led to understand what constitutes knowledge through arboreal metaphors – roots and branches, and linear processes of growth and development. This binary thinking is unrepresentative of how the world actually works:

One becomes two: whenever we encounter this formula, even stated strategically by Mao or understood in the most 'dialectical' way possible, what we have before us is the most classical and well reflected, oldest, and weariest kind of thought. Nature doesn't work that way: in nature, roots are taproots with a more multiple, lateral, and circular system of ramification, rather than a dichotomous one. Thought lags behind nature (Deleuze & Guattari, 1987, p. 5).

Taking the concept of the rhizome avoids binary thinking, as anything can be connected to any other thing at any point. Separations, such as those educational silos between subject demarcations, or within schooling systems

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that organise children on factory lines, are artificial as the world does not exist of separate, isolated objects. Realising that we are all connected, and part of multiplicities requires us to acknowledge complexity within our learning systems, as in our ecological habitats.

One contemporary example of this is the social media network Twitter, which connects disparate individuals together, sometimes seemingly randomly, but often productively. This rhizomic connection may be invisible and hard to trace, or at times crystallise via physical manifestations (see #BrewEd, #WomenEd and other educational or activist movements). These connections operate outside of formal hierarchies and organisational spaces - if only for a short time. Attempts to 'pull them up' may be thwarted as people resist the institutional chains that constrain them; unlikely, and chance connections may be made. A surprising symbiosis may be formed, as those on different sides of the educational fence come together. The 'earth' around us in the Twittersphere may be fertile and provide good conditions for growth, or at other times prove toxic and kill off attempts at solidarity. To learn in spaces like this means that there is no planned curriculum – in words of Cormier (2008, para.13), 'the community is the curriculum'. Individuals may forge individual learning pathways as they seek out and formulate new knowledge; but the process relies on relationality and the multiplicities of others within the same space.

Exploring education through the concept of rhizomes can help a move away from binary thinking inherent in many educational spaces. The false dichotomies of traditional/progressive styles of educating, division of learners

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by age, split of curriculum into discrete subjects and the divide between student/teacher can be re-examined when viewed in terms of multiplicities and networks and provide opportunities to see learning in a different way – through connections rather than separations. As Strom and Martin (2016, p.6) state:

The language of rhizomatics breaks with fundamental notions of positivism, providing a vocabulary of multiples, fluidity, flux, expansion, and difference. Because of these characteristic foci, rhizomatics is concerned with processes over states—becoming over being—because, if the world indeed is always changing from one moment to the next, in a constant state of transformation (or becoming), studying what is would be a fruitless endeavor. By the time one has decided what it is, it would have become something else. Rather, rhizomatics focuses on questions that ask about context, function, and production. How does it work? How does it work for you? What does it function with? What does it produce? What different thoughts does it produce or enable you to think?

Rather than posing questions focusing on meaning, an inquiry centred around *process* will thus form the basis of this project; in this way the research itself will operate rhizomatically. Cormier (2008, para.19) suggests that the learning community is ‘...spontaneously shaping, constructing, and reconstructing itself and the subject of its learning in the same way that the rhizome responds to changing environmental conditions.’

#### **1.4.2 Nomad War Machine**

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Nomadic in this sense means somehow living outside of the current state of affairs. Whilst accepting our embedded, embodied nature, Nomad War Machines (NWMs) are mobile agents who operate in 'smooth' non-hierarchical spaces, not the 'striated' zones of the state, where moves are regulated and bureaucratised. NWMs traverse the boundaries and borders which might constrain them; in this instance, the state apparatus of the education system. 'War' in this sense is not literal, but describes the various actions taken to incite change, which may be processes of defamiliarization, disruption, or the proliferation and sharing of ideas across organisations (instead of stabilising them). In this productive way NWMs connect often disparate things together: 'The life of the nomad is an intermezzo' (Deleuze and Guattari, 1987, p.443). To be nomadic then, is to detach oneself from the kind of thinking that prioritises loyalty to the organisation above loyalty to the self and others. It is a practice that is about movement rather than stagnation and results in the creation of 'constellations of practice' (Mycroft and Sidebottom, 2018); emergent gatherings of people with shared values who group themselves around a project or idea, often for a limited time. Embodying the maxim 'The work is the organisation; the organisation is not the work' (Braidotti, 2016) is counter-cultural within neo-liberal systems of labour, and encourages educators to work across physical and disciplinary silos and boundaries beyond the schooling 'order machine' (Kresjler, 2016).

### **1.4.3 Assemblage**

Deleuze defines assemblage as '...a multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them,

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across ages, sexes and reigns – different natures’ (Deleuze and Parnet, 1987, p.69). In this sense, we will explore not just the human agents within educational groupings but the non-human, material and technological agents that influence teacherly activity. Starting from the assumption that educational experiences are not simply about the actions of teachers and students invites new possibilities and understandings. In order to explore this concept, participants will choose/consider objects or phenomena that intra-act with their teaching practice and elevate them to consciousness, thus realising the ‘thinginess of things’ (Bennett, 2010). This will bring into focus the material agents in classrooms, or ‘trouble’ learning spaces by exploring where the ‘learning’ happens.

As Clarke and Parsons (2013, p.40) suggest, as researchers we can use the notion of assemblage to notice together intra-actions that may have been previously overlooked: ‘Elements that seem less likely to provide opportunities for research insight aren’t immediately dismissed but remain in the purview because the researcher sees assemblages in relationship and views synthesis rather than analysis.’(Clarke and Parsons, 2013, p.40).

### **1.5 About this thesis**

This thesis is organised into four further chapters. Chapter two sets out a ‘cartography’, or a map of power relationships within education. Chapter three outlines the methodological approach taken, exploring the ethical considerations, methods and data analysis processes. Chapter four summarises key findings from the project and Chapter five discusses the

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implications and recommendations arising, with a focus on future development of the ideas proposed.

In this section I will outline the key onto-epistemological foundations which underpin this thesis.

### **1.5.1 Post-qualitative research**

St Pierre (2018, p.604) calls us to firstly 'live the theories' in order to undertake post-qualitative enquiry. 'In other words, the post qualitative researcher must live the theories (will not be able not to live them) and will, then, live in a different world enabled by a different ethico-onto-epistemology'. The research does not therefore explore the why's and how's of existing situations but '...looks "for the conditions under which something new, as yet unthought, arises" (Rajchman, 2000, p. 17, in St Pierre, 2017). In line with the rhizomatic and non-linear themes of this research, my focus will therefore be not only what is produced, but on the processes by which things (in this case, the data) are made. Arguably, Deleuzian ideas are anti-methodology - we should avoid putting 'tracings on the map' - and St Pierre's call to resist pre-existing methodologies is a pertinent one. However, we are also required to live 'in the middle of things' (St Pierre, 1997, p.176) and as such, I take a stance of affirmative ethics (Braidotti, 2019) in which we accept the need to take the small lines of flight; actively acknowledging the present (in its limited and restricting conditions) while assessing the potential for new ways of being and becoming.

### **1.5.2 Diffractive processes**

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Diffraction (as a method of process of reading/writing) has its origins in quantum physics; specifically the work of Karen Barad. It is a method neither critical (about ‘them’) or reflexive (about ‘me’) (Van de Tuin, in Braidotti and Hlavajova, 2018), but about patterns emerging when texts and artefacts are read through one another. Whereas critical and reflexive readings of texts are based around subject/object binaries, diffractive processes blur the lines by focusing on the affect arising from the conjunction of different media. For example, reading a piece of theory and then looking at a work of art may cause the writer to be affected in some way, as they gain surprising insights through the combination of the two disparate things. New ideas may be evoked and new knowledge produced. Diffraction is thus a way of being attentive to how differences get made and what the effects of the differences are (Bozalek and Zembylas, 2016). It unsettles the narrative, encourages curiosity and encounter – avoiding the quick jump to theorising or explaining.

In addition to exploring diffraction (as opposed to reflection) as a concept with participants, this thesis uses diffractive structures, including a series of ‘refrains and interludes’ written by myself and others and a set of ‘diffractive pauses’ (Murriss, 2018); memories or thought experiments initiated by our philosophical musings. This process of blending formal and informal methods provided a pause in the process; not just for myself, but for participants too. As St Pierre (2017, p.605) states:

I needed the aside to think-write, so I thought and wrote it. As I continued to write, I wrote other asides, using them as a different writing space, a breather in the long, formal text of the dissertation. In

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the space of the aside, I took risks and experimented. I wrote playfully and poetically, and, in that “free” space, I deconstructed the formal, academic text I believed I had to write even as I wrote it...I plugged one text into the other, always moving in thinking-writing.

This process also troubles the question ‘what counts as data?’ and resists the need to only count what is formally captured. As Ellingson (2017) suggests, informal reflections or conversations that inform the writing are equally vital in moving the thinking process on.

### **1.5.3 Slow ontology**

Ulmer (2017) encourages us to work with a slow ontology; slow, not in the sense of working at a more leisurely pace, but as being scholarly in a different way. This way of working to rhythms of enquiry ‘where scholars choose to live writing and research through locality, materiality and artisan craft’ (2017, p.201) disrupts usual academic paradigms which focus on speed and efficiency and prioritise outputs over creativity. Whilst often difficult to achieve within academic funding and research mechanisms, working on a PhD part-time has at times allowed me to follow the generative flows of thinking and doing created by the project activities. These have manifested in spin-off projects, writing opportunities and conversations which have deepened and furthered my thinking; in addition to this, the ‘Becoming-Manifesto for Posthuman Education’, created by participants has also been set up as a living document which continues to be added to over a year after the formal research period ended.

A slow ontology requires an openness to affective responses (Massumi, 2011) and need to be comfortable with complexity; also recognising that the rhythm

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of academia does not reflect the pace of emergence of thought in project participants.

#### **1.5.4 Research questions**

Drawing on the themes explored above, and using Deleuzian metaphors such as rhizomes, assemblages and nomads as vehicles for thinking and conceptualisation, this study therefore aims to ask the following questions:

- How does posthuman education practice manifest itself?
- What drives educators to work in ways that might be considered 'posthuman'?

#### **1.6 A note on Decolonisation and Indigenous Thought**

As Ndlovu-Gatsheni (2017, para.21) states: 'Decolonising methodology must begin with unmasking the modern world system and the global order as the broader context from which re-search and methodology are cascading and are influenced. It also means acknowledging and recognising its dirtiness'.

The following ethical questions have therefore been pivotal to the onto-epistemological shaping of this research project:

- How can I approach my thesis so that it is not an 'innocent pursuit of knowledge'?
- How will I respond to Patel's (2010) provocation for researchers: *Why me? Why this? Why now/here?*
- How can the methods I use actually reflect and augment the voices of the participants?

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- If I truly believe in democratic practice, how can my research be an act of democracy?
  - As a researcher for social justice, what steps am I actively taking to decolonise research?
  - As Bignall (2018) asks: How 'new' are these posthuman perspectives?

Zemblyas (2018) argues that, when working with posthuman ideas, a focus on decolonising must be a priority. He warns against the 'old wine in new bottles' danger of replacing humanist practice with a new form of humanism which continues to exclude and deny humanity to certain groups. Zemblyas suggests diffracting Braidotti's critical posthuman thinking through Sylvia Wynter's decolonial writings; to give '...radical possibilities for both cultivating an ethics of relational ways of being and knowing and giving priority to the task of decolonisation.' (p.255). For this reason I centre this issue as an ongoing ethical concern and take a cartographical stance (Braidotti, 2018), exposing the power relationships which have served to diminish the role and influence of non-Western thinkers and elevating those, such as Indigenous scholars, who have been significantly overlooked.

Challenging the '... long-standing deference to whiteness as intellect, capacity, and even more fundamentally, humanness' (Patel, 2010, p61) must be an ongoing project within posthuman thinking. Posthumanism's process-orientated ontology, ecological grounding, focus on species inter-connectivity and close alignment of human well-being with planetary health (Bignall and Rigney, in Braidotti and Bignall, 2019) shares much in common with Indigenous ontology and epistemology. However, this synergy is often overlooked in

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continental philosophy and remains ‘...blind to the ancient presence and contemporary force of Indigenous concepts of human being’ (ibid., p.160). For this reason I wish to acknowledge the First Nations people whose philosophies and wisdom foreground many of the theories explored in this thesis. Where I can, I aim to bring them into the conversation in order to ‘crush hierarchy... and breathe life’ (Ngũgĩ wa Thiong’o, 2017) into this piece of work.

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## Chapter 2: A Cartography of the Present

### Refrain #2

*'Earlier today I went for a walk with my dad. We were using a favourite Ordnance Survey map and as always I appreciated his forensic examinations of location and route, laughing (as we always did) about the way in which maps never quite fold back to how they were. As a map-maker he knows too, the way in which maps never quite tell the full story. The land is always changing, new markers emerging - and we know from history that a lot of licence and imagination was used in their creation. It strikes me that maps can only ever be a cut of the present; a slice of place in time that will be out of date as soon as they take physical form. Even digital mapping cannot account for all the social intra-actions with place and space that shape a lived reality of locations. What might a map look like, that accounts for the informal as well as the dominant features of a landscape? And if we apply this to literature; what if we mapped and augmented the hidden and excluded voices that never make the map, but are nonetheless ever-present?' (excerpt from research journal, August 2019).*

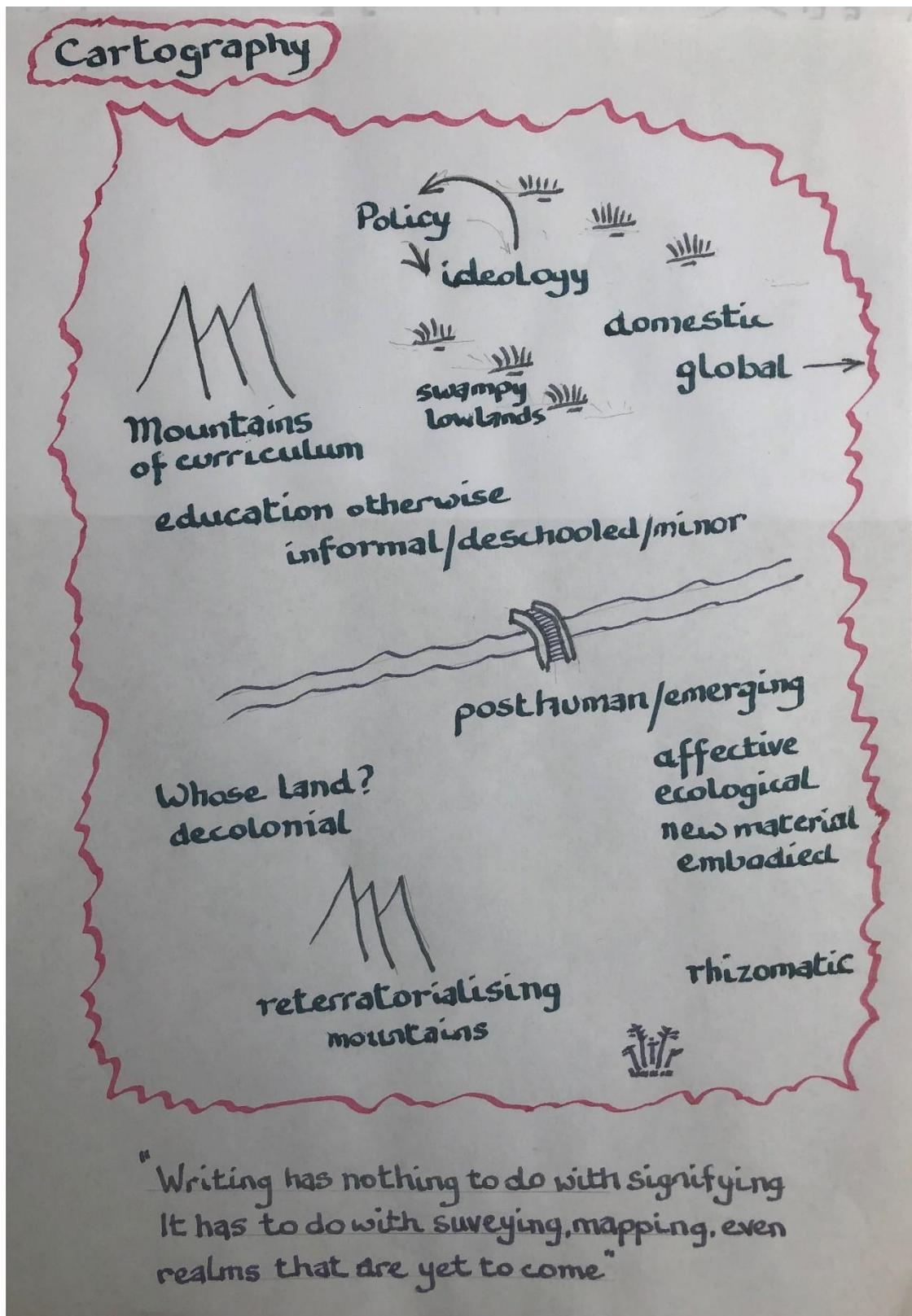


Figure 2.1: Cartography of this thesis

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## 2.1 Introduction

Braidotti suggests that we use ‘cartography’ as a process of mapping our present times. In her words ‘...a cartography is a theoretically-based and politically-informed account of the present that aims at tracking the production of knowledge and subjectivity...and to expose power both as entrapment (potestas) and as empowerment (potentia)’ (2018, p.33). In this sense, ‘...power is not only negative or confining (potestas), but also affirmative (potentia) or productive of alternative subject positions and social relations.’ (Braidotti, n.d.) A cartography that takes account of both kinds of power deviates from normative story-telling, articulating not only dominant narratives (in this case concerning education), but breaks and deviations from the status quo. In this way, a gathering of literature is productive rather than replicating; it does not attempt to put the tracing on the map but is emergent and becoming:

A map has multiple entryways, as opposed to the tracing, which always comes “back to the same”. The map has to do with performance, whereas the tracing always involves an alleged “competence” (Deleuze and Guattari, 1980, p. 5).

In keeping with this project’s underpinning mode of Spinozan affirmative ethics, this cartographic process (or ‘literature review’) will be creative in that it produces a reading that enables new thinking to emerge. As Braidotti (2018, p.34) states: ‘The aim of an adequate cartography is to bring forth alternative figurations or conceptual personae for the kind of knowing subjects currently constructed.’ In this way a living review of literature focuses not only on formalised historical accounts but stories that demonstrate emerging enactments of ‘potentia’ power,

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de-centering and deviating from 'major' narratives. Writing this review as a cartographic process also allows for the fact that new thinking is in constant flux and is imbued with political and ideological reasoning; the map cannot be neutral, but is a 'view from a body', limited not just in time and word count but by my own biases and narrative decisions. I draw here on Donna Haraway's (1988) idea of 'situated knowledge'; we need to account for our own geo-political location.

This cartography will do three things. Firstly it will explore the genealogy of posthuman curriculum - how did we get to this point of a turn from humanism, and what has shaped the dominant narrative in terms of 'potestas' and 'potentia' power? This will involve framing education in England and the positioning of teachers within formal education systems, alongside an exploration of the influence of political and scientific ideologies. It will draw on the notion of 'societies of control' (Deleuze, 1990) to explore how both teachers and students are trapped within processes of 'continuous assessment'; the incorporation and 'businessification' of education have shifted focus to the management of individuals ('dividuals') as tightly controlled data points who have little scope for escape (Marks, in Parr, 2010). The concept of 'becoming-minoritarian' (Deleuze and Guattari, 1975; Manning 2014) will also be used to examine the ways in which educator subjectivities develop both inside and outside formal systems in order to disturb and disrupt control societies via affirmative processes of difference. Secondly, I will map ideas of curriculum practice as an enactment of power and control, the emergence and trends of which reveal important manifestations of political ideology. The third cartographic element is a mapping of the emerging territory of new pedagogies which fall under the banner of

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'posthuman', bringing in approaches which range from 'affective', ecological/sustainable, new-material, embodied, and post-pandemic, amongst many others. Importantly, this cartography will also put back on the map 'pre-posthuman,' other-than-Western and Indigenous pedagogies, which risk capture by discourse of 'newness' and posthumanity (Tuck and Gaztambide-Fernandez, 2013, Bignall, 2018) as an ongoing project of settler-colonialism via curriculum.

## **2.2 Posthuman Genealogy**

A genealogy, in history terms, is the 'tracing of lineages'. Genealogies map social processes but also examine the interplay and connections between developments. In order to trace the emergence of posthuman modes of education, therefore, it is first important to trace and map previous educational traditions and their influences.

For example, as previously discussed in this thesis, traditions of Western philosophy privilege mind over body and the separation of nature/culture in a process of Cartesian dualisms; leading to manifestations of 'rational humanism' which persist in views of the (educational) world as stable and ordered, rather than complex and emerging (St Pierre, 2000, Braidotti, 2012). Alongside this, Enlightenment ideals of humanity further reinforce the dominant idea of the rational human and a certain type of human at that; white, male, able-bodied, Western (Braidotti, 2013); with the accompanying implication that any other forms of humanity are somehow 'less than'. Strom (2017) argues that this thinking has become hegemonic and 'common sense'; so ingrained within contemporary thinking that it is rarely questioned. These humanistic ideas, reinforced by

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contemporary government ideology continue to persist within the education system, manifesting via policy, curriculum, and pedagogy as I will outline below.

### **2.3 Government and Policy Landscape**

The starting point of the map is an overview of current education policy in England; this section provides a short contextual summary which focuses in particular on the influence of political power in the shaping of the (national) curriculum at key stages 3 and 4. I will draw on the thinking of Deleuze and Guattari regarding the way power is organised and distributed in order to better see the workings of education as corporation and the role of the subject who is caught within 'societies of control'; systems of never-ending monitoring, incompleteness and debt (Carlin and Wallin, 2014). At all levels of education, according to Deleuze and Guattari, '...the co-mingling of the interests of the state (via the education system) and the interests of capital is integral to the workings of power' (Tiessen, in Carlin and Wallin, 2014, p.156). It is this 'co-mingling,' resulting in education as 'economism' (Thomson, 2020) that I will attempt to map here.

Against a backdrop of austerity (policies from the 2008 recession), pressure to reduce public spending, and consistent government appeals to individual responsibility and tradition, education policy in the West has been increasingly driven by neo-liberal framings of market forces, corporations and competition (Strom and Viesca, 2020). In English education, the influence of Michael Gove (Education Secretary from 2010-2014) remains the most significant of recent times, due in part to his ideological framings of education policy (Jones, 2014). The swift introduction of academisation (encouraging schools to convert to

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academies in order to become operationally independent) helped schooling to become ‘... reinvigorated by competitive mechanisms and private sector influence.’ (ibid, p.99). This power move has manifested itself in schizophrenic ways; for example, the notion of ‘free schools’ within a system that is in fact highly controlled and regulated. Within this framing is the important discourse of equality of opportunity; based around principles of meritocracy and individual responsibility, education within Govian ideology purports to offer opportunities for betterment and liberation; attained via the means of a traditional and nationalistic knowledge-based curriculum.

### **2.3.1 Cultural Conservatism and the Knowledge Curriculum**

Knowledge, in this educational paradigm, is paramount, and operates as capital. A significant influence on Govian and later UK government policy (Gibb, 2017) is the US educationalist, E.D.Hirsch. Hirsch’s emphasis on literacy, cultural capital and knowledge (1988, 1999, 2016) has been employed alongside governmental political and social priorities to form a particular approach to curriculum content and delivery. Gove himself summed this up as an aspiration for: ‘A society in which there is a widespread understanding of the nation's past, a shared appreciation of cultural reference points, a common stock of knowledge on which all can draw and trade is a society in which we all understand each other better, one in which the ties that bind are stronger and more resilient at times of strain.’ (RSA, 2009). Hirsch recommended 5,000 items of core knowledge that all American children should be required to learn in order to attain cultural literacy (Hirsch, 1988) and a similar list of key items was produced for UK schools by

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Civitas, the right-wing think-tank. Estes, Gutman and Harrison (1988) amongst others critiqued the emphasis on knowledge retention, claiming that transmissive and instrumental approaches to education would reduce learning to ‘fragments’, which may be memorised, but are not adequately connected and understood.

The rigorous approach to knowledge accumulation has drifted from the realm of educational theory towards ideology; Hirsch himself argued later that universities, not governments should be in charge of curriculum, and that his knowledge accumulation work was only intended to be appropriate for primary-age children (TES, 2015). Nevertheless, the ‘knowledge’ curriculum, in conjunction with standardised testing, has been a mainstay of English school education since 2010 and the subsequent focus on memorisation of facts continues to significantly influence curriculum delivery at both primary and secondary levels. The homogenous nature of a ‘core’ knowledge can be seen to reflect a wider desire for sameness and uniformity; the idea that all students can achieve when given access to the same key curriculum elements. This meritocratic idea enables emphasis to be placed on individual failings when equality is not achieved, as failure can be connected to differences in work ethic, intelligence and self-efficacy and social inequalities conveniently bypassed or ignored (Sandel, 2020).

Another important and related focus for the English National Curriculum has been the UK government’s ideological concerns for shared identity and ‘Britishness’. Former Prime Minister David Cameron (in a 2009 blog post) stated that ‘We won’t get very far in promoting Britishness if people don’t have a feel for Britain’s history and heritage’; and this identity driver proved key in the rewriting of the National

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Curriculum in 2014 and the integration of 'Fundamental British Values' in schooling (Richardson, 2015). According to Yandell (2017), these 'exclusionary re-imaginings of national identity' have had a far more pervasive and significant impact on curriculum than neoliberal marketisation and standardisation. As with the knowledge curriculum, 'cultural conservatism,' via appeals to nostalgia and the liberatory idea of (certain types of) knowledge as capital, claims to be an equality of opportunity and social justice goal; by giving everyone access to knowledge and encouraging its sequential accumulation, social mobility will be possible for all. Questions of 'what' and 'whose' knowledge, however, are rarely interrogated, and linguistic superiority (stemming from ideas of dominant capital) implies deficit (rather than difference) regarding the 'community cultural wealth' (Yosso, 2006) of working class and global majority children. Frequent references to the now controversial (but widely acclaimed) study of language acquisition (Hart and Risley, 2006) introduced the pervasive concept of a 'word gap' and further emphasised teaching of vocabulary. In fact the study only researched 42 families and (following a failed replication study) was found to have inherent class and racial bias (Sperry, Sperry and Miller, 2012). This territorialisation of the concept of 'cultural capital' (Bourdieu, 1977) is a further example of how theory and research is utilised for ideological ends.

A Deleuzian reading of power in this example of 'cultural conservatism' is that school institutions have become 'power-machines' which encode and re-code ways of being 'British' and having 'knowledge'; shifting and stratifying across different disciplinary areas of school, work and the family via technology in a lifelong process of dividuation (Savat and Thompson, 2015). The prevalence of

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'flight path' end of term reports (graphs and diagrams which map an individual's progress against school data accountability measures) is one example of children becoming 'data-doubles'; machine-readable versions of the subject (Pierlejewski, 2019). At the same time, the incorporation of 'British Values'; embedded within teaching practice directs particular understandings of national identity. As Deleuze and Guattari state: 'The compulsory education machine does not communicate information; it imposes upon the child semiotic coordinates . . . we must define an abominable faculty consisting in emitting, receiving, and transmitting orderwords. Language is made not to be believed but to be obeyed, and to compel obedience' (Deleuze and Guattari, 2005, p.76). This emphasis on control is mediated by new technological capacities, as the recent pandemic revealed; during lockdown, educational order and discipline extended into homes via the 'big business' of the Oak Academy platform (a government-funded online school, which was designed around traditionalist pedagogies and the Department for Education's 'knowledge curriculum'). Following the cancellation of A Levels and GCSE exams during the same period of lockdown, another technological intervention – an exam algorithm, introduced by Ofqual with the aim of combatting grade inflation – was applied (although eventually withdrawn) to determine students' grades in lieu of examinations. Savat and Thompson (p.293) note the role of data in creating and maintaining 'education-machines': 'In a control society the datafication of life and practice as a strategy of endless governance has settled over education, bringing with it the language of efficiency, effectiveness, impact and lifelong learning.' Control in this sense permeates into all areas of life; and the machine itself, or why we continue to serve it, is rarely questioned. For Ball (2015, p.299), this performativity makes learners always open to control,

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while power itself stays invisible: ‘As neoliberal subjects we are constantly incited to invest in ourselves, work on ourselves and improve ourselves – drive up our numbers, our performance, our outputs – both in our personal lives and our work lives.’

In addition to Michael Gove, the contribution by governmental special advisor, Dominic Cummings has been significant in terms of recent manifestations of power and influence in education. His 2014 essay on ‘Odyssean’ education; a model with a strong focus on data science, statistics, problem-solving and modelling faced accusations of eugenicist bias and genetic determinism. Although refuted, the educational model proposed was considered by critics to be narrow in scope and missing an important ethical dimension: ‘...shorn of its civic humanism and democratic potential, with a reductivist bias towards mathematics and the natural sciences.’ (University of Bath, 2016). Drawing on the work of Plomin (2018) and others, arguments for intelligence as genetically determined; and privileging of certain ways of knowing and understanding the world as a single measure (IQ) Cummings’ views on education reveal the influence of eugenics, behavioural science and neuro-science in current, and possible future schooling decision-making.

### **2.3.2 Cognitive Science – Influence and Limitations**

A focus on the retention of (certain items of) knowledge as a key curriculum driver has led inevitably to further focus on the neuro-science of memory and retention. In terms of curriculum delivery, Cognitive Load Theory (CLT) has thus emerged in the past 20 years as a major influence at secondary education level. First explored in an educational context by Sweller (1988), CLT places emphasis on

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working memory and the creation of schemas for the organisation and construction of new knowledge. It has in recent years significantly influenced the design of lessons and learning resources, along with government education policy (William, 2017). CLT assumes that working memory has a limited processing capacity, that long term memory is responsible for holding large amounts of information over longer periods of time, and that people organise, understand and categorise information into constructs of information. This focus on the brain largely ignores otherwise embodied responses in the learning process, along with the role of emotions/affective states. Learning is seen and measured as an individual process and assumptions are made about motivational state and the influence of external factors/stimuli on perceived task difficulty (Feldon et al, 2019). Of course, CLT also works on the assumption that the purpose of education is the transfer of knowledge from short- to long-term memory; Ofsted's definition of learning now directly cites Sweller by stating 'If nothing has altered in long-term memory, nothing has been learned. Progress, therefore, means knowing more (including knowing how to do more) and remembering more' (Ofsted, 2019). In terms of instructional design within a test-based and linear curriculum, CLT is clearly an important and effective tool, yet this cognate psychology is based entirely on the capacity of individuals and grounded in Cartesian theory of mind - with the human subject as a rational and thinking being. It is concerned not with the 'what' of what is learnt, or the why it is learnt, but the how, and how effective that learning is in terms of retention and application. Whilst this is not necessarily a critique of CLT as a mechanism for learning, the implications of basing education around the computational and

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representative whilst leaving out emotions, motivation, body, relationality, and the impact of social systems and networks are significant (Seufert, 2018).

Behavioural psychology also plays a key role in current educational discourse, specifically as a means for obtaining discipline via 'nudge theory' (Thaler and Sunstein, 2008). This approach involves the introduction of 'small and subtle solutions (or 'nudges') which entice people to make certain types of decisions while allowing the perception of freedom of choice (Sunstein and Reisch, 2017). One example of this is the 'Accelerated Reader' programme; a learning intervention designed to increase reading speed and level via a series of quizzes and point accumulation schemes. This approach further reinforces the neo-liberal idea that competition leads to increased motivation via behaviourist systems of reinforcement and reward.

### **2.3.3 Corporatisation of Higher Education**

*Man is no longer man enclosed, but man in debt.* (Deleuze, 1992, p.6)

Universities too have undergone a neo-liberal re-organisation that has shifted the purpose to one of private enterprise, status and wealth accumulation (Naidoo and Williams, 2015). The increase of branding, growth of marketing departments and massification of Higher Education generally are just some symptoms of 'academic capitalism' (Butler et al, 2017), supported by advertising campaigns and slogans that make it very difficult to tell the institutions apart. Key drivers are the excellence frameworks for teaching and research that limit the value of education to metrics and data, rather than focusing on education in its wider sense. Forstenzer (2017) suggests that the introduction of the TEF (Teaching

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Excellence Framework) has shifted focus from the impact of academic study on social and personal outcomes and wider societal benefits to a narrow aim to serve the purposes of ‘an imagined group of employers’; thus echoing the ‘businessification’ seen in other educational contexts.

The TEF policy ‘...constitutes a dangerous narrowing of our understanding of such purposes, since the policy envisions higher education as a private good, as well as encouraging students and academics to be motivated by self-interest and self-advancement at the expense of public service and civic engagement’. (ibid, p.6). This notion of ‘academic capitalism’, with its associated branding and marketing of social justice, has a ‘territorialising’ effect on the system (Deleuze, 1987) which makes genuine education for social justice and transformation extremely challenging. Similarly, research ratings, academic rankings and the emphasis on monetising grants and funding produces high levels of pressure on staff and further instils the ethos of private enterprise. Bayley (2018, p.28) reminds us that this process is about scoring, both literally and metaphorically; it creates ‘...a mark on a body...identifying it out from a host of phenomena within which it is part of a whole entanglement of factors.’ Disentangling phenomena in this way attempts to make the world knowable and manageable; splitting forces into metrics which are in fact continually intra-acting and co-producing. The measurement then becomes the work; to the extent that the work may indeed be defined and determined by the measures. In the words of Braidotti (2018, p.26), the university is reduced to ‘...the status of a firm manufacturing knowledge products’; where the systems put in place to assess the quality and impact of said products have ended up significantly influencing the design and direction of the

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work. Within such a system, academic staff are facing a 'new brutalism' that forces them to gain points and ratings to prove their worth, while often precariously employed (Merranze, 2014, Collini, 2012).

A further challenge to universities in terms of power is the metric relating to graduate outcomes; emphasis on employability and attaining certain kinds of jobs has led to a strong vocational focus and the instrumentalising of certain key skills 'for work'. The Humanities in particular have been singled out for criticism; right-wing hostility to 'low value' courses (for working class students at least) is currently exemplified in proposals to defund such degrees, with the government currently exploring new pricing mechanisms that would reduce the cost for STEM subjects and increase fees for arts and humanities tuition. Against this backdrop there is a growing discourse of distrust of 'experts' and anti-intellectualism in the form of 'unreflective instrumentalism,' (Claussen, 2004); the belief that any knowledge not associated with status and material value is pointless. This valorisation of certain types of knowledge is aligned to the exclusion of Indigenous voices, scholars of colour and queer theorists; contributions on subjects of race, gender and other 'minoritarian' topics are often limited and minimised, accused of being 'non-academic' or 'concerned with identity politics' (Tuck and Fernandez, 2013).

#### **2.4 Curriculum on the map: where there be dragons**

The mapping of educational power relations thus far has demonstrated the key role of governmental (and individual ministerial) ideology within UK education at all levels in regards to the shaping of curriculum and pedagogy. In this section I

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will explore further 'curriculum' as a humanist concept before setting out the current field of posthuman interpretations and alternative framings.

'Major' curriculum theory is humanist practice; on our 'map' it would feature historically as almost entirely centred around the human - and certain types of human at that (Braidotti, 2018). The 'canon' of curriculum theorists including Dewey (1902), Stenhouse (1975), Ball (1987), Apple (1993), and Kelly (1999) are stalwarts of teacher-education curriculums in the UK, yet trouble notions of inclusivity and difference due to their heterogeneous nature (white, Western men) and the questionable longevity of their ideas in a complex and rapidly changing world.

There are many different interpretations of curriculum; from the overall idea of a course (leading from Latin 'currere: to run') and course components or subjects, to the entirety of learning experiences that a student is involved in. Either way, 'curriculum' suggests pre-determined intent for the development of human subjects; this is learning that has been identified, planned and designed in some way (Smith, 2000). It therefore includes the 'how' of curriculum delivery also, as well as the unintended, subversive or hidden elements of learning; curriculum design renders pedagogy inextricably connected to content. Discussions of curricula often fall into false binary and oppositional positions, for example skills versus knowledge, traditional versus progressive, child-centred v adult-oriented, hard versus soft skills. These 'defensive positions' (Tedersco, Operti and Amadio, 2014) are taken up by those within the system, faced with a struggle for autonomy as standardized testing, de-professionalisation and managerialism remove agency and teacher is reduced to technician.

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The traditional field has long been concerned with curriculum frameworks, concepts, and ideas of 'what works' within a formal schooling system (Tyler, 1940). Curriculum practice is therefore often '...a technological and rationalistic undertaking' (Deng, 2018) centred around purpose and design. In recent years, approaches to curriculum theory have included identitarian and standpoint perspectives, as well as specific readings through political, social, racial, gendered and decolonial lenses. Pinar (1993, 2003, 2004) and others led a shift to the 'currere' in terms of curriculum, where the emphasis is placed on process and emergence. Different theoretical tools continue to be applied to further understanding, resulting in a '...multidiscursive academic effort to understand curriculum: historically, politically, racially, autobiographically or biographically, aesthetically, theologically, institutionally and internationally, as well as in terms of gender, phenomenology, postmodernism, and poststructuralism' (Pinar, 2008, p.522). There are many ways to read curriculum and the field is undoubtedly complex.

Contemporary curriculum theory frequently problematises issues regarding what and whose knowledge is most valuable. Michael Apple's questions provide a call to remember the 'missing voices' in curriculum design:

Whose knowledge is this? How did it become 'official'? What is the relationship between this knowledge and how it is organized and taught and who has cultural, social and economic capital in this society? Who benefits from these definitions of legitimate knowledge and who does not? (2018, p.63)

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These questions of power and exclusion are echoed in the ongoing contemporary project of curriculum decolonisation, exemplified in the 'Why is My Curriculum White?' project instigated by NUS Black Students in 2015.

Whilst the emphasis on much curriculum study is on cognitive processes, Pinar (2011) re-emphasises the role of emotion in how curriculum is enacted; it is not merely a technical enterprise but one in which subjectivity and socialisation is co-constructed: 'Juxtaposing facts and lived experience in creative tensionality... can trigger transformation.' (p.7). Curriculum is necessarily structured by temporality; it matters who said what, and when in terms of what is learnt and how it is remembered. In this way, educators are called to pay attention to the ways in which time mediates learning and understanding.

#### **2.4.1 Curriculum models**

Smith (2000) provides helpful categorisations of curriculum as transmission, product, process and praxis. Transmission here is the 'knowledge curriculum' as discussed previously; the 'best that has been thought and said', where concern lies mainly with content and the assessment of said knowledge accumulation. In addition to the reductivist arguments, Young (2008) points out the government's failure to determine the difference between theoretical knowledge and everyday knowledge; the kind that is most useful for normal life. As Priestley and Biesta suggest: '...the argument here is that this model is driven by a narrow instrumentalism based upon economic imperatives - in other words, soft skills required by the workplace rather than the sorts of 'powerful knowledge' required to critically engage with the world. Biesta's (2010) idea of 'learnification' highlights the way in which technocratic learning processes are accepted without question;

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in a transmission curriculum at no point is the question of the 'purpose' of education explored.

A curriculum based around *product* emphasises outcomes; these are often tightly scripted and assessed, have fixed objectives and are closely aligned to test criteria; learning is about plans and intentions (Neary, 2003). Curriculum as product relates to a positioning of student as consumer; different products have different value, and learning is seen in economic terms.

Moves towards curriculum as *process* (Stenhouse, 1975, Kelly, 1999) shifts the focus to students as active agents within the learning experience, emphasising the social nature of education and the knowledge already held by individuals and communities. This idea is extended in Lave and Wenger's notion of 'Communities of Practice' (Wenger, 1998, p.3) where the authors stipulate that learning should be embedded in aspects of life outside the school, not seen as a discreet and bounded process. In understanding curriculum as process, learning is a social phenomenon and a rhizomatic, serendipitous and unpredictable means of knowledge distribution and co-construction. For Cormier, digital mediation via social networking means that the community *is* the curriculum;

Suggesting that a distributed negotiation of knowledge can allow a community of people to legitimize the work they are doing among themselves and for each member of the group, the rhizomatic model dispenses with the need for external validation of knowledge, either by an expert or by a constructed curriculum....If a given bit of information is recognized as useful to the community or proves itself able to do

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something, it can be counted as knowledge. The community, then, has the power to create knowledge within a given context and leave that knowledge as a new node connected to the rest of the network (2008, para. 17).

Rhizomatic learning, with its emphasis on relationality, complexity and emerging knowledges provides a way to see education as connection rather than separation. It poses important questions about how power in the learning process is held, and by whom, and also takes account of technology (often seen as a passive agent in learning discourse). The current situation of global pandemic is challenging learning as a bounded activity; students learning via the Internet during lockdown, adults creating online learning opportunities, and the growth of online community networks for mutual aid all point to challenges for traditional curriculum approaches.

#### **2.4.2 Critical pedagogy: Curriculum as praxis**

Given the emphasis on transmission, acquisition of knowledge and regurgitation in the UK current school and college curricula, the role of critical pedagogy as espoused by Freire, hooks, Giroux, Schor and others has long offered a counter-argument based around liberatory action and conscientization. Grundy (1987) conceptualised curriculum as praxis; whereby learning is orientated towards liberation from oppression. Key features of a praxis curriculum include; an emphasis on dialogue and the co-construction of knowledge; an acknowledgment that education is political; a focus on action for social change; and the recognition that students have vast amounts of community cultural wealth to bring to the educational table. Critical pedagogy shares many commonalities

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with posthuman education (Braidotti, 2018), such as desire for social justice, an emphasis on situated and localised knowledges, and praxis as the transformation of reflection into movements for social change. However, it is arguably rooted in negative oppositional tenets of Hegelian-Marxist thinking; critique as negation, and a focus on oppression and struggle rather than affirmative action (Zembylas, 2020, Hodgson et al, 2017).

Hodgson, Vlieghe, and Zamojski's (2018) notion of 'post-critical pedagogy' can be valuable here in making the shift from critical pedagogy as combative; one which is rooted in '...reaffirming one's own superior position, and thus to reinstalling a regime of inequality' (2017, p.18) – to pedagogical approaches that cultivate an affirmative attitude to what is 'good' in the 'here and now.' Rather than drawing on negative passions, post-critical pedagogy recognises that educators are always already embedded in systems and need affirmative action in order to shift the status quo. This emphasis on care and 'love for the world' establishes a bridge to new ways of thinking about critical education.

### **2.4.3 Hidden Curriculum**

Kelly's notion of 'hidden curriculum' (1999, 2004), drawing on the work of Jackson (1968), extends the role of peers, unplanned learning and social constructs in influencing teaching and learning. He states that: '...the curriculum is the totality of the experiences the pupil has as a result of the provision made' (2004, p.8), and whilst this focus widens education beyond the control of the teacher, it continues to centre notions of human socialisation. Neary's (2002, p.41) analogy of curriculum as restaurant (within which the menu is the syllabus, meal is the learning actually delivered) continues to establish education as human-centric

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and adds to this the important edge of student as consumer. Fisher, Fulford, McNicholas and Thompson (2010, p.103) extend the concept to the influence of the institution: 'Institutes where learning takes place transmit attitudes, values and ways of being – some of these are intended, some are not' - yet the focus remains firmly on the human agent. Taking the idea of hidden curriculum further, Snaza et al (2014, p.40) include the embodied nature of teachers and students, and the material things that make schools:

...sites that contain: networks of wire and pipe linking the buildings' architecture to the subterranean infrastructures of cities and beyond that to the swirls of the oceans and global deposits of prehistoric dead organisms waiting to be mined and refined; dead nonhuman animals on plates in cafeterias, as well as on feet, human bodies, athletic equipment, and biology dissection trays; innumerable microorganisms, weeds, and insects colonizing every nook and cranny...

This acknowledgement of schools as symbiotic and living environments speaks to an increasing sense of blurred boundaries, further emphasised by the global pandemic. This challenge to the dualistic beliefs (which have previously humans both physically and ideologically from the natural world) bring to mind Stacy Alaimo's (2016, p.17) thoughts on the home, which could equally apply to educational establishments: '...domestic space has served as the defining container for the Western "human", a bounded space, wrought by delusions of safety, fed by consumerism, and fueled by nationalist fantasies.'

#### **2.4.4 Curriculum as humanist endeavour**

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Given the ubiquitous nature of the human-centred curriculum paradigm as laid out previously, the focus within curriculum literature is often practical (dealing with pedagogical approaches), political (concerned with the educational paradigms and drivers) or social (about issues such as gender, identity or culture). Yet in focusing only on the (human) individual as ‘man of reason’, as Snaza et al (2014) and others argue; what other agents and experiences are being missed? If the curriculum is the totality, which aspects of the totality are not being acknowledged?

Moreira de Oliveira and Bastos Lopes (2016) call for a consideration of the limits of the human in the field of curriculum studies, recognising that across the spectrum of curriculum theory, education is seen as a humanistic and anthropocentric endeavour. This cartography has demonstrated how the human subject continues to be central to the story of education; and a cursory glance at the citations in this section reveals how the views of a limited range of humans (white, male, Western) dominate curriculum discourse. Questions of who (and what) is missing, and what navigational tools we can use to uncover and reveal new educational stories provides the opening in our map for a turn to posthuman thinking. In the words of Carlson (2015, p.xi) ‘The posthuman challenge...calls for forms of democratic education, curriculum and pedagogy that deconstruct the commonsense, taken-for-granted naturalness of humanism, not from an antihumanist perspective but as a movement beyond...whilst still maintaining the modernist and humanists projects of rights, justice, equity and freedom.’

## **2.5 Posthumanist practice in education – Mapping worlds to come**

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*'It is as if you cannot work with both animals and algorithms.'* (Braidotti, in Strom 2018, p.180).

Braidotti speaks of the convergence of ideas of post-humanity and post-anthropocentrism; that is, a critique of the humanist ideal of 'Man' and a de-centering of the human regarding species privilege and hierarchy. Accompanying this posthuman turn is a burst of neologisms and new practices which have been employed in an attempt to make sense of bewildering times. Posthumanism is frequently confused or conflated with trans-humanism anti-humanism, acceleration theory, and Actor-Network-Theory, but what sets it apart is a foundational focus on ethics - which are '...always already threaded through the very fabric of the world.' (Barad, in Dolphijn and Van der Tuin, 2012, p.69). As Braidotti suggests, we need to take account of all new developments that join usually siloed disciplines together, instead of continuing to separate nature and culture in old binaristic ways.

This associated notion of 'posthuman convergence' (Braidotti, 2019) is the idea that we need to think both beyond human exceptionalism *and* recognise the limits that humanism has put on who can be considered 'human.' In order to find a middle way that decentres, rather than centring humanity between the two poles, a new theoretical post-anthropocentric framework is needed; at this point posthuman education enters the landscape. Posthuman thinking in the Braidotti-Deleuze-Spinozan sense employs affirmative critique rather than dialectics; it is a practice that '..focuses more on producing possible alternatives by transforming critique into a set of embodied practices, in material and situated dimensions, for changing the world.' (Zemblyas, 2020, p.4). Rather

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than negation or reversals of current modes of educating it suggests an 'elsewhere', and it is this practice of affirmative ethics (Braidotti, 2018) that offers new, creative possibilities for resisting or re-directing the 'potestas' power of curriculum as described previously in this cartography.

Posthumanism is a heterogeneous terrain of ideas, concepts, theories, frameworks and practices (Taylor, 2016). While it is difficult to condense such a variegated field, what many of these theories share is a desire to unsettle the category of 'human', shift towards other epistemologies than Western reason, erase the dichotomies and boundaries such as those between nature and culture; and understand humans as relational beings who are intrinsically connected to both other humans and the natural world. (Taylor and Fairchild, 2020).

This world-view presents a challenge to human-centric education practices, (such as behaviourism and social constructivism), and has led to the emergence of many different approaches to education that will be mapped in more detail here. Common themes within these new forms of pedagogy and curricula are; a return to the body, an emphasis on the inter-connectedness of humans and the environment, removal of the species hierarchy that views humans as exceptional; and the promotion (and often celebration) of difference not as deficit but as a generative and productive force. Such practices include: pedagogies of bewilderment (Snaza, 2013), the wild (Jickling et al, 2018), air (Ford and Zhao, 2018), affect (Hickey-Moody, 2013), desire (Zembylas, 2007), kin and care (Haraway, 2016). Key elements of these 'turns' to affect, ecology, the material, and difference will next be considered in more detail; for reasons

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of simplicity they will be explored separately but the clear overlaps and synergies between them will become apparent.

### **2.5.1 A note on Indigenous epistemologies**

Indigenous beliefs regarding education are those most likely to be left off any kind of curriculum 'map'. As demonstrated previously in this cartography, the voices of curriculum theory are overwhelmingly white, Western and male. Tuck and Gaztambide-Fernandez (2013) suggest that curriculum theory in itself repeats patterns of settler colonialism; the embedding of recapitulation theory (where individual development mirrors development of the human species) positioned education as a civilising force, with the image of the white European representing full adult maturity. The danger of 'replacement', whereby white scholars territorialise the ideas and knowledges of non-white/non-settler is seen as ongoing practice of theft, to which curriculum scholars must be continually alert.

Whilst posthuman pedagogies generally attempt to take account of missing voices (Braidotti, 2018), posthuman theory is not immune to repeating the same colonialist patterns by overlooking and appropriating educational ideas that are actually centuries-old. One example is the First Nations concept of 'learning spirit' (Battiste, 2013) which is used to describe the presence of spiritual guides who inspire and keep us in moments of creative energy and purpose. This sense of a return to the body in the process of learning may be re-conceptualised in Western terms as 'affect', and the significance of spiritual

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moments of learning (which do not fit into hegemonic educational discourse) either over-looked or appropriated.

While there can be no one idea of Indigeneity, common features of Indigenous education are:

- Relationality
- Emphasis on narrative (storytelling)
- Experiential pedagogies
- Land-based practice
- Intergenerational and communal learning. (Antoine et al, 2018).

Wu et al (2018) explore the role of non-Western Indigenous epistemology - the southern African philosophy of Ubuntu and Taoism from the East - which often embody the kind of pedagogical and curriculum ideas promoted via posthuman and new materialist thinking (entanglement, affect, care, and distributed ways of knowing and being). Warning of appropriation and the danger that ‘...privileged scholars of the North and west swoop in, engage, and ravage non-western and non-Northern epistemological and ontological traditions – packaging them as ‘new’ and ‘cutting edge’ (2018, p.6), the authors call us to embody an ‘ethics of hesitation’ which challenges a default to hegemonic systems and knowledge hierarchies.

It is not easy to escape from the hub of Western educational tradition, as this cartography demonstrates. Moore and Nesterova (2020) suggest that new and old knowledges are brought together in a spirit of reconciliation; the Indigenous tradition of ‘two-eyed seeing’. This process - ‘Etuaptmunk’ - recognises the

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strength of multiple perspectives and the value in seeing ‘..with both eyes together in order to benefit all peoples’ (Antoine, 2018). Such curricula include an augmentation of the voices of Elders as holders of traditional knowledges, the positioning of community leaders as experts, and embracing diverse multiliteracies that include images and story-telling.

This cartography now shifts to focus on four posthuman educational and curriculum ‘turns’ (or ‘re-turns’) which share much in common with Indigenous values and beliefs. This acknowledgement is a small attempt to acknowledge ‘real-life subjects whose knowledge never made it into any of the official cartographies’ (Braidotti, 2018, p.51); further moments of hesitation and recognition will be made to bring these ideas into dialogue with each other.

### **2.5.2 The affective turn**

Within current English education practice the heightened emphasis on cognition and memory reveals the Cartesian binary design of a system that obsesses over the management of the ‘unruly’ child body, while at the same time denying that body’s agency in the learning process. Affective pedagogy brings the body back into the learning dynamic; affect here being ‘...the virtuality and materiality of the increase or decrease effected in a body’s power of acting.’ (Hickey-Moody, 2009).

Affect ‘...focuses on what a body can do and, through considerations of the intersubjective, transpersonal states of bodily being, opens an important way of thinking about institutional life’. (Taylor and Fairchild, 2020, p.14). It is not about feelings or emotions (although they may well be present), but a social force or

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intensity that registers across different bodies (which may include the non-human or material). Whilst hard to describe, most of us can relate to the sense of 'affect' in a sudden moment of shared learning, an uncomfortable atmosphere in a room, or being moved to sing with others in a crowd. Affect shifts the focus in a learning situation from the purely cognitive to the embodied; it is a 'visceral prompt which precedes conscious thought' (Massumi, 2002). A pedagogy of affect will pay attention to, and take notice of such moments which disrupt linear learning journeys and interfere with clock time; connecting with ideas of 'flow' (Csikszentmihalyi, 2009) and 'knowledge encounters' (Colebrook, in Parr, 2010, p.3) in which 'relations, potentials and powers not our own' come together to enact moments of learning.

Pedagogies of affect and embodiment have been particularly explored in Early Childhood Education whereby children are seen as being closer to the material world and there is greater acceptance of embodied responses to human and non-human agents. Bessie Dernikos (2020) turns to the role of soundscapes in the primary classroom as affective sites which re-inforce the social norms of whiteness. Whilst the excited involuntary exclamations of joy and laughter (while reading) were frowned upon and silence was continually reinforced, other noises (school bells or announcements; traffic; music outside) were not; demonstrating that certain sounds (and who is making them), matter. Dernikos also describes the way in which children related differently to a particular book when the character shared her first name; reading shifted from a collective to a group activity and the normative pedagogical ideal of silent reading was disrupted. The intra-action of sound, book and children '... [created] temporal complications and anachronistic episodes that disturb [ed] the linear time of progress.' (Eshun, in

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Dernikos, 2020, p.152). In this way, attending to ‘fleshy frequencies’ (material, embodied responses to teaching stimuli) which draw lines of flight from the status quo of normative classroom behaviour can offer new insights into the way that learning is enacted.

By tracking the intra-actions of material and embodied responses, a focus on the affective can reveal a missing part of the pedagogical jigsaw. As Snaza (in Dernikos et al, 2020, p.113) states ‘Classrooms are not just spaces where ideas are aired, shared, critiqued and debated; they are sites where affects emerge, circulate, and enter into conflict. (And this circulation far exceeds the human). Pedagogy is at least as much a matter of affect modulation as it is a question of theories, evidence, argument and genealogies.’

Snaza’s concept of ‘bewildering pedagogy’ (2013) emphasises the unknown aspects of affective education; you can never truly know what a student will bring into the classroom with them and how they will both affect and be affected by others (both human and non). A state of bewilderment requires the teacher to be sensitive to relations between humans and non-human others, and attune themselves to how affect circulates. Taylor (in Bozalek, 2018, p.94) also notes the need to notice ‘thick moments’; condensed instances in which capacities, affective flows, sensibilities and relational response-ability are enfolded in an entangled connectivity...’ These ‘thicker moments’ are seen as pedagogical events, or lines of flight which deviate from the linear paths of lesson plans, offering escape paths and opportunities which (if taken) can change the course of educational futures.

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### 2.5.3 The ecological turn

The shift to a post-anthropocentric educational paradigm suggests that we educate for and about a world that is not only ‘for us’ but one that elevates animals, plants and the wider eco-systems on which we rely. For Wallin, this is a pedagogy that teaches using ‘..the filthy lesson of symbiosis’ (Wallin, in Bozalek et al, 2020, p.69). In this trans-species paradigm the Earth becomes ‘Gaia’, a self-regulating organism within which species are interconnected and interdependent. Along similar lines, UNESCO in late 2019 instigated ‘Futures of Education: Learning to Become’; a global initiative which attempts to shape the future of the planet by addressing learning in a world of complexity, uncertainty and precarity (UNESCO, 2019). Using the language of ‘becoming’ in the strapline may not be an intentional nod to Deleuze, but nevertheless the project, which describes learning as ‘...a continual unfolding that is ongoing and life-long’ (ibid.) resonates with posthuman ideas of process, potentiality and different ways of knowing. The Common Worlds Research Collective, an interdisciplinary network of new materialist and feminist scholars, were commissioned to produce a background paper to assist in the drafting of the final report (due November 2021); containing seven visionary declarations for education, the paper begins by outlining the problems posed by educational systems that are rooted in anthropocentric thinking, and concludes with a commitment to collectivist ethics.

Other theorists draw on pedagogies of wildness, strangeness and the natural in order to ‘queer’ and trouble normative framings of teaching and learning. For Carstens (2019), ecological education becomes a ‘trickster’ pedagogy of the uncanny; in which educators must become cognisant of the agency of non-

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human others and ‘things’; ‘...being on the lookout for unexpected connections, mixing together insights from different disciplines of knowledge production...’ (p.72). By stepping out into moments of ‘strangeness’, educators and their students are de-centered and better able to empathise and ‘become-with’ the world at large. Taylor (2019) echoes this call to give up our ‘anthropocentric egocentricity’ by constructing a new ethics which includes more than the human; objects and ‘things’ as well as animals are incorporated in a ‘pedagogy of response-ability’ where constructing knowledge becomes an ongoing practice of interacting with the world.

Writing as the ‘Crex Crex Collective’ (Crex Crex being the taxonomical name for the migratory Corncrake bird) Jickling et al (2020) emphasise the urgent need to reconnect to the land, echoing Indigenous epistemologies and the age-old practices of nomadic peoples in the UK. Pedagogies of wildness here are not add-ons to a standard curriculum (as seen in current practices of outdoor play or Forest-School hour), but integrated across an interdisciplinary curriculum.

For Halberstam and Nyong’o (2018, p.453), wildness is not equivalent to nature, but speaks to the wider embrace of otherness; of the queer, the anti-colonial, the menopausal, the aged and so on; ‘what hegemonic systems has pushed to the margins’. This connection of the natural to the political is an important ethical move in posthuman education which sees us not turning away from complex environment issues but ‘staying with the trouble’ (Haraway, 2016) and responding to it.

#### **2.5.4 The turn to difference**

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Gorodetsky, Barak and Dhaan (2017), and Greorgiou (2008) write of a 'minor' education in which becoming minoritarian avoids universal, normative modes of teaching and adopts process-led practice grounded in care of individuals and elevation of different modes of being. Gorodetsky describes a process called 'Educational Edge'; a series of encounters and unforeseen dimensions, whereby the teacher moves off the central line of education in order to align themselves with students' wants and desires. They describe the practice of student teacher Eto, who utilises students' mode of language to adopt a 'minor discourse: 'Becoming part of students' world is a process of deterritorialization that subverts under the common and accepted classroom dichotomous discourse (2017, p.74). Gregorgiou (2008, p.107) suggests a relinquishing of teacher control; a process of 'finding instead of regulating, encountering instead of recognizing'. In a similar vein, Manning (2018) poses the question, 'how *else* can learning happen?' calling for a recognition of difference that doesn't call for inclusion in normative learning systems but a learning-otherwise, in which we shift the terms of power and knowledge to those at the sharp end of standardisation models; the most marginalised and oppressed.

Whilst Deleuze and Guattari only lightly touch on education in their writings (Bogue, 2004, Wallin, in Semetsky, 2013) their ideas are foundational to a turn away from learning universality to the promotion and recognition of difference and multiplicity as generational forces in educational processes. For them, difference is not a dialectical mode of contradiction but emblematic of a world in constant flux. As Stagoll (in Parr, 2010, pp.75-6) states: 'Deleuze's difference-in-itself releases difference from domination by identity and sameness...by

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destabilising our thinking, disrupting our faculties and freeing our senses from established tendencies [we] uncover the difference evident in the lived world, and realise the uniqueness of each moment and thing.’ Deleuze and Guattari thus cause us to think otherwise, as they ‘...trouble education orthodoxies, to think beyond those coded or institutionalised practices, enunciations and performances, paranoia and complexes, that infiltrate, pervade, inculcate and increasingly constitute the education surface.’ (Savat and Thompson, 2015, p.274). For Tocci (2018), the turn to the minor will always be situated and contextual; it is about ‘...illuminating some specific, particular place in time without the pretense of arch-theorizing’. (p.1312). Articulated as ‘loving experiments’, Tocci suggests that we employ these ‘new weapons’ (Deleuze, 1992) to launch new ideas into the world; these could include neologisms, social media movements, creative interventions and protests.

The turn to difference places an emphasis on the emergence of new thinking and concepts; a shift from the reproduction of existing educational tropes to learning as the creation of concepts and ideas. Thought becomes a ‘...provocation arising from an encounter with difference’ (Moss, 2019.p.110); where hegemonic thought and formal/traditional education models persist, there are still opportunities presented through ‘lines of flight’ (deviation paths taken from the usual course of learning). In this way, thought becomes an experiment, pushing the boundaries of the status quo into new and unexpected directions. This capacity for ‘unknown potentiality and change’ (Taguchi, 2009, p.16) allows educators to explore new territories and escape the fixed points of state curricula.

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Early childhood (ECE) theorists in particular (Fairchild, 2017; Osgood, 2016, Lenz-Taguchi, 2012) put Deleuze to work to disrupt the dominant discourse of Early Childhood Education (ECE) where predetermined standards of development present linear narratives aimed at achieving normative outcomes for all children regardless of gender, race, ability and so on. Key features of Deleuzian thought in relation to ECE are:

- the enactment of lines of flight
- a focus on assemblages of human and non-human components
- learning as rhizomatic and non-linear.

A further key element within a Deleuzian educational 'minor' turn is the elevation of art as a transformative capacity which produces '...fragments, allusions, stirrings, investigations which create affirmative injunctions.' This resonates with Maxine Greene's connection of pedagogy of the aesthetic; a hopeful, creative enterprise which counteracts the 'anaesthetic' of apathy and withdrawal (2007, p.80). As Greene states: 'Imagination may be a new way of decentering ourselves, of breaking out of the confinements of privatism and self-regard into a space where we can come face to face with others and call out, "Here we are." (1995, pp. 30-31). Experimenting, creating and re-imagining through artistic approaches (across the curriculum) allows learning communities to break with traditional modes of thinking and act as 'cosmic artisans;' creative groups of learners who '...exist at the limit, are fabulators in the sense that they actualise lines of flight, potentials that exist immanently, virtually, intensively' (Sholtz, 2015, p.36).

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Underpinned is a return to Spinozist ethics of affirmation; the organisation of 'good encounters' which enlarge the capacity of individuals to relate to others and act for positive social change. Thinking with Deleuze offers an opportunity to respond through questions such as 'does it work? What new thoughts does it make possible to think? What new emotions does it make possible to feel? What new sensations and perceptions does it open in the body?' (Massumi, 1992, p.8).

Educators 'thinking with Deleuze' also emphasise the nomadic nature of thought; a dynamic and on-going process of boundary-testing which seeks out smooth and productive space for learning. Nomadic education moves between poles of power and difference; hierarchy and rhizome, potestas and potentia power and beings and becomings (Semetsky, 2013).

### **2.5.5 The new-materialist turn**

"Neo-materialism" emerges as a method, a conceptual frame and a political stand, which refuses the linguistic paradigm, stressing instead the concrete yet complex materiality of bodies immersed in social relations of power.' (Braidotti, in Dolphijn and Van der Tuin, 2012, p.21). This focus on embodiment represents a shift away from the deconstructivist and linguistic processes of US philosophers to an emphasis on situated and located ways of knowing and being (Haraway, 1988, moss, 1985). Such perspectives encourage a view from within and an understanding that we may be complicit with the practices we resist. This emphasis on complexity requires the employment of affirmative (potentia) power to both critique and imagine new possibilities when applied to education.

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New Materialism promotes and elevates the roles of *objects* and *things*, often through the use of artistic means; examples include Renold and Ringrose's (2019) use of glass jars to explore gender issues with young people; Wolfe and Rasmussen's (2020) elevation of the role of the school dress as something that 'is and does', and the scholar-activist collective of Taylor et al (2019) using handbags to 'follow the flow of matter' to explore how bags intra-act and influence personal and scholarly lives. Objects, people (human and non-) and things come together to form 'assemblages'; '...constellations of objects, bodies, expressions, qualities, and territories that come together for varying periods of time to ideally create new ways of functioning' (Livesey, in Parr, 2005 p.18). These seemingly random groupings can act as a body to influence educational proceedings; matter not inert and inconsequential but vibrant and active (Bennett, 2010).

Within new materialism, a focus on the material includes a necessary exploration of technological mediation. From artificial intelligence, virtual reality, and Massive Open Online Courses (MOOCs) to the 'pivot to digital' in spring 2020 (when the pandemic lockdown drove educators at all levels to teach online), digital technology can alter the boundaries of curriculum and organisation due to its speed, flexibility and nomadic nature. Employing Deleuze and Guattari's (1980) concept of the rhizome within education requires us to look at the material impact of relations and networks. It suggests that all life is not only emerging and material, but connected; separations, such as those educational silos between subject demarcations, or within schooling systems that organise children on factory lines, are artificial as the world does not exist of separate, isolated objects. To learn in spaces like this means that there can be no planned curriculum;

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individuals may forge individual learning pathways as they seek out and formulate new knowledge, but the process relies on relationality and the multiplicities of others within the same space. As Cormier (2008, para.13) states:

In the rhizomatic model of learning, curriculum is not driven by predefined inputs from experts; it is constructed and negotiated in real time by the contributions of those engaged in the learning process. This community acts as the curriculum, spontaneously shaping, constructing, and reconstructing itself and the subject of its learning in the same way that the rhizome responds to changing environmental conditions.

Exploring education through the concept of rhizomes can help a move away from binary thinking inherent in many educational spaces. One contemporary example of this is the social media network Twitter, which connects disparate individuals together, sometimes seemingly randomly, but often productively. This rhizomic connection may be invisible and hard to trace, or at times crystallise via physical meetings (see #BrewEd, #WomenEd, #JoyFE and other educational or activist movements). These connections operate outside of formal hierarchies and organisational spaces; attempts to 'pull them up' may be thwarted as people resist the institutional chains that constrain them; and unlikely, and chance connections may be made.

In this way, New Materialist and other posthuman pedagogical process ontologies go beyond the disruption of hegemonic norms of curriculum delivery to also offer new ways in which to think about teaching and learning. Articulating and giving names to new education philosophies thus provides a further activist

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element of ownership and refusal at a time where we see increasing resistance to the educational status quo (Strom and Martin, 2016).

## **2.6 Conclusion**

This partial mapping of power, tradition and emerging educational alternatives has revealed the need for new concepts from which to construct contextualised and liberating cartographies. As St Pierre states:

‘...we are indeed in crisis at the beginning of the twenty-first century as the educational philosophy privileged by the federal government imposes on all who care deeply about education ‘flimsy concepts’ that are ‘too regular, petrified, and reduced to a framework ... (St Pierre 2004, p.286).

In this cartography I have mapped key lines of power within English education and demonstrated the humanistic biases of curriculum theory. Posthuman practices and enactments of curriculum offer new ways to articulate and realise learning in complex times, requiring different lenses and the relinquishing the attachment to positivist approaches that St Pierre references here. Examples include: paying attention to the role of affect and non-human agency in the management of groups and classroom spaces; shifting the focus from ‘inclusion’ to the promotion of difference; teaching ‘with’ and ‘in’ the natural world rather than about it; and shifting from utilitarian ethical frameworks to ethics of care.

What is less apparent on this map is the position and voice of the teachers themselves who are working on the frontline between static spaces of potestas

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power of curriculum and policy, and the freeing and fleeting moments of potentia. While teachers, particularly at key stages 3 and 4, may be the objects of posthuman educational inquiry (see Strom and Martin, 2017 for example) they are not often seen in the process of putting posthuman ideas to work, or experimenting with them within their own contexts. This may in part be due to the inaccessibility of the 'high-theory' of Deleuze and other post-structuralist writers, where ideas are gate-kept for the intellectual elite (Strom, 2017). Yet as Patricia Hill Collins states: 'Those of us who participate in intellectual activism must do a better job of engaging the public.' (2013, p.41), and this ethical call includes educators who may long have been disenfranchised or excluded from research and debate.

This cartography thus raises the question, what happens when educators put these posthuman theories to work, and what might motivate them to do this? And what happens when educators use these new understandings and readings of power to turn from old modes of resistance, paying heed to Deleuze and Guattari's affirmative call to action: 'There is no need to fear or to hope, but to look for new weapons'? (1995, p.78). This project's emphasis on action (and intra-action) aims to close this theory-practice gap by inviting educators to map their own power lines and put posthuman theories to work within their own curriculum contexts.

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## Chapter 3: Towards a Posthuman Methodology

### Refrain #3

*I'm having coffee with my best friend, Lesley. It's a sunny spring afternoon, and I'm appreciating the light falling across the stone levels of her patio. Her cat stretches out along the length of one wall, as much of his furry body exposed to the sun. My PhD is underway... or at least I have an idea, and a rough framework. We're talking about ways to balance academic work, personal life and my studies, and what feels like an unnatural separation between the three. How do you separate these things? I'm wondering. Just see your PhD as a way of being in the world, Lesley replies.*

*(Research Journal, August 10<sup>th</sup> 2018).*

### 3.1 Onto-epistemological considerations

*'We must learn to live in the middle of things, in the tension of conflict and confusion and possibility; and we must become adept at making do with the messiness of that condition and at finding agency within' (Adams St Pierre, 1997, p.176).*

In this chapter I will explore how research methodology can work with posthumanist thinking to enact new ways of viewing the world of teaching and learning. In doing so I will attempt to resist the pull of qualitative traditions; 'staying with the trouble' (Haraway, 2016) of researching in an era of great complexity, across time and space.

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Deleuze and Guattari's warning not to put 'tracings on the map' (1987, p.12) was a useful initial call to promote process over meaning, not replicating what has gone before or attempting to re-inscribe the education paradigms of the past. In this way, the project became an enactment of research as *event*, 'arising from interactions between participants and other forces.' (Stagoll, 2010). An ethico-onto-epistem-ological approach (Barad, 2007) insists that ethics, ontology and epistemology cannot be separated; the researcher is entangled with and forms part of a research assemblage, not standing apart or employing the 'God trick' of the omniscient and separate observer (Haraway, 1988). In this way, my reflections with Lesley that my PhD was 'a way of being in the world' not only stood for my resistance to the separation of self and identity, but a reminder of my own intra-actions and influence with participants and data. This blurring of boundaries of self and 'other' (and not only human 'others', but non-human ones too) troubles the Cartesian dualisms and Western philosophical paradigms which are written into normative research approaches, requiring instead a shift to 'response-ability' (Haraway, 1988) whereby the researcher becomes attune to relations between all agents, and the role of their own decision-making in the final story told.

As posthumanism is a navigational tool (Braidotti, 2013), and not a philosophy as such, it felt important that participants were given the opportunity to explore the concept of posthumanism *for themselves*, in their located/embodied contexts and to put it to work, both as individual subjects, and in a relational sense as a growing community of thinkers. Defining posthumanism myself at the outset would have limited the possibilities for new thinking. As Rotas and Springgay (2013) suggest, positing the conditions or terms of research before

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the exploration or experimentation, “results in stultifying its potential and relegating it to that which already fits within pre-existing schemata of knowledge.’ In this way, creating and thinking together is a productive way of forming new ideas and it is these emerging processes that drive the method, not the pre-defined linearity of ‘major’ predictable approaches (Manning, 2016). The aim, therefore, was not to use methodology to create something replicable, or a route-map for future research, but as a means of facilitating the emergence of contextual and situated knowledge, which was very much driven by the research community.

### **3.1.1 ‘Minor’ research practice**

The common meta-narratives of education, covering themes of resilience, professionalism and motivation, form well-trodden paths and elevate the generally received, normative ideas of difference and struggle which can be limiting in terms of re-imagining future possibilities and disrupting traditional models of knowledge production. This emphasis on the ‘major’ is extended through traditional modes of research that privilege dialogue and other standard approaches over creative experimentation. Putting the concept of ‘Becoming-minoritarian’ (Deleuze and Guattari, 1987) to work instead allows us other ways to perceive power and agency, focusing not on the *major* shifts that occur to alter understandings of education, but on the ‘minor gestures’ (Manning, 2016) that shuffle and subtly shift the status quo. It should be noted here that ‘minority’ does not refer to quantity, but instead refers to the oppressed and the disadvantaged; any subject or group lacking power. A research process, therefore, that allows participants to take part in a range of creative ways,

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according to identity, preference, and embracing individual difference such as neurodiversity, will allow the emergence of new ideas via 'lines of flight' (Deleuze and Guattari, 1987) which take us in different (and unanticipated) directions, not on a grand scale, but nevertheless leading to contextual social change.

For the reasons above, I chose a participatory action research (PAR) method of shared exploration, with participants who came together through a shared frustration at the current polarisations and binaries within educational discourse and a communal desire for paradigm shift. In terms of research cartography, this methodology drew on the traditions of Participant Action Research, in that it was driven by the need and desires of the community for social change, but also utilised ideas of research-creation (Springgay, 2019) and crystallisation (Ellingson, 2009) to recognise the role of the non-human in research practice (technology, pets, the environment etc) and invoke artistic and reflective processes in order to provide a holistic account of the research process.

### **3.1.2 A slow ontology**

Patel (2016) advocates allow time for 'spaces of pause' in research practice; these enable you to re-examine questions such as 'Why me? Why now? Why here?' in a spirit of researcher humility. These questions formed a key element of my research journal as part of the ongoing explication and examination of research ethics. In time bound practices of doctoral study, knowledge generation can be limited and stratified in order to make sense and 'cut the threads' of research. Drawing on Lather's ideas of research as praxis (1986) and Gramsci's idea of 'philosophy of praxis' whereby we '...arrive at a fusion, a

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making into one, of 'philosophy and politics,' of thinking and acting' (1999, p.35) this study linked discussion closely to social action and change and extended outside the time-bound framework of traditional research practice, working as a 'slow ontology.' (Ulmer, 2017). It is notable that discussions and practices have continued since the formal 'close' of the research event, and in keeping with ethics of participant autonomy, these were encouraged and supported.

I will go on to explore the role of the methods and their implications in further detail.

### **3.2 Becoming-multiplicity: Participant Action Research**

Due to the emergent nature of posthuman thinking and the requirement to make meaning together (rather than seeking 'absolute truths' (Patel, 2016)), Participant Action Research (PAR) was employed as the overarching methodological framework. PAR '...is collaborative research, education and action used to gather information to use for change on social or environmental issues. It involves people who are concerned about or affected by an issue taking a leading role in producing and using knowledge about it.' (Pain, Whitman and Milledge, 2011, p.2). This framework manifests through cycles of planning, action and reflection, which will allow for analysis of both the process and the learning. By introducing 'concepts that problematise' we therefore put ideas to work in order to bring something new into the world (Springgay and Truman, 2017).

The focus on 'participation' and 'action' is connected here to the Deleuzian idea of 'becoming'; is a political move which can be employed to trigger modes of resistance and activism. Hegemonic thought in education promotes the idea of

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individuals as separate, atomised subjects; this thinking manifests in cultures of competition, individualised management practices, and individual student assessment. For teachers, this ideology is embedded in training and continuous professional development, as educators are observed and undertake reflective practice as if they are separate units rather than an embedded and embodied part of a more complex environments. Individual lesson observations, for example, rarely acknowledge classrooms as complex adaptive systems and relationships in teaching spaces are over-simplified (O’Leary and Wood, 2016). To research together - as a group of equals - is one way of resisting dominant education and research paradigms, recognising that new knowledge can be generated collectively. ‘Becoming-multiplicity’ recognises the intra-action of thinking and making meaning as a community, via new forms of subjectivity that shift focus from the individual to the wider group. In this way thinking is no longer a personal process but a shared and distributed one; to the extent that one person’s thought or idea may not necessarily be separated from another’s. Acknowledging too, the role of non-human agents such as technology as a ‘participant’; affecting and influencing the way that thinking and interactions occur, render the participant body ‘.. a ‘milieu’; ‘chaotic and vibratory spaces of activeness that are co- and re-composed’ (Springgay and Rotas, 2019); not just human spaces but inhabited by the ‘thinginess of things’ (Bennett, 2010).

Participatory Action Research is also a method of democratising knowledge and challenging hegemonic thought and dominant discourse around a specific subject. Gaventa (1991) describes grassroots groups as controlling ‘knowledge and skills normally considered to be the monopoly of the experts’ (1991, p.124) and this study aims to enact a similar process; teachers on the frontline of

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practice reclaiming the language and associated practice of educational philosophy. As previously discussed, current narratives surrounding a 'knowledge curriculum', alongside the promotion of teaching methods informed by a narrow field of cognitive science pervade education, particularly in the UK and US; and as such this study aims to give a voice to those disenfranchised from current debates. Using a Community Open Online Course (COOC) (rather than a traditional virtual learning environment) sets up an immediate counter to the well-established binaries of teacher-student and shifts to a vision where participants are 'experts in their own lives' (and further to this, their own teaching contexts) (Biesta, 2016). By flattening the hierarchy between teacher-researcher (myself in this context) and participants, as well as elevating the status of teacher to 'philosopher of praxis' (Gramsci, 1999) PAR enabled a more equitable research framework.

The decision to use PAR as a methodology does not however suggest that community in this sense is a utopian space in which only positive actions and interactions may take place. Instead, it recognises that a 'problem with community is ... that there are too many semantically justifiable interpretations' (St Clair, 1998); as such, no one idea of community exists. Taking on board Foucault's words that call us to recognise 'the fascist inside us all' (1983, p.x.iii), reflection on the nature of power and how it manifests in online spaces formed a vital part of our work.

Moten and Harney's (2013) theories of 'undercommons' also present a challenge to the traditional modes of 'study' and where collaborative learning (or in this case, research activity) might take place. A digital learning and

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asynchronous dialogic space was selected to enable busy educators to participate in any space, and at any time which suited them. As Halberstam (in Moten and Harney, 2013, p.10) states, 'Study, a mode of thinking with others separate from the thinking that the institution requires of you, prepares us to be embedded in... "the with and for" and allows you to spend less time antagonized and antagonizing.' For a number of participants this move cut through the formal engagement usually experienced in research environments; for many, sites of participation were their homes, their gardens, and their kitchen tables. Collaboration was widened to include consideration of the non-humans which intra-acted with participant environments. As one participant stated "My bed is a site of learning. I'm laying here now in my bed. Never thought before about the bed and what's around me as "agents that shape my experience". The dog is by my side too. We are all "Vibrant matter and lively things" "following the flow of matter". (Participant citing Bennett, 2010). In this way, PAR was extended to rethink what was meant by 'participant'; reflecting consideration of other agential forces present in our thinking and communication.

### **3.3 Becoming Cosmic-Artisan: Research-Creation and Crystallisation**

An artisan, for Deleuze and Guattari, is someone who is 'determined to follow the flow of matter' (Deleuze and Guattari, 1987, p.345) where the matter, or material itself intra-acts with the creator; not as an 'out of world' experience, but very much rooted in the present one. The theorists suggest that the role of the cosmic artisan is to 'summon forth a new earth, a new people' (1994, p.99) not necessarily in a utopian sense, but by revealing possibilities already present. As Sholtz (2015, p.36) describes them, 'Cosmic Artisans exist at the limit, are

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fabulators in the sense that they actualise lines of flight, potentials that exist immanently, virtually, intensively.’

‘Becoming-cosmic artisan’ by using art and story-telling within research was not only employed for the purposes of creatively re-imagining our education situations as they are or could be, but a deliberate move to embrace the stress-reducing, therapeutic experience of creativity for educators who are working within a toxic environment. A study Kaimal et al (2016) found that cortisol levels dropped significantly during the process of making art, and whilst I was not seeking to make any similar claims for this project, given the participant demographic (front-line educators across a range of sectors) it felt opportune to take such an arts-based approach. Cosmic Artisans also work collaboratively; art in this sense being very much a shared endeavour. Taking on the ideas of remix-ing, re-making and building on each other’s ideas (through, for example, jointly created poems and stories) was also a means of shifting from the traditional notion of an individualised research subject.

The concept was introduced to participants mid-way through the project as part of discussions and reflections on what had happened so far, offering a potential lens through which to view participation and response to the project’s core concepts.

### **3.3.1 Research-Creation**

As a response to the idea of becoming cosmic-artisan and a desire to include artistic processes, the methodology drew upon ideas of Research-Creation (Manning, 2014, Springgay and Rotas, 2019). Research-creation brings together theory, research and art; it is:

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‘...an experimental practice that cannot be predicted or determined in advance. It is trans-disciplinary and is used by artists and designers who incorporate a hybrid form of artistic practice between the arts and science, or social science research; scholars attuned to the role of the arts and creativity in their own areas of expertise; and educators interested in developing curriculum and pedagogy grounded in cultural production.’ (Springgay, n.d).

Research-Creation enfold the form that it will become and in this way is onto-epistemological; in posthuman research practice method cannot be separated from process and content, as all elements are intrinsically entwined and affect each other. In keeping with the democratic nature of PAR, research-creation is also counter-hegemonic and co-creative. As Springgay and Rotas state: “Research-creation as ecologies of practice similarly unsettles notions of individual, recognition, and understanding.” (Springgay and Rotas, 2019, n.p.).

For project participants, art took a variety of different forms in accordance with personal interests and preferences. Creations included poetry, photography, sketches, crafting of various kinds, sculpture and blogging. Some art was also communal in nature; one example of this being an image prompt shared by a participant as a stimulus for a group-writing activity.

The positivist implication of data as information waiting to be found or taken shifts in Research-Creation to an emphasis on the creation of emergent processes, or event-activities (Massumi, 2011). Springgay refers to data collection as a process of ‘procedural architecture’. In this way, our items of ‘data’ (forum posts, images, poetry, photographs etc) become ‘d/artaphacts’

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(data plus artefact), events which are captured through artistic creations, via a process of shared thinking and reflection (Renold, 2015 and 2019).

### **3.3.2 Crystallisation**

This multi-modal process of Crystallisation (Ellingson, 2017) is a methodology comprising a number of methods in order to challenge the traditional idea of triangulation. It becomes a way of ‘...incorporating multiple qualitative methods that exist on a continuum from traditional qualitative inquiry on one side to artistic inquiry on the other’. This process extends the idea of triangulation and considers more the idea of uncovering multiple ways of knowing than pursuit of knowledge; as Ellingson (2009, p.6) suggests, crystallisation can ‘...build a rich and openly partial account of a phenomenon that problematizes its own construction.’ The image for the multi-directional account is the crystal, which provides a range of views and dimensions; in the case of this project, the crystal was formed via art, dialogue, reflections (mine and my participants), tweets, live chats and interviews. Using different forms of writing (poetry, conversation, story, blogs, diary entries etc) is a further diffraction of the crystal, opening additional possibilities for reading and relating to the phenomenon of posthuman education.

These readings have included ‘deep and dense description’, attention to complexity of interpretation, use of more than one form of inquiry (such as interviews, autoethnography, poetry, focus groups), and reflexivity. Despite being still partial, the aim is to produce ‘thick data’; a deeper and more complex image of processes and the way that experiences are unfolding. As Richardson (in Ellingson, 2009) suggests ‘Paradoxically, we know more and doubt what we

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know. Ingeniously, we know there is always more to know.’ Thus the method avoids claims of objectivity, and does not attempt to define ‘truth’ as it may be ‘discovered’. In this way Ellingson offers crystallization as a way of incorporating numerous qualitative methods that exist on a continuum from traditional qualitative inquiry on one side to artistic inquiry on the other. By utilising a range of approaches, multiple ways of knowing a phenomenon can be revealed.

Crystallisation is also diffractive, in that it causes new patterns to emerge. Diffraction in the scientific sense is a process by which matter (such as light or water) ‘...break[s] apart in different directions.’ (Barad, 2007). In the same way that a pebble thrown into water will cause waves to intersect and overlap due to the interference of another agent (i.e. the person doing the throwing), Barad suggests that ideas can be read through one another, creating multiple differences which are ever emerging.

To utilise crystallisation in this project, I introduced a range of different methods through which participants could engage with the research questions. In the first theme (Rhizome), they were invited to explore the concept through images (their own photos, memes, sketches, video etc) which were uploaded to a Padlet site. Later propositions included dialogue (both via live chat and a static forum), poetry and blogging. Crystallisation thus resulted in the generation of many different types of data: some of which were not anticipated by me but introduced by participants themselves. Stories, fables, memory-writing and music were also brought into discussions between participants and their artistic creations. One participant related the words from ‘The Railway Children’ to her experiences of feeling unwanted during a meeting. Another drew on the Mary

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Poppins character in order to explain her understanding of the Nomad War Machine concept. In this way, diffracting Deleuzian concepts through relatable texts and stories allowed participants to develop understandings based around their own cartographies and histories of learning.

### **3.4 Reflexive writing and diffractive pauses**

A personal research journal has been maintained as another element of crystallisation. Hesse-Biber and Piatelli suggest that self-awareness and reflexivity play a key role in determining researcher positionality and viewing projects holistically. As they state: 'Reflexivity exposes the exercise of power throughout the entire research process. It questions the authority of knowledge and opens up the possibility for negotiating knowledge claims as well as holds researchers accountable to those with whom they research.' (2007, p.495). A continual probing via critically reflexive questions (Ellingson, 2017) helped me to re-ground myself in the ethical principles I established at the outset. My journal entries often took the form of 'diffractive pauses' (Murriss, 2016); as stated previously, diffraction (as defined here) being a process of reading one medium through another. Poetry, dreams, and snatches of dialogue were included, along with more formal reflective pieces exploring moments of confusion or clarity. Paying attention to embodied responses and reactions (Ellingson, 2017) such as anxiety, sadness, joy and guilt was also important, despite the 'remote' digital nature of the project and lack of physical connection. These reflections particularly concerned my role as a member of a participative research project and the (at time) bewildering experience of navigating the blurred intersections between researcher-teacher-learner-participant.

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At some times the journal took a typical diary form; at others I extended my entries into blogs or thinkpieces. 'Think, We Must: A Call to Reclaim Spaces of Intellectual Endeavour' (Sidebottom, 2019) was one example of taking a reflective journal idea (in this instance, concerning the role of philosophy in teacher education) and opening it out for wider comment and exploration. Sharing research thinking (where appropriate) in a public space was an important component of my reflective process, as it helped to prevent my thinking becoming too introspective. Some of my own reflections were also shared with participants via a 'monthly digest' email; this communication provided an update and summary of activity in the COOC alongside some observations about how the project was unfolding.

It was notable that some participants also used blogging platforms (outside of the project) to reflect and comment on the research and their thinking and learning. This, alongside extended Twitter conversations and discussions, demonstrated the rhizomatic nature of the project and the challenge posed to usual processes of tracking and evaluating contributions.

### **3.5 Interviews**

Semi-structured interviews were conducted with participants at the end of the project, in order to offer another perspective within the crystallisation process. All participants were invited to take part and several individuals volunteered, resulting in five interviews. Although the interview structure was drawn from the second research question (and thus semi-structured), I allowed the interview to proceed in an organic way. The interviews were recorded using Zoom video-conferencing software and transcribed verbatim. They were then subjected to

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close reading which took place on multiple occasions as the thesis was produced and diffracted through the emerging analysis. The participants were encouraged to respond to and follow up their interview comments and ideas in subsequent conversations (online and face to face) which produced multiple readings of the events.

### **3.6 Digital research spaces**

In order to bring together participants from different institutions, sectors and countries, I established a central online space which could act as a hub from which the work could commence (knowing from the start that, given the rhizomatic nature of the project, it was likely that other spaces would emerge during that time). My choice for this was a COOC (Community Open Online Course); a non-institutional platform which is free to use and available to any educator. COOCs originated as a grassroots alternative to Massive Open Online Courses (MOOCs) with the explicit purpose of the ‘..amplification of participant voices and seeking of new places beyond the walls of institutions.’ (Shukie, 2019, p.2). Unlike xMOOCs (institutional) which focus on centralised networks, institutional affiliations and transmission of knowledge, COOCs are community based and often learner-led. They were originally developed by a community of educators and volunteer web developers using Moodle and Wordpress technology, and infused with ideas of critical pedagogy, Popular Education (Freire, 1968) and Gonzo Pedagogy (Bladen, 2009, para.9) in which ‘...the gonzo as lecturer-as-performer uses a variety of [artistic] techniques to liberate themselves...from oppressive, institutional hegemony and students from a dry, often un-engaging educational communication style.’ Initial courses

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were created by community groups on topics such as philosophy, poetry and social studies, and are free at the point of delivery. To date, over 200 courses have been created, and continue to be developed along the basis devised by Peter Shukie and the initial team on the basis that: 'All courses are characterised by there being no criteria for who can create courses, all courses being free of charge, and the stipulations for behaviour being covered by a code of conduct applicable to all site users.' (Shukie, 2019).

The decision to use a platform specifically designed around principles of critical pedagogy and Popular Education was deliberate, as materialist elements of posthuman thinking suggest that platform design will be intrinsically linked to, and flavour the manner in which interactions and collaborations take place. As Donna Haraway suggests 'It matters what matters we use to think other matters with; it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts, what descriptions describe descriptions, what ties tie ties. It matters what stories make worlds, what worlds make stories.' (Haraway, 2016).

Avoiding the use and support of global technology conglomerates which operate along the lines of 'platform capitalism' (Srnicsek, 2016) - where human data becomes monetized and marketized - was therefore a deliberate ethical move, although not without its limitations. It is important to note that online tools, however sources and selected are not neutral spaces; and that although using a COOC aimed for avoidance of platform capitalist practices, other factors influenced who was able to access the research from the outset, and how the project unfolded. For example, initial invitation emails were sent to potential

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participants from my Lancaster university email address but (as I later discovered), many had gone straight into Spam or Junk folders. This undoubtedly impacted on the make-up of the participant body and is just one example of how intra-actions between technology-individual, determined by algorithms, played a key role in how the research-creation process played out.

Furthermore, the COOC itself and its security settings acted as both a safeguard and a limit to rhizomatic working. For many participants, sharing and discussing research themes across their own colleague and student networks formed an intrinsic part of the PAR process. Speed and flow of ideas, along with ease of access and sharing of our creations also necessitated a cross-platform approach. For this reason, Twitter (for wider discussion), Padlet (an agreed platform chosen for the sharing of images) and personal blogging sites along with numerous digital tools determined by participants also formed part of the wider digital research assemblage. This was one example of the way in which we are embedded in the systems we try to resist; the complexities of working within digital systems which benefit and facilitate communication whilst also exploiting and profiteering from such exchanges was one of the many dilemmas discussed during the project. It is also important to note that some digital platforms may act as barriers to participation due to accessibility issues. While these tools were suitable for the participants of this study, alternative tools may need to be employed should similar projects be undertaken in the future.

### **3.7 Participants**

Educators (from any formal setting) were invited to participate via a call-out on social media in order to channel the rhizomatic nature of the project. Twitter

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was used as a key platform in regular use by teachers; figures from 2014 suggest that 4.2 million daily tweets are reported to be from educators (Hill, 2014), and given the development of the platform since that time, the figure is likely to now be significantly higher. My existing connections with Twitter movements and networks such as #BrewEd, #PrimaryRocks, #ClearThe Air #Rhizo14 and many others meant that I had a wide international pool of followers upon which to draw. In addition to this, I posted messages in the education groups on Facebook of which I was already a member. A snowball sampling approach was also employed to draw in connected thinkers who were familiar to existing participants; this was via the request to share and retweet the original recruitment message. It is important to note that, as a result of this sampling method, around half of the participants were already people I was familiar with through online interactions. With a social media profile that promotes alternative and progressive pedagogic approaches, it is likely that initial participants were already interested in my work and/or shared my educational values. The snowballing element allowed me to potentially widen this net, perhaps reducing the 'echo chamber' effect slightly through a gradual dilution of influence. Although the purposive nature of this approach was thus naturally prone to bias and generalisability (Biernacki & Waldorf, 1981), as this project was not attempting to gain 'neutrality' in participant demography (if this is indeed possible), and was not about seeking or establishing 'truth' but instead, creating *new* knowledge, I felt this to be an acceptable sampling method. My intention was to reach a population of teachers who were interested in looking at education differently, and as such the interpersonal connections afforded by social media presented possibilities for future connections and

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conversations around the topic. Taking a reflexive feminist stance (England, 1994) which embeds the researcher firmly in the field, means acknowledging that we 'what we sample makes what we find' (Browne, 2005, p.57) and as such, accepting messiness and complexity in research findings.

Given the high rate of participant drop-out in on-line projects such as MOOCs (research undertaken by Onah, Sinclair and Boyatt (2014) suggests a completion rate of only 13%), I aimed to recruit approximately 50 participants in total. Multiple entry points and key milestones were also built into the project design, to mitigate drop-out.

In actuality, fifty educators were recruited from across primary, secondary, further and higher education and also from community, recovery, alternative and informal education provision. The snowballing process (of retweeting, recommending and inviting) meant that in the event many were unfamiliar with posthuman thinking, and this led me to introduce more scaffolding around the discussions than I initially planned, as I will discuss further in this thesis. Not all participants were based in the UK; individuals also joined from the US, Canada, Australia, New Zealand and Switzerland. This project therefore became an online 'research assemblage' comprised of various agents which spanned thousands of kilometres:

Research assemblages include entanglements of researchers, researched events, and the range of relations that interplay in an inquiry; tools, technologies, theories, and the relations that produce the material capabilities of human and non-human elements (Fox & Alldred, 2017)

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In keeping with my ethics of ‘slow ontology’ I made the decision to keep participation open through the course of the project, so that flows of thinking and connection could remain open (thereby keeping the space ‘smooth’ rather than ‘striated’ (Deleuze and Guattari, 2000). Of the 50 participants who initially joined the project, 33 went on to contribute actively (and there was a great variation in levels of participation).

The ‘data encounters’ featured in this thesis comprise the creations and comments of fifteen participants; just under half the total number of members of the Community Open Online Course (the research platform), and the most active in terms of engagement and communication. It should be noted here that beyond questions relating to names, location and educational area of interest, no demographic information was collected. All names (with the exception of my own) are rhizome pseudonyms, chosen by the participants themselves:

<b>Name</b>	<b>Location</b>	<b>Educational Context</b>
Ant	UK	Further education (teacher education)
Bergamot	US	University (education)
Bluebell	UK	University (Drama)
Cherry	UK	Further/Adult education
Fern	UK	University (PE teacher education)
Ginger	US	Schools (Democratic)
Iris	UK	Schools (Arts)
Kay	UK	University (Childhood/Education)
Lily*	UK	Community education (Recovery)
Lotus*	UK	Further education (teacher education)

Mint*	UK	Arts College
Orchid	UK	University (Early Childhood)
Peony	UK	Arts College
Rose*	UK	Functional Skills
Verna	Finland	University (teacher education)

\* these participants were also interviewed as part of phase 4 of the project.

*Table 3:1: Participant Details*

The remaining 18 participants either ‘lurked’ in the research space, made smaller contributions (for example, introducing themselves, taking part in the art interventions, and affirming others’ comments), or engaged with discussions in other online locations such as Twitter. Although not directly referenced in this chapter, their contribution as ‘legitimate peripheral participants’ (Bozkurt et al, 2019) rendered them a key part of our research assemblage.

### **3.8 Ethical enactments**

Taking forward Barad’s (2007) ideas of entanglement, the researcher and the researched are related ontologically, and this understanding shaped my work in a number of ways. Firstly, as stated previously, I did not attempt the ‘God trick’ (Haraway, 1988) of attempting to sit outside the project as an impartial and disconnected observer, working on an assumption that truth is there to be discovered should I employ the most appropriate research tools.

Barad (2007) suggests that ethics cannot be separated from the ontoepistemological, and as a consequence proposes the concept of ethico-onto-epistemology. In this way, ethics do not arise from decisions made but are implicit within all aspects of a research project. Barad argues that

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‘Responsibility entails ongoing responsiveness to these entanglements.’ (2007, p. 394). For this reason I acknowledged the limitations of initial ethical agreements; and decided upon an ongoing process of negotiation of ethics with participants, in keeping with the principles of participatory action research.

This manifested itself in a number of ways. Firstly, my positionality as participant-researcher was made explicit and returned to frequently with the group during reflexive discussions, thereby entering a state of ‘ethical mindfulness’ (Warin, 2011). A key principle of my ethical stance was the acknowledgement that:

‘Interactive ethical frameworks involve encouraging full and frank discussion, negotiation, and consent with the research group from the start with regard to the aims of the research, the potential benefits and risks to all research partners...’ (University of Sheffield, n.d).

In addition to this, consideration was paid to inequalities of all kinds within the participant group. In my research journal I reflected on power (and we discussed issues of power together in a live online chat forum) alongside issues of participation. In online spaces issues of participation and engagement are complex; and it is hard to define what it means to be engaged at any point in time. I aimed to avoid the language of ‘lurking’, and instead took an affirmative approach to partial or limited participation, using Bozkurt et al (2019) notion of ‘Legitimate Peripheral Participants’ (LPPs). The emphasis on participation as vocal, written or otherwise visibly interactive is challenged by online research spaces where participation and

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engagement levels cannot be physically determined. Traditional understandings suggest that lurking is a negative activity, characterised by disengagement, disconnection and passivity. However, as one participant commented in an interview ‘...maybe because I wasn’t that active on the platform so then maybe you might think that personally I’m not contributing as much or getting as much out of it, but there was actually a lot happening in the background.’

The ‘bleeding out’ of participation into other online spaces such as Twitter and personal blogs suggested that limitations of the digital platform could constrain and alter the way that interactions took place; as a result it was important to embrace and incorporate other media in order to meet participants where they were. As Honeychurch et al (2017) suggest, one type of digital platform is unlikely to suit everyone. Elevating technology as an ‘affecting instrument’ and not assuming neutrality was therefore an ongoing ethical consideration.

In accordance with BERA (2011), partners were able to withdraw from the project at any time; and for practical reasons connected to the emergent nature of PAR, I sought consent related to different data outputs at various stages. The management of participant expectations was to be of particular concern and focus, and resulted in ongoing dialogue and exploration, both within the group and with individuals.

One particular ethical concern was to ensure that the concepts and ideas discussed both in the online forum and interviews were accessible to all, and not overly theorised. Whilst using photovoice (or other artistic

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approaches) as exploratory methods helped with this, attention was paid to the academic tone of the collaborative online spaces, research themes, and range of participants. As Strom (2017) suggests, we needed to work with the exclusionary nature of 'high theory'; '...Deleuzian concepts and their related language must be used purposefully and in ways that allow multiple entry points for readers to be able to plug into the ideas presented to create micro-transformations in thinking.' However, while it should be noted that this was not intended to be a training course in philosophy, and that my blurred role as researcher/educator restricted me from over-involvement in explanations or instruction, a number of participants decided to engage further with philosophical readings; both sharing things they had found, and requesting others to share theirs.

In a spirit of community and the method of research-creation, participants were encouraged to take the ideas into their own practice and scholarship, drawing and reflecting on the rhizomatic ideas of 'remixing' and reciprocating knowledge (LaBonte, 2016). There were a number of 'spin-offs' which resulted in the creation of additional projects, meetings, friendships and use of the software. For example, one participant from an art college decided to organise a similar project on the topic of rhizomatic learning with her own students; in her words 'hacking' the original research project and using the same tools as an education resource. Another participant (Jo, February 2019) commented on the way in which project language had moved into the lexicon of further education and employed in interactions with colleagues and students; as she stated:

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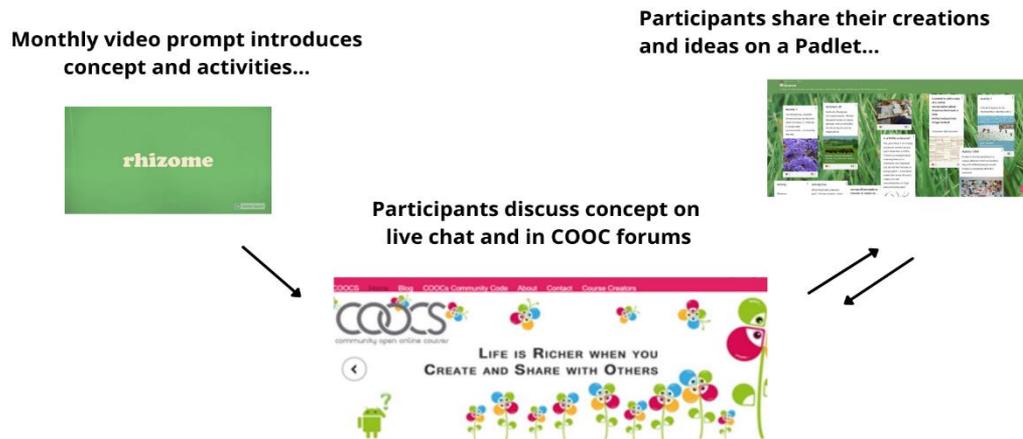
'I think you must know that the word rhizome has been heartily adopted by many! [The concept]...has given me permission to work in ways I didn't before and see value in that. Of course in BrewEdFE [a rhizomatic education movement] but other little 'side' projects and opportunities. Assemblages - that [concept] directly influenced how I got my new building and classrooms looking. I chose thinkers and their quotes for my walls and that continues. More to go up. **So students are amidst these words.**' (my emphasis).

An explicitly-stated commitment to posthuman affirmative ethics, shared and discussed at the outset of the project, maintained a focus on joy as an ethos of data engagement. As Ellingson (2020, p.13) suggests, 'joy' in this Spinozan sense is not happiness but '...a sensuous intra-action rendering data engagement a creative, ethical, risky yet enticing practice...committed to the 'enhancement of life'...' This calls for data to be treated not as passive objects, but agents to encounter-with, in order to open possibilities for new thinking and ways of being.

### **3.9 Re-imagining method**

As stated previously, the research used an online platform (a COOC (Community Online Open Course) hub), where participants (including myself) took part in discussions, art-based practice (creating d/artaphacts (Renold, 2015, 2019) such as photovoice and poetry), reflexive journals and dialogues. Whilst not a linear process, a similar pattern emerged for each month of the project. Following the introduction of stimulus material (an initial video and suggested reading), participants discussed the concept

on the COOC (in forums and a 'live' chat), posting their artistic creations on the Padlet site as and when they felt moved to share them. The following diagram gives a visual interpretation of how each month unfolded:



*Figure 3.2: Project Phase Overview*

Inspired by the work of Cormier (2008) on rhizomatic learning - where the 'community is the curriculum' - participants shaped learning and research practice together and thus 'deterritorialised' traditional spaces of research practice, instigating new 'lines of flight' that could elicit change (Deleuze and Guattari, 1987). In order to offer multiple points of entry and a wide field of participation, the collaboration extended into other online platforms (such as Twitter) via a searchable hashtag. Regular 'events' such as a regular video blog and monthly Twitter chat offered milestones at which participants could regroup and re-energise.

The initial monthly stimulus activities were designed to provoke multi-modal responses and embodied reactions to posthuman concepts and ideas, which may not have arisen through traditional qualitative means (such as

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interview questions or forum discussions). For example, participants were firstly asked to explore the Deleuzean idea of 'rhizome' by connecting with a rhizome from the natural/material world in order to draw analogies between their working practice and rhizomatic structures. The range of responses included sea lavender, mint, daisies, bluebells and water lilies, alongside material structures such as desks and crafts such as weaving. Participants chose rhizomes that affected them in some way; their choices resonated in connection to family memories, favourite places, smells and colour. This embodied response encouraged attachment to the idea as it moved from the philosophical space of high theory to something tangible and personal. In other activities, such as one focusing on the concept of Nomad War Machine, familiar stories emerged of power and agency via tales like Alice in Wonderland, Mary Poppins, and The Railway Children. Reading ideas and responses through the theory formed new patterns of crystallisation and diffraction (Haraway 2016). A full list of the reflection prompts and stimulus activities can be found at Appendix 5.

In a further move to acquire rich and thick data, responses to stimulus activities were artistic, in that participants chose to sketch, photograph, doodle, digitally draw and craft their ideas of what posthuman education is, and could be. A number of data-artefacts were then created; drawing on Renold (2015) these will be referred to as d/artaphact to reflect the way in which art is used to both critique and unveil power structures, items becoming pieces of data not only manipulated and interpreted by the researcher, but with agency in their own right. As Renold states '...arts-

based research practice can summon new forms of voicing, thinking, feeling and being to emerge.’ (2015, p.40). By encouraging playful interaction with matter and ideas, participants were able to re-imagine and re-purpose typical embedded narratives about education. In one example, when considering the role of material agents in education, we took the idea of the school corridor and the way in which students and educators interact within this space. The sketch below by participant Darren acted as a stimulus for thinking about how to work nomadically within an organisational structure:

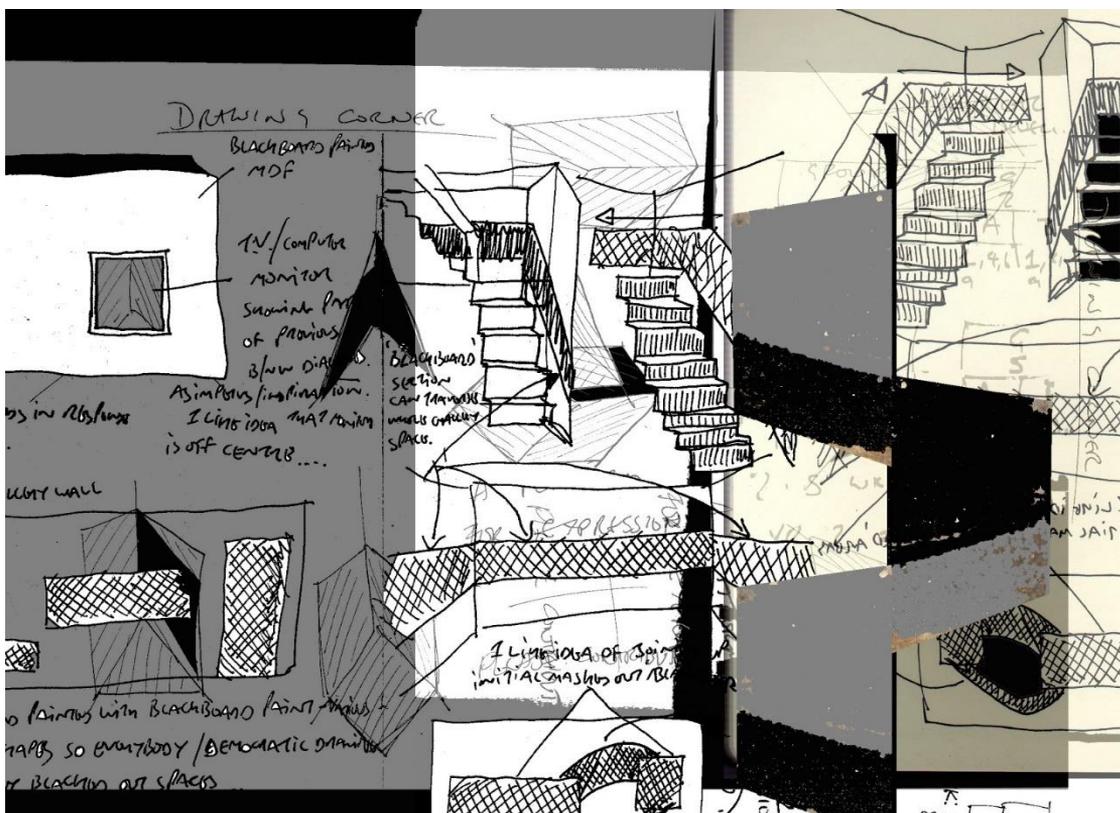


Figure 3.3: *Up, down, in, out, back to front, front to back, slippages, and tunnels*

The d/artaphact activities proposed in the COOC encouraged participants to respond to the Deleuzian concepts through written methods too. For

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example, after introducing concepts of power in relation to education, another stimulus activity invited participants to respond to the question: ‘What do working spaces of *potestas* and *potentia* feel like to you?’ One participant responded in the form of a poem, ‘Freefall’:

free  
fall  
vert  
ical

cinnamon mouth-feel.

Foil coffee sachets twist, politely  
refuse - cross the meeting room, wires, warm  
technology, dust, greetings and across

to lemons, sorrel.

The hard earth smells of apples.  
Pearmaine, May Queen, Tom Putt.  
lying in the grass, soil, eyes shut;

those skeins of conversation-

flax, flux,

Charts warp and weft  
their numbers are soft, are silk-spun

Charts map

stories so far, space-drift

free

fall

ver

*FreeFall - Mint*

As Charteris et al (2019, p.916) state ‘Poetry creates agential cuts of and in assemblages, enacting and illustrating affective intensities’. In ways that narrative responses to interview questions may not, the use of poetry by

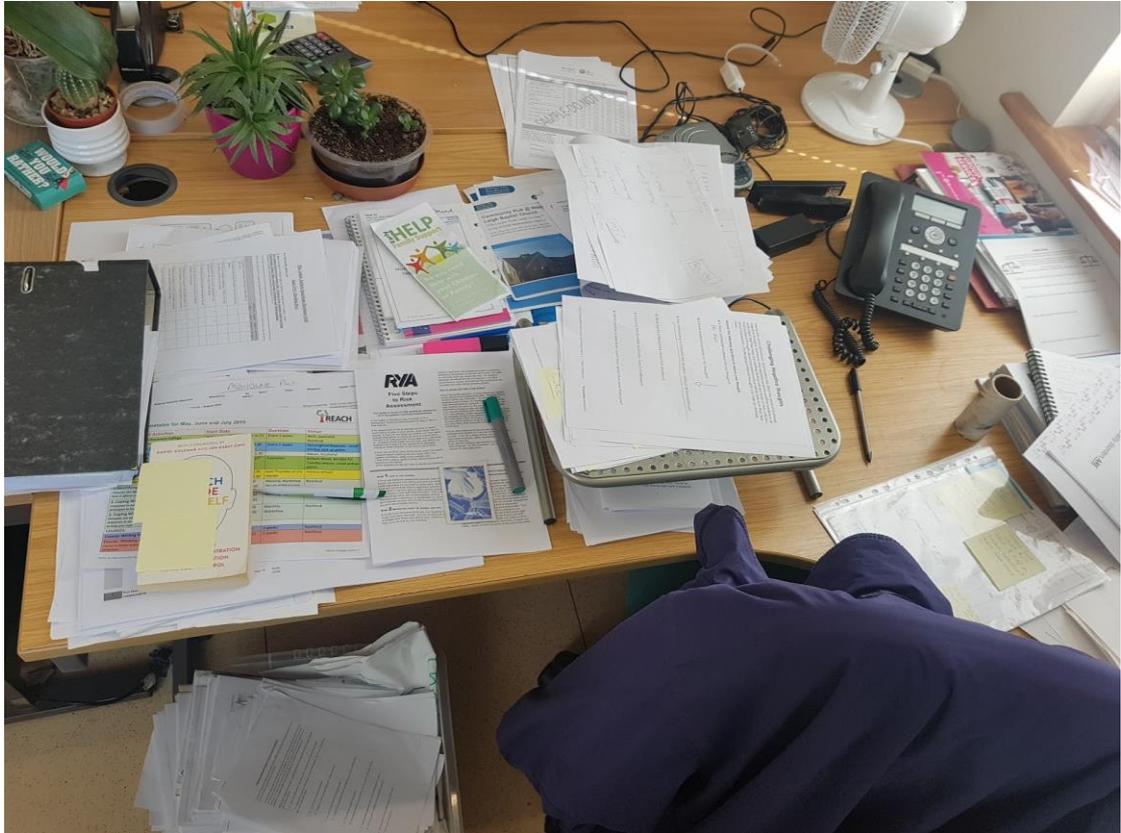
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this participant evoked an embodied response to the restrictions of work 'power' in comparison to the affective power of nature.

D/artaphacts such as this were posted by participants on 'secret' Padlet sites for ease of viewing and sharing. By collaborating on a shared digital pinboard, participants within the research assemblage were able to make connections between their creations and ideas, 'riffing' off each other's posts and forming new creations in an ongoing process of construction. (Rhizome Padlet, Nomad War Machine Padlet, Assemblage Padlet, 2019). The process of crystallisation makes use of multiple and emergent data sources in order to avoid giving primacy to one mode of representation; using a range of articulated responses allowed for multiple readings in response to one provocation. In total over one hundred d/artifacts were created and shared during the course of the project.

The artistic interventions drew on Clover and Stalker's (2007) notion of art as a process that 'breaks open a dimension to new experience.' In order to re-imagine and conceptualise curriculum in ways unlimited by language, interventions such as photography were also used to '..generate new insights into our socially constructed realities....' (Sutton-Brown, 2014, p.170). Whilst typically used as a methodological tool to engage marginalised research communities, in this context 'photovoice' was used as research-creation – as a means of giving expression which may give rise to social action. The image below created by Lily was her interpretation of the rhizome concept; as she stated 'I used to think messy desk; now I'm thinking rhizome.'



*Figure 3.4 Desk as Rhizome*

Sharing photographic images representing education practice, or ideas about curriculum also helped to redirect thinking back to the material, embodied and embedded lives of participants; in this way participants were ‘becoming-artisan’; rooted in the world whilst also projecting their ideas onto educational concepts.

Such means of creative expression aimed to engage and invigorate participants; as Taylor (2016) suggests: ‘...posthuman research is an enactment of knowing-in-being that emerges in the event of doing research itself. In opening new means to integrate thinking and doing, it offers an invitation to come as you are and to experiment, invent and create’ (p.18).

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Creating a further side to the evaluative 'crystal' (Ellingson, 2017), semi-structured interviews were also undertaken with a smaller number of participants, allowing the opportunity to follow-up and reflect in more detail on emerging findings. These lasted around 45-60 minutes and were transcribed verbatim.

### **3.10 Posthuman analysis**

Traditional modes of data analysis present a challenge to posthuman research methodology. The process of coding data (or d/artifacts, in this instance) runs counter in many ways to post-qualitative ideas presented by St Pierre and Jackson (2014), and Jackson and Mazzei (2012), who suggest that reducing data to numbers and labels causes researchers to categorise and create hierarchies of knowledge. The danger here is that existing knowledge is mirrored and replicated, and that the coding process can '...reduce complicated and conflicting voices and data to thematic "chunks" that can be interpreted free of context and circumstance.' (Jackson and Mazzei, 2012, p.viii). Further to this, MacLure suggests that coding can enact power by the researcher over the researched; as she states 'Researchers code; others get coded.' (2013, p.168). In a participatory project, this process sits uncomfortably with an ethical imperative to involve others and co-construct new knowledges together. One way to allow newness in, is, as Jackson and Mazzei suggest, to think 'with' ones data, perhaps also using it to think 'with' theory. This diffractive reading of theory through data (and vice versa) felt appropriate for a project that embeds and promotes philosophical thinking through the shared exploration of research questions.

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### 3.10.1 Analysing data

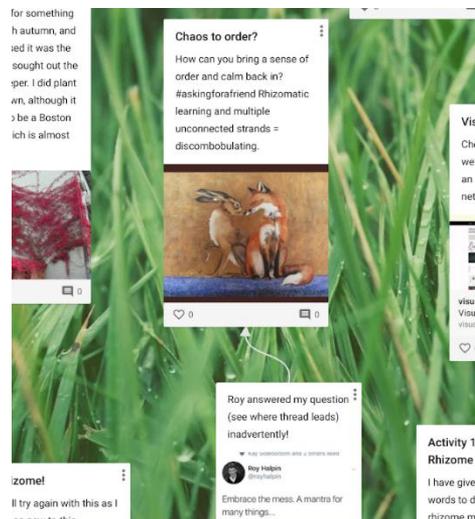
Data analysis was therefore grounded in posthuman material ontology, and thus conducted in a manner that ‘... shifts the focus of analysis from the ideas, actions and feelings of individualised subjects to the impersonal flows of affect through assemblages and the territorialisations of capacities these produce.’ (Fox and Alldred, 2014, p.409). Digital data is ‘lively’, material and contextual, and entwined with method (Ellingson, 2020). It should be noted that standard internet devices such as ‘Likes’, Comment functions, forums and chat rooms offers a form of analysis in itself, as data is continuously remixed and assembled to form meaning. Platform tools and their constraints (or enabling features) are always shaping and intra-acting with content and thus have agency in themselves; for example, the COOC space restricts communication in digital forums to threaded responses. Although participants could alter the display, the default setting - ‘Display Replies Flat; Newest First’ - intrinsically shapes the way in which participants interact with, enter and leave these digital conversations. Another default setting in the COOC software sends an automated request to new participants joining the site, asking them to introduce themselves and add a photograph. This digital request inevitably shapes any other introductory activities framed by the researcher. Many other examples like these highlight the importance of elevating technology to an agent, recognising the role of pre-configured settings and algorithms in shaping and mapping data flows.

A participatory project of research-creation also presents a challenge to the traditional research role of researcher as data-analyst. Participants make

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meaning themselves, both through the creation of artefacts (which are both data objects and ways of representing and analysing ideas), and via more direct and explicit interpretations and connections. In one example of this, participants took it upon themselves to re-arrange their posts, or connect data/phacts on the Padlet sites, using the dynamic nature of the software and embedded Connector tool to make links between their own posts. A number of key themes emerged from this shared process of exploring and noticing connections between posts; these were noted and followed up with further processes of mapping (using hand-drawn maps and the qualitative/mixed-methods software analysis tool, Dedoose).



*Figure 3.5 Using the Connector tool to link Padlet posts*

Due to the ‘complexities of the sites of action’ (Amorim and Ryan, 2005); that is, the numerous digital and spoken communication spaces, the employment of a variety of mapping tools allowed for the emergence of unexpected connections and overlaps. Using qualitative analysis software provided the opportunity to explore the items of data and d/artaphacts multimodally; as

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Ellingson (2017, p.160) states ‘...software provides an ability to revisit a moment in a multimodal way by hyperlinking documents, photos, videos, drawings, maps and other texts to create connections among elements of multiple texts, highlighting the material and embodied aspects of experience...’ In this process the various data/phacts (over 100 in total) were uploaded and then explored using the key project themes (rhizomes; nomad war machines; assemblages) along with the additional conceptual framings that had emerged during the project and participant analysis. Allowing myself to step into and back from the data in various configurations enabled me to attend to the ‘strange relations’ within data (Maclure, 2013, p.180); where attention is drawn to something that defies explanation. I then drew the threads together in the form of a series of ‘data encounters’; a coming-together of researcher and information, ‘encounter’ being used here to suggest a meeting of equals that is also a ‘cutting together-apart’ (Barad, 2014), as I use just one in a multitude of possible framings to capture events at one particular point in time. In this way I acknowledge that the picture is always partial and contingent.

### **3.10.2 Analysing interviews**

As stated previously, this more ‘traditional’ qualitative research method was used to follow-up and explore further the research question ‘*What drives educators to work in ways which may be considered ‘posthuman’?*’, with four participants who expressed an interest in such a reflective conversation. In keeping with a posthuman methodological approach, transcripts from these were analysed using a ‘thinking with theory’ method (Jackson and Mazzei, 2012) in which the researcher does not attempt to make meaning, but instead

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focuses on processes and what is being produced, reading ideas and concepts through a theoretical frame. Given that the theme of the research question was motivation, power and agency, it seemed apt to think with the Deleuzian concept of desire. As Jackson and Mazzei state, 'To think with Deleuze is to consider the forces of desire that are acting through and with our research participants, and to make sense of what results from such interaction.' (2012, p.91). A focus on the nature of productive forces, bodies and enactments of power shifts the analysis from one of lack to one of potentia; in keeping with the project's overarching ontology of affirmative ethics.

Participants were invited to reflect back on their contributions via a process of 'member checks', which aimed to demonstrate respect for their voices and allow for further exploration or validation (given that words are not static, and the very experience of taking part may have altered participants' understandings (Ellingson, 2017). A creative process such as 'found poems' (Reilly, 2013) or another expressive collaborative endeavour (in our case, a collaborative manifesto) drew the process to an affirmative close; reflecting the aesthetic and participatory nature of the project's design.

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## Chapter 4: Becoming-with Data: Rhizomes, Assemblages and Nomad War Machines

### Refrain #4

We are...  
sea lavender  
Kentucky bluegrass  
daisies and tulips  
couch grass  
turmeric  
mint  
and ants.

Bamboo and waterlilies  
crassula and rhubarb  
Virginia creeper  
Venus flytrap  
lily of the valley  
bluebells  
string figures  
and webs.

We are...  
what connects us  
fragrance and echoes  
weavers of memories  
brash and persistent  
hooking and knotting  
embracing the mess  
moving outwards and across

propagators, cartographers, seeds.

*'Our Rhizomatic Life' - collaborative poem made with participants*

### 4.1 Introduction

To call this a 'findings' chapter would do a disservice to the creations and voices of the participants. The data was not there for me to find, but instead emerged via an ongoing process of dialogue, artistic endeavour and critical reflection; through a process of research-creation. According to Springgay (n.d.) research-

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creation is ‘an event...that creates concepts that problematize’. This chapter will therefore not only report on ideas emerging from the data (which in themselves propel further thought), but keep in mind the key role of the *research process* which enabled participants to speculate and re-imagine education together. In this chapter I therefore present and weave the data/phacts generated from the project into a series of ‘data encounters’ which reveal multiple understandings and experiences in relation to my research questions.

#### **4.1.1 Structure of this chapter**

Whilst there are clearly overlaps between emerging ideas, I will use a thematic approach to structure each section, reading the data back through the Deleuzian concepts and theories which were used to initially frame the project. This ‘thinking with theory’ approach (Jackson and Mazzei, 2012) focuses on processes and what is being produced, reading ideas and concepts through a theoretical frame.

Each concept-phase in turn (Rhizome, Nomad War Machine and Assemblage) lasted for one month and the emerging ‘glow-data’ (McClure, 2010) is shared here in order to demonstrate how participants put each concept to work to respond to the research questions. Two other Deleuzian themes developed from the ensuing research-creation activities and discussions (Cosmic Artisan and Becoming-Minoritarian) and these are explored in relation to research question 2 (‘What motivates educators to work in ways which might be considered ‘post-human?’). A summary of the research project outline is provided here in order to help the reader to navigate through the phases of the project in relation to the themes and overarching research questions:

<b>Phase</b>	<b>Research question</b>	<b>Conceptual theme</b>	<b>Activities undertaken by participants</b>	<b>Additional themes emerging</b>
1 (May)	What does a posthuman curriculum look like?	Rhizome	'Selecting a rhizome' (art intervention); Live chat session; Discussion Forum. Creations shared on Padlet site.	Heritage Serendipity Curriculum Technology
2 (June)	What does a posthuman curriculum look like?	Nomad War Machine	'Identifying a NWM' (art intervention); Live chat session; Discussion Forum: Creations shared on Padlet site.	Fugacity Undercommons Power
3 (July)	What does a posthuman curriculum look like?  What motivates educators to work in ways which may be considered 'posthuman'?	Assemblage	'Teaching Spaces' (art intervention); Live chat session; Discussion Forum. Creations shared on Padlet site.	Animals Materiality Embodiment
4 (August-September/ongoing)	What does a posthuman curriculum look like?  What motivates educators to	Rhizome  Nomad War Machine  Assemblage	Creating a 'posthuman manifesto for education'; Discussion Forum; Interviews	Cosmic-Artisan  Becoming Minoritarian

	work in ways which may be considered 'posthuman'?		with 4 participants.	
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*Table 4.1: Project Timeline*

This employment of 'concepts' as starting points for new ideas implicates and situates them directly within our research assemblage; they are not static or hypothetical, but put to work practically. In this way they are the '...means by which we move beyond what we experience so that we can think of new possibilities.' (Stagoll, in Parr, 2010, p.53). In a number of cases, participants identified and recognised the emerging themes themselves, using the Connection drawing tool to link together data/phacts they posted on the Padlet, or articulating them in ensuing discussion threads.

#### **4.1.2 Becoming-Manifesto for Posthuman Education**

Each set of data encounters is foregrounded by statements drawn from the 'Becoming-Manifesto for Posthuman Education', a living document created by participants at the close of the project (the full document can be found at Appendix 1). In the spirit of participatory action research and research-creation, participants drew the project to a close by deciding together to create this manifesto; an editable document into which participants posted statements describing their understanding (gained as a result of the project) of what posthuman education is, or could be. It should be noted that the manifesto is not static and continues to be worked on eight months after the initial project ended. In this way participants have undertaken their own analysis and thus (in the spirit of the participatory nature of the project) I will use their words as a

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frame to draw together key themes which emerged during our four months of thinking, creation and collaboration. Each section then incorporates data/phacts, personal reflections obtained from the four interviews, my own reflections (as part of the 'crystallisation' process), and one description in detail of a data 'encounter' (inserted as an interlude) to illustrate both the research process and how the motif or concept came alive.

## **4.2 Phase 1 – Rhizome**

*Posthuman education...thrives in environments that nurture connectedness, and flourishes in 'uncontrolled' spaces. (A Becoming-Manifesto for Posthuman Education)*

The concept of 'rhizome' was introduced at the outset of the project as a motif to explore ideas of informal learning, that is learning both mediated by technology and seen as 'inconsequential'; not recognised within state education systems. It formed the overarching emblem for the first month of the project (May 2019) and a number of activities were designed around it; some related directly to the concept itself and others using the idea of the rhizome as a route into thinking differently about education. In exploring the data/phacts, the following themes emerged: heritage, technology and curriculum. These themes will be explored in more detail later in this section.

### **4.2.1 Research-Creation activities**

Before moving to relate the rhizome concept directly to education, participants were invited to explore the idea by selecting a rhizome from the natural world in order to draw analogies between their working practice and rhizomatic

structures. The range of responses included sea lavender, mint, daisies, lilies, crassula and ivy; each connected with a story or narrative describing the reason behind the selection. Interestingly participants chose rhizomes that affected them in some way; their choices resonated in connection to family memories, favourite places, smells and colour. This embodied response encouraged attachment to the idea as it moved from the philosophical space of high theory to something tangible and personal.

Later in the month, participants extended the rhizome idea to consider their own networks, both human, technological and material. Images chosen ranged from a messy desk, the social media site Twitter and rag rugs. Familiar childhood stories also emerged and were 'read through' the rhizome concept; these included Alice in Wonderland, Mary Poppins, the Railway Children; forming new patterns of diffraction (Haraway 2016). All images, creations and discussion points were gathered by participants on a Padlet; forming a collection of data/phacts:

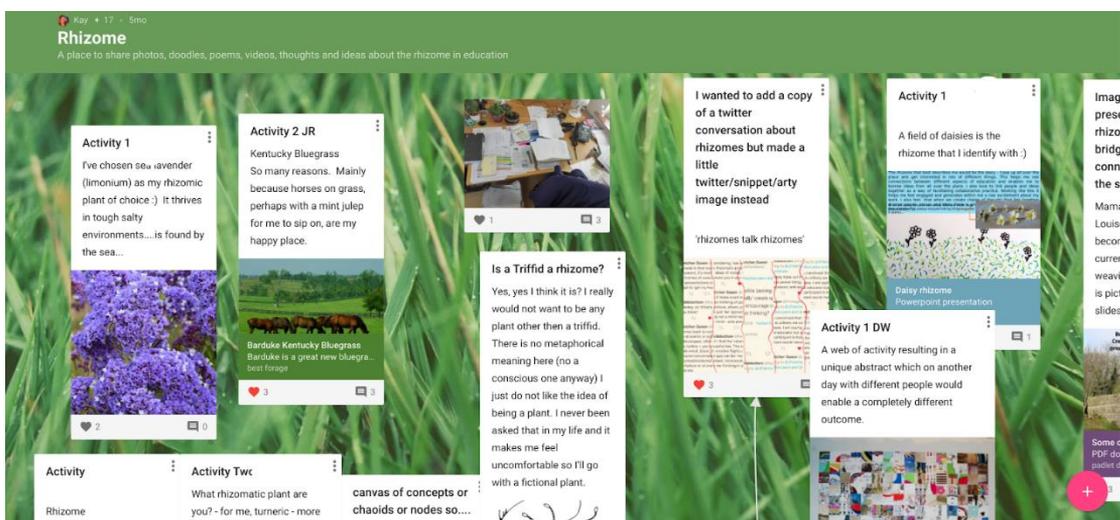


Figure 4.2: Rhizome Padlet

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After gaining an understanding of the concept, participants put the ideas to work by considering the role of rhizomes within an educational context.

#### **4.2.2 Heritage**

*'It's interesting how my grandparents and their forebears are creeping into this whole thing with me...'* (Lily).

The discussions about rhizomes were just one example of how stories/oral histories of childhood and relationships with others wound their way through the project; even in seemingly unconnected activities. The recurrent noting of the power of smell, touch and associated memory evoked ideas of a curriculum that is not specifically cognitive; but contains embodied knowledge and a desire to relate ideas back to localities and personal histories. The process of selecting rhizomes revealed much about personal connections to traditions and the land:

I hovered over this [choice of rhizomatic plant] but I've gone with lily-of-the-valley because as a child they seemed like a miracle. My adoptive mum treasured them (my dad dug them up) and my birth mom always wore the most famous reproduction of their fragrance Diorissimo. I can't smell it now without thinking of her. They like damp, dark soil and I have never been able to grow them but I am inspired to try again. I love their dichotomies - delicate and persistent, decadent and fresh. In fact that's the point, how can it be a dichotomy when you are two things at the same time? In that tension is their beauty for me. (Cherry).

To me, rug hooking is a wonderful example of a rhizome. It is a craft which I learned from my grandmother, although only from watching as I didn't start

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doing it before she died. Other people, some 'live', some online have taught me the techniques, and there has been a fair degree of teaching myself. It is a craft that British and Irish settlers brought over to Canada. They used old hessian sacks, bent nails and rags to create rugs for cold stone and dirt floors. It has been passed on from community to community, patterns constantly being reinterpreted and new ones created. Although it is often something one does in isolation (though usually whilst listening to music, a book, a podcast, or something on the radio - I always wonder if the thing I am listening to is being embedded in the rug) there are groups of rug hookers communicating in small 'hook-ins' and online groups, sharing photos, techniques and snippets of personal lives...There is no right place to start hooking; you pick a spot that calls out to you, and move around the hessian as sections interest you. You can hook in straight lines if you like, but hooking in different directions creates more of a sense of the shape and movement of the natural world. (Bluebell)

The evocative nature of the memory-writing here spoke to the embodied and embedded nature of activities such as craft and gardening; not always seen as 'educational' within formal narratives of schooling but nevertheless central to individual histories of learning and making sense of the world. The surprising yet consistent way in which such stories recurred throughout the project suggests a potential role for philosophical concepts in forging connection between personal stories of heritage and current pedagogical practices.

### **4.2.3 Serendipity**

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*Posthuman education...is a simultaneity of dynamic hopefulness within education with the added amplification of chance. (A Becoming-Manifesto for Posthuman Education).*

These examples of diffraction - reading current experience through seemingly unrelated histories and narratives - recurred throughout this first month of the project. Connections were made too, to spirituality, epiphany and chance or serendipity; Bergamot described how thinking rhizomatically allowed her to map the connections between her current role as an educator and the family influences on her journey:

In this moment of epiphany, my memories began to flood me with all the many ways everything that had come before and all that would come after were, are, and will be practice. Then, my thoughts took a broader leap backward to account for the influence of my ancestors' decisions and how those shaped and are shaping my trajectory. I thought of my great-great grandmother who taught children of color in rural Appalachia at a special school since segregation was rampant and how I have become an educator despite initial resistance. Thoughts of the forward view of how my choices and those of my contemporaries will circumscribe or expand possibilities for the living creatures yet to come gave me much to contemplate, too. I don't remember for precisely how long the clock ticked, but I was gobsmacked and stunned, silent for what felt an eternity, feeling time's fluidity in a moment of realization.

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Rose felt that becoming cognizant of the role of chance and articulating it was important in an educational space that was heavily regulated and overcoded by cognitive science and linear projections (UK-based education):

I'm throwing this stuff out there and I've no idea but that thing about coincidence, sometimes you just hit across this idea and you come across this person and it's just the right time and I love that. We never take much notice of that but it's such a thing isn't it? A real-life thing?

Acknowledging that chance or luck is indeed a significant 'thing' in education and professional development also poses a challenge to hegemonic ideas of time as linear, and 'progress' as pre-planned and predictable within educational systems. For Lily, there was power in recognising the impact of (seemingly) chance meetings or moments of connection and she related these networks to the idea of rhizome:

...And there are the fragmentary wonderful [connections] that happen in a moment and are over in a moment, but which could pop up all over again when you bump into a key person somewhere...even within networks that are formal and controlled...you meet people that you make more rhizomatic connections with and who pop up in other places, with some of the other people from the other networks.

Discussing educational and leadership networks (as well as learning) using the language of nature (rhizome) rather than the language of business felt like an important shift at the outset of this project. It set the tone by both de-centering the human and offering alternative educational visions which were carried through subsequent project phases.



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Participants took time to reflect on the digital nature of the project and the way in which our activity across online spaces mirrored and actualised our discussions about how rhizomatic learning could work in practice. We discussed the way in which platforms can be both open and accessible, while at the same time subject to capitalist practices of monetising, data farming and monopolisation. This complexity evoked Haraway's (2018) idea of 'staying with the trouble'; recognising that there are no spaces of utopia in education, only the imperfect world within which we are embodied and embedded.

***Reflective Interlude (from research journal): 'The Syntax of Spam'***

*Within the first few weeks of the project it became apparent that a number of the participants who had expressed an interest in joining and signed consent forms had not added themselves to the COOC space or taken part in introductory activities. Reminding myself of the high drop-out rate in online spaces (Onah, Sinclair and Boyatt, 2014) I accepted this initially but on further investigation I discovered that the invitation emails from my university account had in a number of cases gone straight into spam folders. This prompted me to ask the following question in the discussion forum:*

*"Do we need to think about the impact that algorithms and other unseen digital influences have in the way we interact online? Although I love the anarchic and chaotic nature of web-based rhizomes I'm thinking there will always be some 'territorialising' elements that capture the things people do and force us back into conforming, or being shut out, only staying with what we already know, etc etc. Is it a bit like different rhizomes overlapping or contaminating? Or a particularly pervasive (capitalist) rhizomatic weed springing up where it isn't wanted? Who decides what spam is? What are we missing when we create these categories?"*  
*(Kay).*

This problematising of junk mail led to Bluebell instigating a creative project around the affective nature of spam:

*"I quite enjoy perusing my spam folders (luckily, because that's how I found the COOC invitation). There is so much of interest. For example, why does one message from a particular sender get sent to spam whilst another one doesn't? What are the determining factors and who determines them? I am also really fond of the weird*

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*narratives that appear - stories of people in terrible circumstances, or African princes who just need a bit of cash to release a large fortune. There is real creativity in those messages and I want to know who writes them. Then, there are the ones that threaten me with contacting all the people in my contacts and showing them the porn I've supposedly been looking at if I don't forward them some money - I am always tempted to reply and ask them to be sure to forward it to me too, so I can have a few minutes' titillation - but something stops me from doing it.*

*There is also an art to the intriguing subject lines of spam. Even though I know I shouldn't, some of them are so fascinating that I open up the email... others I just bypass. I think there is a poem in there somewhere."*

Lily also explored the affective nature of digitally-generated messages.

*"I got this email from you Kay, not in my spam.*

*'Welcome to Posthuman Education!*

*If you have not done so already, you should edit your profile page so that we can learn more about you:'*

*I was interested in my reactions to it. Firstly, I wanted to type a big explanation about how I'd already tried to upload a profile picture but couldn't and thought it might be to do with my Pixelbook interface. In my mind a Pixelbook is a quiet challenge to the operating system and hardware hegemony of Apple and Microsoft, but who am I kidding, I mean Google. It's a choice that isn't always easy.*

*Anyway, I was curious about my go-to reaction of explanation because the emotion underneath the good old Catholic guilt was one of resistance to the 'should' in the message. I then found myself wondering if this was a machine generated message that was ruffling my feathers. I made a mental note to ask. I wanted it to be a standard message but even then it had human behind the syntax somewhere. I am sensitive to imperatives: the needs, the musts, the shoulds. There's a pedagogical link there...'*

An ensuing poetry activity (in which we created collaborative poems based around email headers in Spam folders) provides an example of the generative nature of the research-creation process and the shift from 'noticing' (a manifestation of power within a system) to re-mixing and creating.

*Table 4.4: Reflective Interlude #1*

#### **4.2.5 Curriculum**

The theme of curriculum ran through each stage of the project but was addressed explicitly in this first phase. Once the concept of 'rhizome' had been

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understood in both a cognitive and affective way, participants began to discuss the paradox of 'rhizomatic education' within a system that formalises and sets boundaries around a fixed and linear curriculum with set outcomes:

It appears that [within the current education system] if it cannot be measured it has no value or accountability. Speaking from experience, we are fortunate in the art college to have plenty of flex within our curriculum areas, enabling a responsive approach to the world beyond the walls. This, of course, is only possible because the validating body's criteria enables this approach. I imagine [college name] is somewhere close to what could be described as rhizomatic, this passed briefly through my mind yesterday when I was in a practical workshop space where there were students from level 2 to level 6 developing their own work in close proximity to each other and ideas popping up and being shared across the various benches. (Mint).

...[there's] a need to redefine and create new language that embodies the ethos of a more exploratory and organic form of learning which is unrestrained by the formal academic expectations. (Ginger).

These two comments demonstrate both a desire for open curriculum systems and an understanding that they may already exist in certain contents. Applying the concept of the rhizome in this way helped them to connect the natural metaphor of roots spreading out and connecting disparate elements together with ideas of learning as relational, cross-generational and unconstrained by formal educational systems.

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Critiquing the Cartesian heritage of dualistic thinking, participants noted that we also need to avoid the false binaries which separate formal and informal learning:

‘Is there a space that is both curriculum and non-curriculum- and if there is, what does it look like, I wonder?’ (Mint).

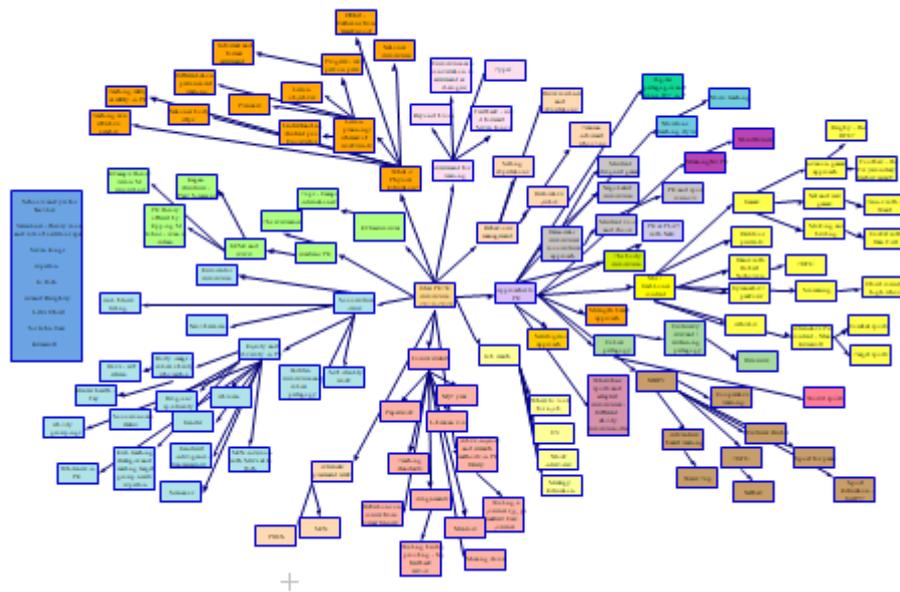


Figure 4.5: A rhizomatic curriculum

The process of mapping curriculum rhizomatically (rather than using traditional linear models) was helpful to Bluebell and offered a possible route for her through the informal/formal issues of curriculum development. ‘As I start to plan, I have no idea what starts or ends (hopefully the students decide this), but I found it helpful having a visual map when planning and creating links to themes.’ (Figure 4.6). Bluebell’s curriculum diagram demonstrated how rhizomatic ideas can help bridge the gap between pre-planned and organic

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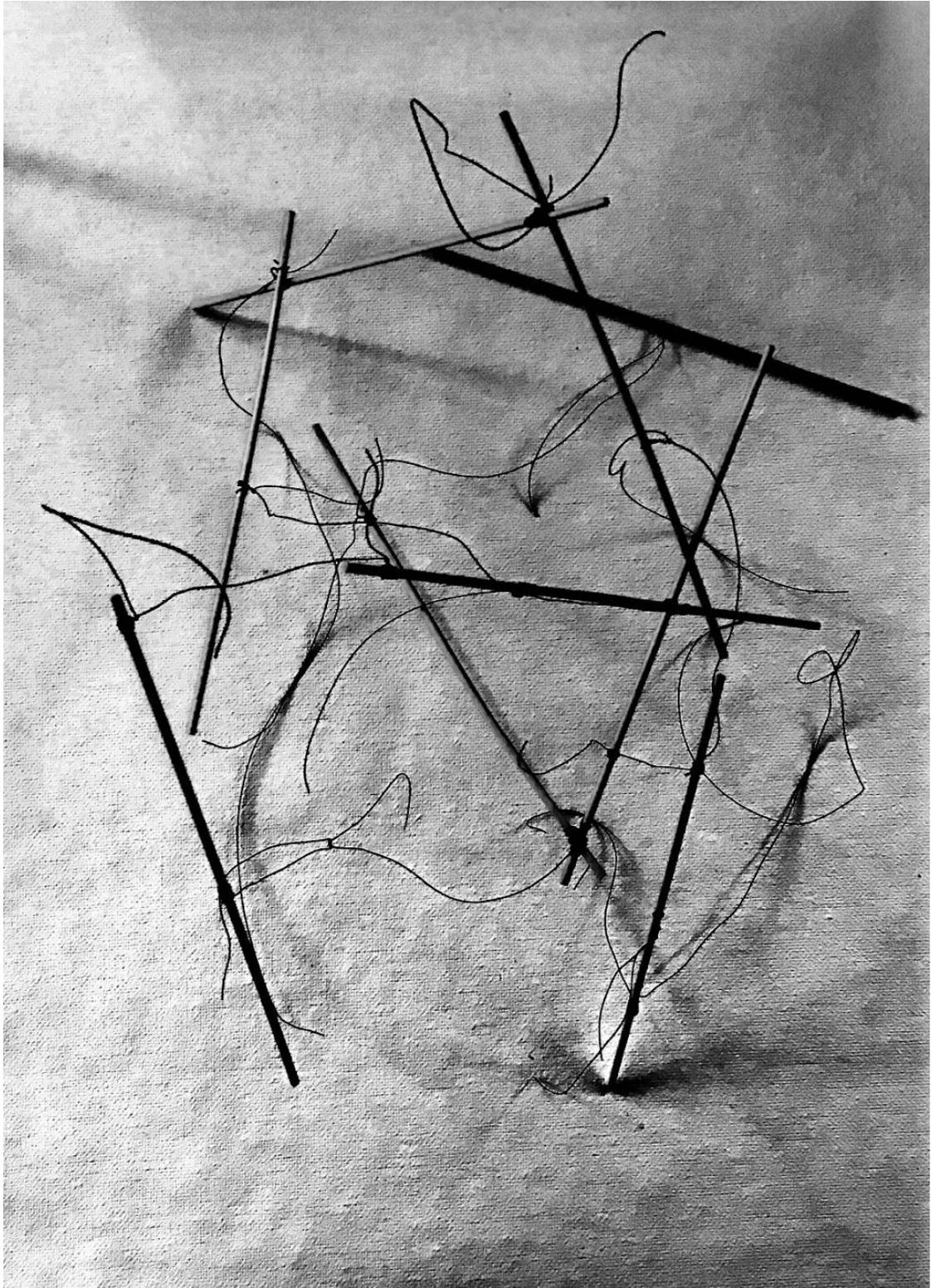
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forms of learning; although there is inevitably some intent, it is always in flow and able to adapt and connect as new ideas emerge.

For Bamboo, the notion of a rhizomatic curriculum was encapsulated in a sculpture she created for the project (see Figure 4.7). In her words:

I have a small seed of an idea for a sculpture engaging with the idea of rhizome as 'connectivity' and 'growth' (I am physically connecting wooden rods with wire). I am struck by the intrigue that has been stimulated by the negative spaces and free flowing movement of the form as I manipulate the materiality of it; implying possibility and potential, the instability and fragility of the form challenging the making - the form can take any shape, it can support itself in many ways, being flexible at one and the same time it can be easily altered yet resists change through a level of tension inherent in the 'springiness' of the wire and rigidity of the wood.

By using art to express her understanding of rhizomes, Bamboo was able to express the potential of this concept for enacting a new version of curriculum. Ideas of 'free-flowing', shape-shifting and potential spoke to the adaptive and mobile nature of a rhizomatic learning experience, whilst the use of natural materials emphasised relations to the organic.



*Figure 4.6: 'Spaces Between'*

Orchid found that the idea of making 'multiple, sometimes seemingly disparate connections' between curriculum elements helped her and her students (Early

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Years practitioners) to think relationally and imaginatively about entrenched issues in early years education. For Ginger, it was important to trouble the idea of curriculum as intent or process; noting the hidden ideological elements inherent even in unschooling or anarchist education which are 'tied into the why and how of learning.' Mint suggested that this is where new thinking and language can help:

[This is]...precisely what I mean by a need to redefine and create new language that embodies the ethos of a more exploratory and organic form of learning which is unrestrained by the formal academic expectations.

At the close of the first phase, participants reflected on what they had discovered in their creative explorations of rhizomes and curriculum. Lily noted the importance of language in education and how using a natural metaphor had emphasised the organic, rather than corporate nature of learning. For her, this linguistic shift enabled different thinking about purpose and presented possibilities for reshaping education:

The rhizome is about (maybe) subterranean. About unfolding blindly - it enables growth. By contrast 'Networking' is language that is very attached to a consumer-led group of language which imply use and value rather than friendships, creativities and conversation.

What might be a more useful word, I wonder?

I am inspired by this way of thinking about education and it prompts a focus on the language of education and the definitions we use to make sense of what we mean by education today. The word 'curriculum'

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denoting 'that which is taught', is rooted in a specific system or organisation that progresses linearly: plan, deliver, outcome, assessment and so forth...this is in my opinion an outdated view and perspective - hence the current debates. Also, 'school' suggests a specific physical space wherein this curriculum is mobilized to reproduce predetermined outcomes. Perhaps a new idea for 'school' - learning can take place anywhere - I think the idea of 'environment as learning opportunity' is a good example.

### **4.3 Phase 2 – Nomad War Machine**

*Posthuman education...reminds us there is more than one way, there are 'other views' and ways of thinking, other approaches and that otherness is good, but othering is not so good. (A Becoming-Manifesto for Posthuman Education).*

Deleuze and Guattari argue that 'a society is defined by its lines of flight...there is always something that flows or flees, that escapes the binary organisations, the resonance apparatus, the overcoding machine.' (1980, p. 238). For this phase of the project (June 2019) we explored the concept of 'Nomad War Machine'; how we might as individuals and communities enact posthuman education outside traditional hierarchies of state control as mobile navigators; seeking moments of escape which interrupt normal structures in education. This phase brought in discussions of power, framed through the Spinozan ideas of 'potestas' (power as usual) and 'potentia' (affirmative, fluid and generative forms of power; which may also be natural forces). By identifying 'lines of flight' away from usual educational pathways which had either been taken or considered, recognising different forms of power in action, and exploring how

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escape moves are recaptured (re-territorialised) by the system, participants reached different understandings of their daily teacherly activity. Within the concept of Nomad War Machine, a number of related themes emerged. These were fugacity, undercommons and power.

#### **4.3.1 Research-Creation activities**

As in the previous phase of the project, participants were invited to respond to the following two questions using creative approaches:

- What image springs to mind when you think of Nomad War Machine?
- What do working spaces of potestas and potentia feel like to you?

These ran alongside discussions in the COOC forum which (as in the previous phase) often extended into other online spaces.

During the month, participants became particularly interested in the idea of 'lines of flight'; 'paths of mutation precipitated through the actualisation of connections among bodies that release new powers in the capacities of those bodies to act and respond.' (Lorraine, in Parr, 2010rich, p.147). The idea of flight lines as deviations from hegemonic educational situations led me to add two further prompts to our activities in the form of the following questions:

- Can you think of lines of flight that you have taken? Or you have seen taken?
- What examples can you give of lines of flight that you nearly took, but didn't (and why that was?)

As before, data/phacts from this month's explorations were shared on a group Padlet. They included sketches, poetry, blogs and diffractive memory-writing in

which participants related the Nomad War Machine concept to their daily practice.

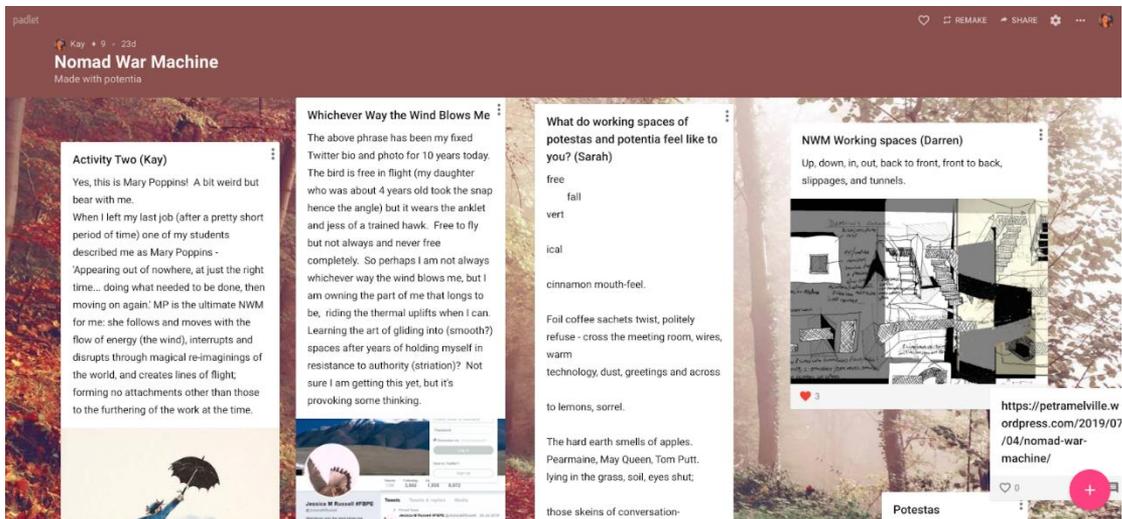


Figure 4.7: Nomad War Machine Padlet

### 4.3.2 Fugacity

*Rather than pathologizing or exploiting the student's 'tragic life stories', posthuman educators can 'apprentice' students in creating space for hope; thus, maintaining freedom, lines of flight and vitality. (A Becoming-Manifesto for Posthuman Education).*

Connected to embodied and affective ideas of learning was the theme of 'fugacity'; defined here as the fleeting and ephemeral moments of 'lines of flight' experienced by both students and teachers. As the Nomad War Machine is unattached and mobile, so learning may take an individual or group 'somewhere else'; other to what has been planned or articulated in a formal curriculum. Numerous examples were given concerning situations where participants had taken a lesson in a different direction, or had learning plans altered by their own students. 'Fugacity' was adopted as a term for this aspect

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of posthuman education as participants felt that the word incorporated both the idea of 'flight' (deviation from the status quo) and 'flow' (acting in the moment):

So I think it's interesting that a lines of flight question brought me on a questioning line of flight to two references to the word 'flee' and that flee and flight share a German etymological root which can be traced back to pleu meaning flow which is also a frequently used D&G [Deleuze and Guattari] term and explicated by Foucault as: "forces that escape coding, scramble the codes, and flee in all directions: orphans (no daddy-mommy-me), atheists (no beliefs), and nomads (no habits, no territories)." Maybe I am more comfortable with flow than flight and maybe I don't need to worry about molecular. Maybe!' (Lily).

In this way, participants were beginning to build and develop their own concepts, exploring the subtleties of language which suggested variations on the theme of escape from institutionalised processes.

Interestingly Ginger felt that school could be in itself an escape from some societal constraints:

I am going to diverge a little bit from the prompt. Is it possible to think of schooling itself (maybe not the existing system but some idealized form of school) as Lines of Flight itself. School is "outside of society" but still "of society."

As if stepping into school is stepping outside the striations of society into a smoother space that allows you to Create, Explore, Inquire, Discover, Dissect, Analyze, Repair without having to fully abide by the rules of the societal apparatus. This 'state of school' as a line of flight is temporary

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in that the intention of school is to send you back into society rebuilt with a greater understanding and awareness of the machines in society and with the tools and skills to deterritorialize and reterritorialize.

School as a Liminal Space that sits between the "real world" and the infinite potential worlds. It exists to be the engine of Becoming.

This vision of school as itself a Nomad War Machine presented the idea that we do not have to necessary re-invent systems, but can instead re-imagine and re-direct the ones we have. For Ginger, who had started his own school, the concept allowed him to explore the ways in which formal education could be harnessed as a 'prefigurative space' (Suissa, 2014), reflecting the kinds of societies we ultimately aim to create.

Lily saw each individual teaching experience as an event, unique in its deviations:

...for me each teaching session is like...we're going to go on a line of flight together and it will be influenced by the people in the room and how they respond and it's almost like a magical journey. It's a carpet ride almost because it does something funny to time...I've done it often enough now to know from student feedback that the sense of time goes for everybody and I cannot catch that in a lesson plan. I can't really plan for it in writing. I can't, I can't guarantee it's going to happen either, you know? I can't really go 'oh let's go on one of these lines of flight' thing you know? (interview transcript)

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Ginger related his experience of nomad war machine to the natural phenomenon of wave-surfing, sensing moments of 'flow' which he later went on to connect to moments of learning in the classroom:

Probably because I was just at the beach for a week but I think of [Nomad War Machine as] surfing a wave (or more accurately for me body surfing or boogie boarding). You want to catch the wave as it is breaking as it is moving from one state to another, crashing down. You can ride that transitional state and use its energy and if you hit it right it is exhilarating and effortless. It is that energy of creative destruction. I also think of Shiva the destroyer and creator.

Thinking of pairs of opposites is some form of creating fixed identities. I am not sure how to state it but I think the magic is not in the one vs another but in the "vs" itself. It's in the flow, the becoming, the possible.

(Ginger)

During the later part of this second phase it was notable that participants were starting to apply the concepts more practically to their experience; language was shifting from conceptual to real-life exemplars, as demonstrated in Fern's example here:

I have thought about this question a bit [lines of flight] and think I generally call it 'challenging the status quo.'

The ways I do it:

- share knowledge that encourages students to question the structure that surrounds us

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- resist the norms of PE and the stereotypical culture that involves [PE is my specialism]

- question the neoliberal structure

- write critically within the institution even though I am essentially writing against it

- I do the paperwork required for my institution but in classes where it is just myself and my students, that is where I feel the 'line of flight' occurs and where I attempt to challenge thought/assumptions

I encourage students

- to go off lesson plans

- challenge policy in school and statistics that promote inequality e.g. school exclusions that are largely black and brown students

- to use parents as allies

- critically reflect and see themselves as always becoming - not fixed [this idea is new to them, they feel like they are achieving for their teacher qualification then their learning stops].

After sharing examples, participants took comfort in the idea that lines of flight do not have to make radical alterations to the status quo:

I think for me that idea of lines of flight, like you said, is really powerful because it is that constant ways of... kind of finding means of escape and that idea of it doesn't have to be something that ultimately changes everything you know? That's been really liberating. (Mint)

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The spectre of ‘reterritorialisation’ (recapture by the system) was ever present as participants noted ways in which their lines of flight were curtailed:

...So for me putting together a credited folder is an absolute nightmare because I have to remember to do it whilst I’m on that line of flight to remember to take the photographs, remember to take the notes for the evidence and the witness statements, to remember to get the students to stop the interesting and rich discussion so I can write that down and capture it. (Lily).

### **4.3.3 Undercommons**

*‘Fugitivity, then, is a desire for and a spirit of escape and transgression of the proper and the proposed. It’s a desire for the outside, for a playing or being outside, an outlaw edge proper to the now always already improper voice or instrument.’ (Moten, in Wallace, 2018, para. 6)*

Connected to the idea of nomadic detachment from the usual paths of learning was the idea of being ‘outside’; either literally (learning in different spaces) or metaphorically (feeling like an outsider). The idea of ‘undercommons’ (Moten and Harney, 2018) encapsulated the idea of fleeing/fugitivity and accessing informal spaces of learning. Mint wrote a short piece on the idea of how students ‘come’ to learning, reflecting on the entanglement of people and place with a turn away from the idea that students present as a blank slate:

#### *Journeys*

*I wonder more about the classroom beyond the classroom; the wider assemblage of getting ‘to’ the classroom. Do we arrive ferried in cars,*

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*fetches and carried seamlessly from known familial power-structures to the power-structures of education? Or do we arrive through wilder pathways; shuttled on buses – unsegregated from different classes, buses have potential to be places of misrule and disruption, framed in bright upholstery or grey plastic. Dangerous spaces.*

*Do we walk? And if we walk, do we walk on pavements, past boutique shops selling carefully distressed furniture, or past the bright signage of fried chicken parlours and one-stops. Or do we walk through parks, or through green lanes where hedges are the boundary-spaces, full of insects and knapweed.*

*(Mint)*

Participants discussed the way that learning often happens in places other than the classroom, yet these are not generally acknowledged or considered in relation to the process of education. As Rose revealed:

I actually got my degree from my bed! I just felt like maybe I was a bit weird or... but now I've read about other people that the bed is a site of learning it was helpful to see that there are other people like me...

Taking account of the other locations and situated nature of where learning actually takes place was an important consideration as participants troubled the notion of classroom being at the centre of curriculum. Peony and Mint (who work for the same organisation) were interested in corridors as sites for 'fugitive' conversations:

'Ah, I bumped into Peony in a corridor and I told him all about it and now he's now doing it [this project] and now I'm speaking to my students and they're all talking about it...' (Mint)

Mint noted the generative and free-flowing nature of corridor conversations and the etymology of the word - course - which related to curriculum. Repurposing spaces and playing with their traditional intention led to creative and rhythmic disruptions, altering their nature imperceptibly. She added an important reminder, however, that this process is not neutral; not everyone will have access to the 'transportation of ideas' and people that propagate them. This comment related to the posthuman imperative to elevate missing voices and consider who is excluded from this process of ideas-generation.

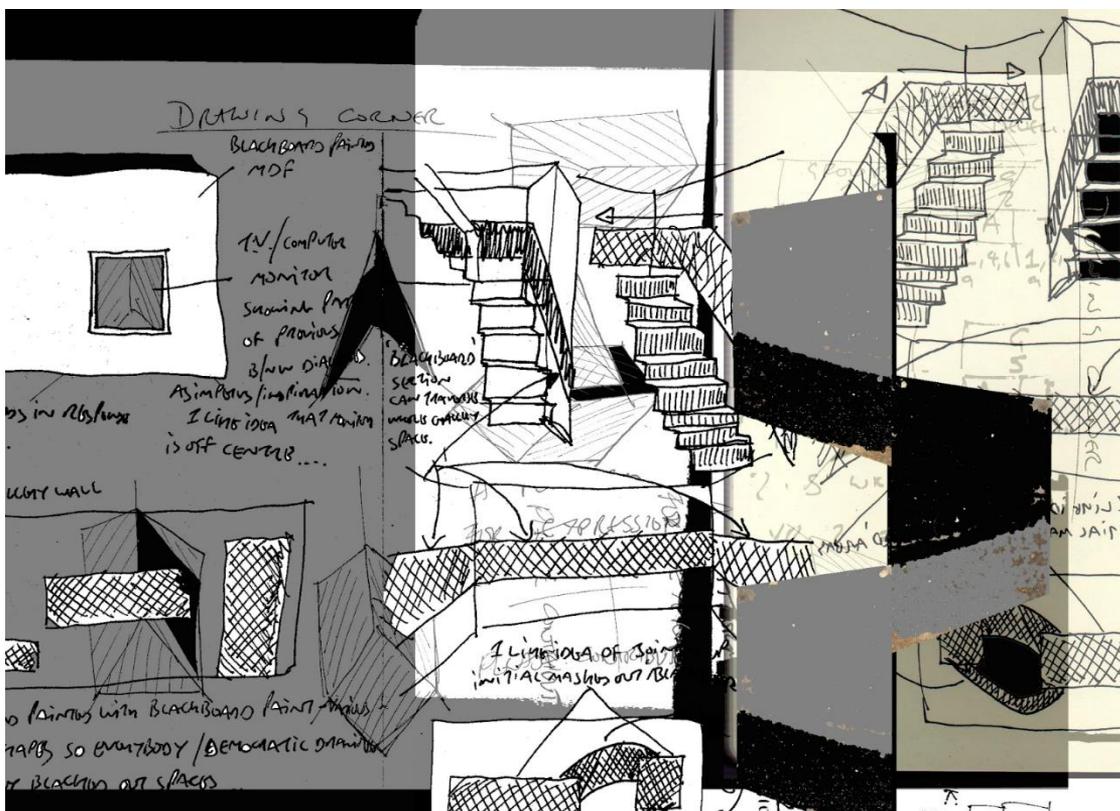


Figure 4.8: Up, down, in, out, back to front, front to back, slippages, and tunnels.

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This formed a stark contrast to the constraining nature of the traditional classroom as expressed by Lily:

My experience of classrooms as a pupil is that they are places of safety, of fixed power-relations, of hierarchy. They are places of boredom, where the imagination drifts off through windows, or populates underground spaces. Places where everyday objects, like coffee cups, or pencil trays, take on temporary import – filled with meanings that dissipate once the bell is rung. Do you remember the feel of having a ‘new book’, it’s smoothness, pages waiting to become untidy? Or a new pencil case, full of small differences.

#### **4.3.4 Power**

Participants selected a range of images to represent what ‘potentia’ power (natural and generative positive energy) meant to them in relation to education. Examples included; forest fires, clouds, weaving, birds of prey and waterfalls.

An anonymous post on the Padlet described potentia as:

Confusing & liberating, chaotic & free, disorganised & creative, uncontrollable & fruitful, unpredictable & surprising.

We reflected on how we felt in spaces of formal, hierarchical power and what this meant in terms of our relationships to organisations. For some, this showed up in endless administration, management of metrics or emails. For Lily, ‘potestas’ manifested most strongly in meetings:

Those damn meetings where potentia is not wanted! These meetings are not generally beautiful because they are all about potestas and

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[being] seen to be doing the job talk. In those spaces I try to make sure I am facing the window, always near the door. I am in the meeting in my body but my mind first locates the 'potestas' and then takes flight out of that window or in the words of E. Nesbit I 'go quickly and quietly away...'

The body is left to do the enduring. My heart rate leaps around. I know this because my stress watch goes off, always, bringing me back briefly, telling me to breathe. This is because I am holding in all the potentia; the secret strategy is to unleash it gradually in more effective spaces. Potentia is my under a stone thinking, only slightly informed by the hours of being potestas 'sitzfleisch' in meetings where much of the room is seizing the potestas like kids playing pass the parcel after ingesting too many E numbers and a kilo of sugar at a party.

Lily put the concepts to work here, exploring both her cognitive and embodied reactions to power in work meetings. The struggle of balancing potestas and potentia power, and reflections on our own 'love of power' (Foucault, in Deleuze and Guattari, 1987, p.xiii) helped us to examine our own role in the perpetuation of oppressive power relationships. As Cherry stated:

In my last job there was huge resistance to thinking/working rhizomatically for a number of reasons. I think I ended up continuing to work in the ways that felt comfortable to me but looking back maybe I should have taken more time to work things through with others. I could be a bit too forceful (my own potestas issues perhaps?) and it just put up more barriers. It's a bit like forced rhubarb where you shut it in a dark warehouse for months and it grows but not outwards, just of itself.

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...the potestas/potentia analogy helped me here - I was probably trying to work too much in spaces of the latter rather than the former. Most of my potentia spaces were outside the organisation and I always had those :)

The identification of different power forms, considering the balance of potestas and potentia power, and the idea that anyone can hold power was felt to be liberating. Exploring the way in which the different forms can work together as well as in opposition, and accepting that organisations are in their very design spaces of 'potestas,' enabled participants to both 'conscientise' (Freire, 1980) and pinpoint places where they could enact power in different ways. At the close of this phase Lily stated:

I am owning the part of me that longs to be, riding the thermal uplifts when I can. [I am} Learning the art of gliding into (smooth?) spaces after years of holding myself in resistance to authority (striation)...

**Interlude: Taking a Line of Flight (Mint)**

*This seems like a very 'small' thing, but I think that's where ideas start.*

*For my first job in education, I was a school librarian (part-time, unqualified, also did the photocopying). This was many years ago; mainstream secondary, rural comprehensive in area of acute rural deprivation. No-one much used the library - it was gated, guarded, impenetrable fortress of unknown 'knowledge'. No-one much cared about the library in management. I wanted to open up the space, show that books can be welcoming as well as forbidding, show that books can be fun.*

*Working with some Y10 students (who were placed in the library for detention as a punishment - that was one of its main use values to the school) we organised a live concert to raise money for charity at lunchtime. I did politely request permissions and received them, but no-one really thought about it. Then the Y10 students really started to talk and make things happen. A Y10 girl was working as a singer in local pubs (this was a long time ago) and she agreed to sing. On the day, I was surprised when a group of students wheeled in a*

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*mobile stage and a (massive) sound system. That was my 'line of flight' moment, I think. I 'should' have spoken to those in charge and I very consciously determined not to do that. Because they would have stopped the happening.*

*Then, people started to come into the library - more students than I'd ever seen before. The singer started to play her set (blues, some pop). It echoed all over the school. Pretty much all the school piled into the library that lunchtime. Some other students sang, told stories, did stand-up. The event was (on a local level) huge. There was no entry gate system (there was no system at all!) but my Y7 librarians went round with filing trays and envelopes and many gave money to charity. We raised over £200. The teachers on duty outside came in to see what was going on. I was asked to call off the event but I didn't (to be fair, I couldn't even if I had followed instructions and tried, it had gathered its own momentum - it was beyond me).*

*But, it was a thing. And I don't think the library was ever the same again. I don't have more contemporary examples - where I work gives me creative freedoms, in the main - and I know how to ask well. So I can ask to set up a 'space where I don't know what will happen yet' and I use theory to show how and why this is important. But I remember that first event - when the friends and family of the singer wheeled in this enormous set of speakers and sound equipment and thinking 'well, this is going to be beyond me - let's let go and see what happens'. And the trust in the pack of whole school, getting this filled out space to 'leave well' - feeling scared as one person (standing, by this time, on the library counter so as to see over the heads) - but also knowing that letting authority and trust pass to those L10 students - letting the library be re-envisioned as not only 'fun' but 'subversive' space felt absolutely felt right.*

Table 4.9: Reflective Interlude #2

#### **4.4 Phase 3 – Assemblage**

*When looking for problems to solve and finding solutions, Posthuman education looks beyond the narrow perspective of materialistic, intellectual and spiritual growth of humans and considers the impact of choices and actions at a whole system level; biosphere, species, social, cultural and technological. Seeing the nodes and the nature of the connections.  
(A becoming-manifesto for Posthuman Education).*

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An assemblage is ‘...a multiplicity which is made up of many heterogeneous terms and which establishes liaisons, relations between them across ages, sexes and reigns - different natures. Thus, the assemblage’s only unity is that of co-functioning: it is a symbiosis, a ‘sympathy.’ (Deleuze and Parnet, 1987, p.69). This phase of the project required participants to turn their attention to the materials, objects, non-human ‘others’ and ‘things’ that create desiring assemblages which influence and shape their teaching practice. This month participants continued to build on the preceding ideas; emerging new threads of thinking which are organised here as animals, materiality and embodiment.

#### **4.4.1 Research-Creation activities**

In the first activity, we reflected on teaching (or learning) spaces in which we have enjoyed spending time. We shifted focus from the humans in the space to the other components - the furniture, wall decoration, layout, objects in the room, windows, floor coverings and so on; not only considering what was seen but what was sensed affectively - temperature, smell, light, weather, noise, and the general atmosphere. This shift took in notions of materiality and affect: ‘We have always known that things can do things, and even that things often conduct their thingy activities regardless of our human expectations or intentions.’ (Marchand, in Braidotti and Hlavajova, 2018, p.292).

We also considered the influences that have shaped how a teaching space looks and feels, which could include teaching strategies/theories, management decisions, building design and so on. Participants were invited to draw, describe, or find images that represented how they were affected by the various material elements they noticed and respond to the question: What might the

impact be of changing one of these things, if only slightly? How did the various material elements interact with each other? Participants then went on to design (and enact in some cases) ‘disruptive’ educational activities, known as ‘educrafts’ (Taylor, 2016), which in some way interrupted the linear, hegemonic processes of classrooms ‘as normal.’ As in previous phases of the project, participants posted their creations onto a Padlet site:

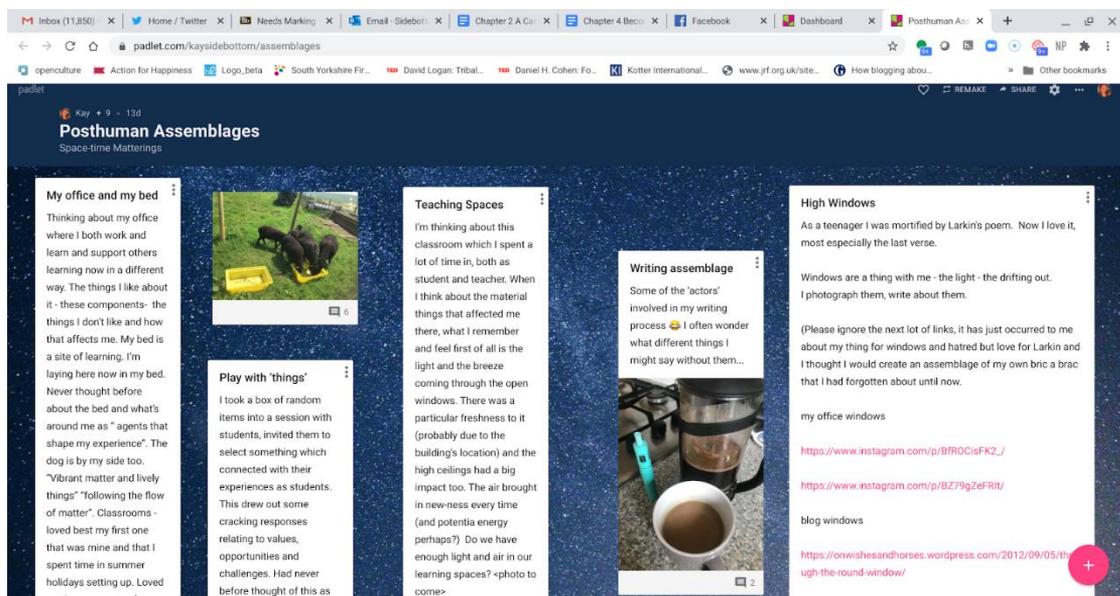


Figure 4.10: Assemblages Padlet

#### 4.4.2 Animals

A focus on animal companions as part of our own learning and teaching assemblages shifted the norms of human-centeredness and exceptionalism. Participants discussed how animals influenced their own lives as learners; or gave examples of how animals entered their teaching practice, either as deliberately invited ‘guests’ or surprising visitors.

I teach in rooms surrounded by trees, plants, birds, squirrels, cats. We talk about all those too - quite often when referencing the flight, fight, freeze response. (Lily)

Everything changed, the mood, the type of interaction, the stories people told, all based around the stroking of a happy tail-wagging Tarquin who gave everyone some time. I do not have a dog, I am not already part of this group that knows the power of the canine, but it was palpable. (Ant)

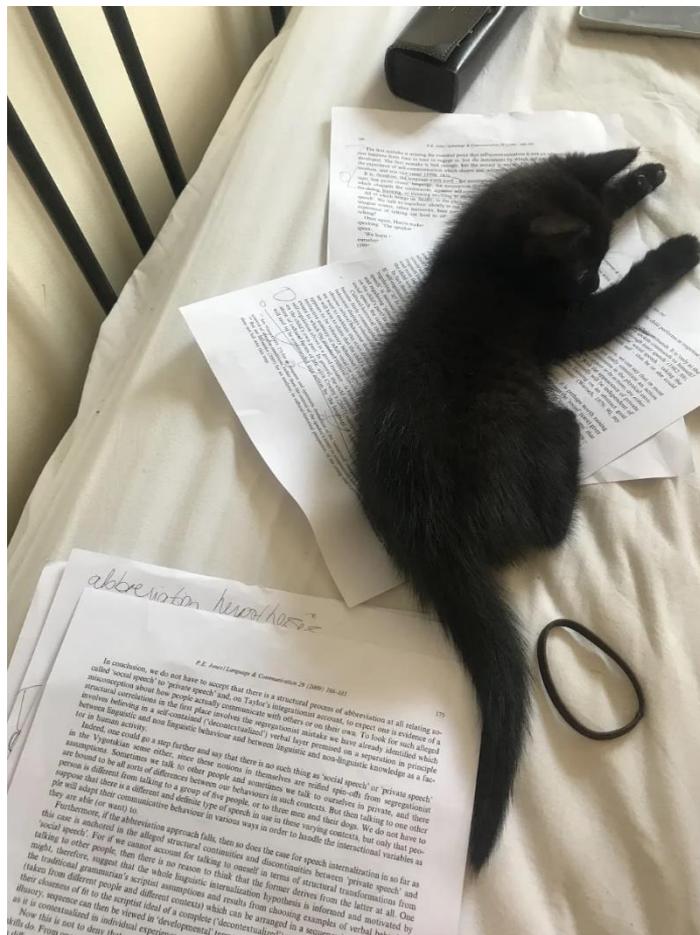


Figure 4.11: A Cat-Work-Bed Assemblage

Participants explored the way in which animals influence and disrupt (both positively and negatively) their working practices and what thinking shifts occurred when attention was paid to the way in which we intra-act with them. For Mint, noticing the constant presence of a crow while she was gardening made her reflect on the role of trust and proximity in teacher-student

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relationships. Lily noted the embodied way in which animals learn and communicate:

[Animals] teach me about embodied learning: shaking things off, running from, growling, approaching sideways curiously. What does a dog learn when it sniffs a bum? Is it better learning than from a text book?

#### **4.4.3 Materiality**

A number of participants commented on the affective nature of learning environments. Windows and light were noted as being particularly powerful in terms of emotive responses:

When I think about the material things that affected me there, what I remember and feel first of all is the light and the breeze coming through the open windows. There was a particular freshness to it (probably due to the building's location) and the high ceilings had a big impact too. The air brought in new-ness every time (and potentia energy perhaps?)  
(Cherry)

This comment highlighted the power of affective spaces on the teacher-body and the often-overlooked impact of the natural environment on classroom situations. For Lotus, a reconsideration of the role of light and space revealed an interesting insight about student reactions to physical spaces too:

...we now have a new building that is dedicated to adult education actually and this has been a decade or more dream and we finally got it. And I can't tell you the difference it's making, almost more to the staff than the students of the intangible positive impact that spacing has;

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clean paint, nice chairs, lighting and all this stuff....for me before it was about students having an identity and a space but the assemblages has made me think about that more. And, yeah... now we're weeks in and they're talking about it.' (Interview transcript).

In a diffractive move, Lily used the poet Philip Larkin's words to reflect on her own relationship to windows and the freeing liberating nature of light within a classroom:

...And immediately

Rather than words comes the thought of high windows:

The sun-comprehending glass,

And beyond it, the deep blue air, that shows

Nothing, and is nowhere, and is endless.

(High Windows, 1974).

Space, light and air suggested movement which for the participants in some way reflected the flows of thought and creation of new knowledges in their teaching. As classrooms are often seen as closed systems, almost hermetically sealed off from the outside world, this was an important reminder of the permeability and entanglement of the human body. For Ant, the environment of 'false ceilings and strip lighting' in his corporate and regulated Further Education classroom had led him to increasingly work in outside spaces:

...where things have been best is outdoor lectures, days out, psycho-geography as a justification for wandering...Being out was brilliant, being

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taught about a life elsewhere while being elsewhere was powerful and exciting. We ended with food, the cafe was filled with smiles, chatter, enthusiastic discussions and all of us - including customers, cafe staff, our group, me, for 45 minutes or so, felt different.



*Fig 4.12: Light on Education*

Lotus noticed the impact of the different elements which comprised her working assemblages:

Thinking about my office where I both work and learn and support others learning now in a different way. The things I like about it - these components- the things I don't like and how that affects me. My bed is a site of learning. I'm laying here now in my bed. Never thought before about the bed and what's around me as " agents that shape my

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experience”. The dog is by my side too. “Vibrant matter and lively things”  
“following the flow of matter”.

The idea of beds and other material sites of learning returned us to the idea of ‘undercommons’ and the way in which learning does not only happen in classrooms. The influence of materials, space and locality - and the significance of named and unnamed spaces - continued to resonate across each project phase.

#### **4.4.4 Embodiment**

Through discussion of animals, affective states and sensory experiences of learning, participants brought the body back in to their reflections on teaching and learning. This alternative epistemological focus presented a challenge to the Cartesian mind-body dualisms present in Western educational systems. Mint noted the lack of focus on senses such as touch, in a world that is fiercely material:

What are those objects which form peripatetic assemblages before we reach the safety of our standard hierarchies? And what of touch? What of the haptic knowledge of moquette, the feel of a leaf (and smell of plucked herb), the closed box of car leather, nylon blazer pockets.

#### **Interlude: Embodied Learning in the Recovery Classroom (Lily)**

“So ... one of the things I’d like to do more of in the classroom...and something like living with anxiety sort of lends itself to that...walk around the therapeutic garden and pick a plant or...a flower or something that speaks to us in some way and then come back and talk about it, you know, whether...its smell, look, you know it might be something edible...”

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...also we do things about shaking, animals you know they return to homeostasis when they are frightened they shake and I stand and shake and I ask my students to shake and they... all look at me like, very much like they are not anxious to do that and we do kind of postural feedback which is a little bit debunked but it's still worth people having a go at and...something else that we do that I can't remember...oh shouting. Sometimes we just make a noise, see how it feels...that's somewhere I'd like to go more...

...there's this German word which is 'sitzfleisch' that seat/meet which is the idea that we sit in a...class or...sit and endure, we sit on our bums and we sit and listen and we do something with post-it notes or something...oh you know I feel quite antithetical to the idea of people having a sitzfleisch, you know, experience in the classroom but whenever you go in a classroom you know there they are, there's seats, everybody sits down and it's hard to get them up again...

...that's definitely come into my thinking, the amount of learning we can do *not* in the classroom, for something like anxiety again, we take people sailing, so for them to practice, apply the theory...they are travelling with people they don't know, going with someone they don't know...they don't know what to wear, they are going on the water – so actually confronting some of those feelings and practising some of the [recovery] strategies makes a lot more sense, so...I've kind of come to the point now I think 'so why do we sit in the classroom – (laughs) that's just stupid! and the other thing is the COOC and doing this posthuman thing with you I could be sitting in bed or lying in bed and I thought, well actually I've probably learnt a lot more like that than I would ever have done struggling in an institution, in a room, being told I didn't understand it, or misunderstood it or something. So I think that kinda idea of mass education...as I get older I kind of like – it's a tricky one – because my background was in adult education, in outreach, in community learning OUT in communities, so I've taught at all kinds of places – but yet still *chairs*.

*Lily (interview transcript)*

*Table 4.13: Reflective Interlude #3*

#### **4.5 Phase 4 – Towards Posthuman Education**

*Posthuman Education...exemplifies a notion of teaching and learning as a multidimensional dialogue: accommodating the diverse languages of communication and creating spaces for the creation of new knowledge in, through and across the terrain of the unknown.*

*(A Becoming-Manifesto for Posthuman Education).*

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This final month of the project provided an opportunity to draw threads and themes together. In this phase we reflected on the thinking generated and began to look forward to implications for our future teaching practice. Two further Deleuzian themes were introduced as we considered the pedagogical influence of the research-creation process; 'Becoming Cosmic-Artisan' and 'Becoming Minoritarian.' These were discussed in the COOC and are used here as a tool through which to read the data in relation to the second research question:

What motivates educators to act in ways which may be considered 'posthuman'?

#### **4.5.1 Cosmic Artisans**

The concept of cosmic artisan emerged through the project and was used increasingly as an emblem to represent the research-creation process and how it could form a key role within posthuman education.

Much like an 'atelierista' in arts education, an artisan, for Deleuze and Guattari, is someone who is 'determined to follow the flow of matter' (Deleuze and Guattari, 1987, p.345) where the matter, or material itself intra-acts with the creator too; very much in the way that our data/phacts were entwined with and informed by our discussions and shared thinking. By harnessing and connecting with a range of forces (potentia power; that is natural, relational, communal power outside formal structures) the artisan becomes 'cosmic'. As Sholtz (2015, p.36) describes them, 'Cosmic Artisans exist at the limit, are fabulators in the sense that they actualise lines of flight, potentials that exist immanently, virtually, intensively.' This actualising, enacting and elucidating

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lines of flight became an established practice as participants moved through the project while also living their daily lives as educators. Although I hadn't planned to introduce this as one of the conceptual frames, it proved to be helpful as a way to understand the role of art and creativity in all aspects of educational practice and was discussed in both the interviews and discussions forums.

#### **4.5.2 Edu-Crafts**

During phase 3, participants were asked to devise a creative experiment which in some way disrupted the usual passage of a teaching curriculum. Taking the notion of cosmic artisans 'following the flow of matter', Peony described an object-orientated method of learning in which 'things' are introduced as a stimulus to creativity:

Rather than starting with a blank sheet of paper, it can be stimulating to begin projects with what seem random objects or images...a £1 coin, poster, found photograph, pork pie, whatever. These are of course never neutral and the responses are dependent upon our unspoken relationships with these objects. Exchange is central to the creative act and finding methods and strategies to promote exchange is surely at the core of all human beings.

Creation = collaboration = creation

Introducing external stimuli into the classroom / studio / lecture hall, will certainly heighten awareness and keep students awake to new ways of thinking / looking if they are prepared to engage! As previously stated by

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Ant, being able to pierce the focus on grades and ownership enables curiosity and open-mindedness to flourish.

For Ant, a disruptive experiment involved a concept he subsequently named 'TEITIUC' (Take Every Idea To Its Ultimate Conclusion'). In this instance an idea or activity is pushed in as many directions as possible, with students 're-mixing', altering or building on each other's ideas. This process was a way of pushing back against academic constraints of plagiarism, individual grading and the monetisation of learning.

Mint's experiment again related to challenging and transforming normative behaviours which often dominate but are unquestioned:

I think my edu-craft activity would be a response to the 'shouty voices' - the dominant voices that claim to speak for all but in fact are using positions of power to push through agendas. How often have you sat in edu meetings where the quieter voices (often the deeper thinkers) are spoken 'for' and aren't given the chance to speak?....So, my edu-craft would be to ask people to speak through voice-changers - this 'change' of voice (perhaps to patois or to a child's voice, or to something silly) might prevent the dominant accents and patterns being the ones that 'command' respect and let other voices be heard (and it might also be quite fun).

Rose's edu-craft was based around the 'agency of things'; an activity where her ESOL students brought in objects for a 'show and tell' activity about their homes and heritage:

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‘[Using objects]...was an amazing opportunity to empower them I guess and give them some agency ...today a woman showed a drawing that her daughter gave her, it was her daughter’s first piece of writing in her own name, and she just kind of gave a little presentation about it...people just shared pictures from their holiday, jewellery that had been passed down for generations, anything really.

Employing creative experiments in this way allowed participants to explore material intra-actions between humans and ‘things’ in order to put ‘...bodies, things and concepts in motion’ (Taylor, in Taylor and Hughes, 2016, p.20). As an act of affirmative ethics, ‘edu-crafting’ both defamiliarises (renders the everyday hegemonic ways of being strange) and elevates ‘minor’ thinking; rendering their imaginative pedagogic endeavours both impersonal and communal.

#### **4.5.3 Research-as-Learning**

*‘[These are] the kind of conversations that let us un-fix as well as fix...’ (Lily).*

During this phase, participants started to reflect back on the research-creation process and its role as not only a knowledge-generating activity but a pedagogical one. Mint questioned the way in which traditional research methods often led us to re-trace ideas that were already on the map, and suggested that it can be helpful to focus more on process:

I get that the whole idea of 're-imagining' is rooted in an original imagining. I think (I am never sure tho) that we maybe need to just start things in the middle sometimes, write down rather than across, subvert

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a fixed narrative beginning-end pattern that we're very used to? Think paradigmatically rather than syntagmatically? Think metaphor or music or free-draw and see where that leads? Know that the traditional narrative of 'history' and 'time' has been hijacked by too many external cultural forces and that we have to work within that but also have a potential which works vertically through?

So, in that world, we don't recognise the binary of digital/physical and we don't see current FE as the beginning; instead we frame FE as a multiplicitous, multiple & concurrent set of voices that cross over each other unpatterned through random moments, and when, by kismet/happy chance/ they do so in enough force they have a possibility of making meanings which are different?

Less narrative pattern, more chaos/chance/individual being not-collective?

For Lotus, there was power in the articulation process of research-creation; whereby the mobility of concepts could be put to work in a practical way:

The practical implications of our explorations this month is that this dialogue - and the notion of post-humanist edu - affords me an articulation (beyond informal or less-formal learning) of a potentially powerful type of learning that I can talk about with my students. And it gives a name to something but doesn't fix, which is possibly the best thing - and it breaks away from ideas of 'tacit' learning which aren't always helpful and have particular cultural connotations.' (Jenny)

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Mint reminded us of the usual emphasis on the written word in research practice, and reflected on the role of sensory methods of perception and knowledge-making:

My questions would be about how these ideas exist in a kind of imagined embodied outside of language/words - outside a narrative paragraph?

What do they feel like when they are touched, what is their mouth-feel, what do they smell like? And (if we use the power of words to explore beyond) what colour is their smell, their feel? What do they sound like? What colour do they sound like? How do we, as you say, create from chaos - in a non-binary way. I think the power is all about unschooling and enabling a different kind of imaginary - maybe? What does Brexit smell of, what does your real and imagined Portugal smell of?

...for a start, we maybe need to use language a bit less safely in the imaginary and push it a bit?

This emphasis on alternative ways of knowing and being was both explored and enacted in the research-creation process itself; this onto-epistemological act, and its implications, will be discussed further in chapter 5.

#### **4.6 Becoming-Minoritarian**

*Posthuman education...creates spaces where a learner can be outside themselves, be inside themselves, be something else, be outside, be inside, be elsewhere but there, be not themselves, be not a self at all but something and nothing all at the same time. Where a learner feels the learning somewhere along the pain to joy spectrum but sees the neurons fire either way; where the*

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*trees speak and the earth groans and the machines and the selves hear and listen to the wisdom of all of it and everything that is and sometimes is not. Has no beginning nor end but an infinite number of possibilities beyond common-sense thinking... (A Becoming-Manifesto for Posthuman Education).*

In the final weeks of the project we addressed the issue of *why* certain educators choose to work in ways that might be rhizomatic, nomadic, affective, or act as collectives within ‘closed systems’ which do not encourage these ways of being educators. Alongside the general forum discussions, this took the form of four semi-structured interviews with participants who expressed interest in a follow-up discussion (Lotus, Lily, Rose and Mint).

#### **4.6.1 Interview Findings**

The interviewees were asked two questions relating to motivation. The first explored the reasons for their interest and involvement in posthuman education practices and principles. The second prompted participants to further reflect on where they believed these motivations had emanated from. The following themes emerged:

- Motivation stemmed from studying and learning as ‘a way of being’; demonstrated through an ongoing curiosity in analysing own practice, sharing new pedagogic knowledge and forming communities of practice (outside of formal work professional development) (Lotus, Lily and Rose)
- Participants had a sense of being ‘different’ in some way; feeling on the outside (for some, due to named neurodiversities such as ADHD,

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dyslexia; for others, not fitting in due to issues of class or other non-dominant identity) (Rose, Lily and Lotus)

- There was a further connection to overriding social justice aims, connected to a desire on a macro level for global change, or on a micro level to offer positive experiences to their own students which some way remediated their own school experience. (Rose and Mint).

Putting the Deleuzian concept of ‘becoming minoritarian’ to work here revealed the ways in which identifying positively as being different, outside the system, or keen to work in relational ways (counter to hegemonic practices) are political acts. Becoming-minoritarian is not about quantity, but instead a process of ‘becoming-with’ with the missing and unheard within formal educational spaces. This subversion of dominant positions was revealed through Mint’s reflections:

For me I think it’s [my motivation] because we work in an environment that’s failing forward, a political environment and we need to find alternatives and if we aren’t active about seeking alternatives we are complicit with an agenda that is largely, I think, failing on a global level.  
(interview transcript)

The phrase ‘outside’ recurred in a number of comments; evoking again Moten and Harney’s idea of fugacity and undercommons:

‘It keeps me doing the things that are **outside of the boxes.**’ (Lotus, my emphasis)

I’m probably the one who is pretty much **always outside the box** but there’s a value to that for everyone else because I do see things from a different angle’ (Lily, my emphasis)

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I mean sometimes my job makes me think in a bullet point list and I don't want to end up being the kind of person who makes a bullet point list. It's really really important that you can have **somewhere to go** where you can think differently. (Mint, my emphasis)

Lily paraphrased her reading of 'becoming-minoritarian' as the idea that '...those who disrupt the system are the young, the women and the mad'. Using the analogy of 'being outside the camp' demonstrated the complexity of belonging and her desire to legitimise minor identities and forge communities in informal spaces:

'...there isn't that sense for me that I'm trying to create a camp outside because I'm quite solitary, quite introverted...you sort of feel sometimes outside of the camp and you don't always want to be in the camp and all of those kind of things. The draw of the institution is massive for the people that I tend to spend my time with so although...something I might say will resonate with them, at the end of the day they will go back to the place with the walls and the fortress and the rules and they know what that looks like and I'll be out there with my little fire and my stick and a marshmallow.'

For Rose, the motivation to teach differently was connected to an ongoing desire for knowledge:

So, also literacy has kind of been my passion because that's always been connected with being able to access knowledge...so through studying I have kind of tried the things that I've been taught about and I've found that it actually really works, it's really helped me build

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relationships with the students or something. I've just tried a method or technique that really worked and I was excited about it so I guess that's what motivated me, I wanted them to kind of have a good experience... I guess it's an affirmation I guess in a way. You read something in an academic text and think, 'yes, oh yes! I was right all along!'

And throughout the interviews, a desire for relationality and connection in educational spaces (either formal or informal) recurred:

It's a drive to make connections with people and learn from other people.  
(Lotus)

So I just kind of, just try to really, just make them [my students] feel the way I would want my children to feel at school. Yeah because I would hate for my children to be mistreated at school so I kind of try not to do that to my students. (Rose)

#### **4.7 Summary**

This analysis, driven through encounters with visual, written and interview data has identified a number of themes in relation to the two overarching research questions. In terms of understandings of posthuman education, these data-encounters have revealed:

- An emphasis on diffraction/interdisciplinarity, affect and embodiment
- The importance of power and 'fugacity' in mapping teacher subjectivities
- A central role for neurodiversity and 'minor' thinking in education
- The prioritisation of process over content in alternative pedagogic practice.

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Research-Creation as a method has also emerged as an empowering tool for the creation of new conceptualisations and articulations of educational knowledge.

In the next chapter I will discuss the significance of these findings in relation to the literature, and for education more generally, in terms of new contribution to knowledge.

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## Chapter 5: So what *does* a Posthuman Curriculum look like?

### Refrain #5

*'It's... the shift away from certainty and into less safe places. The concept of actual and virtual, the exchange, the birth of the actual found in the nebula of the virtual is how I see things, how 'newness' enters the world. But always constrained. I cannot go into the discussions of reimagining or recreating or rethinking things without knowing that straight away we begin with the real and seek a virtual, a new, afterwards. If we reimagine FE, for instance, we must start with FE as the beginning. That makes sense, especially if we involve large numbers of people - it is the real, the existent in terms of concept, language, structure that we can share and use as a lingua franca. Already the reimagination is rooted in the actual, and the alternative is to try and find newness that has no taste, feel, touch. Is that possible? what is the relationship between actual and virtual?' (Ant)*

### 5.1 Introduction

This thesis explored the idea of a posthuman curriculum, whilst at the same time taking participants (and myself) on a learning journey of our own. In doing so, we have proposed many ideas of what a posthuman curriculum could be, whilst acknowledging that these ideas can only ever be partial and contextual; there are only the conscious re-readings and re-enactments of teaching and learning, read through frames which counteract long embedded hegemonic views of what education is, and could be. In this project, these re-enactments have come via art, dialogue, a return to the body, a conscious application of

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philosophical concepts and a willingness to take a leap into uncharted territories. They are personal and situated; articulated through a series of values-based intentions, only what can be done in our own educational environments, from day to day.

In this way, the notion of curriculum itself, in any sense (whether 'posthuman' or not), as a linear 'course' with fixed inputs and endpoints has been disrupted by our experiments and discussions. Even for those participants involved in delivering formal curricula, this troubling of material, human, and epistemological boundaries broke our thinking free from the curriculum box, forcing us to consider instead the wider intra-actions of learning subjects who are not discrete units, but embodied and distributed agents, located within wider shifting and emerging assemblages. This shift suggests then, that the curriculum was always *already* posthuman; and what this project has done is 'put water on the web' to reveal this and offer ways to extend or work with these understandings. To borrow from Braidotti (2013), we cannot say, with any degree of certainty, that our curriculum has always been a human one, or that it is only that. What participants have done is to shine a posthuman light on their practice, to reveal, not what curriculum *is*, but what it *does*, and what it has the potential to do, should we choose to look at it differently. By using a posthuman lens to help us to re-imagine what curriculum is, does and can be, we have worked in pre-figurative spaces (Suissa, 2014), experimenting with small creative practices which demonstrate alternative understandings of teaching and learning, existing both within and without formal education systems. We have resisted the binary idea of an imperfect present and an

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utopian world to come, seeking ways to both illuminate that which has been ignored or overlooked in the here and now, and exploring practices which may lead us to new enactments of curriculum in the future; as processes, not as end products.

This project has thus revealed a number of ways in which teachers can rethink and recreate both the practical daily experiences of teaching and their understandings of it; 'rooted in the actual', as Ant puts it. The extent to which these ideas can be embraced or enacted will naturally depend on the position of the educator within a formal or assessed curriculum; and on their potential for undertaking creative educational practice. However, the processes of 'noticing' and elucidating 'other-than-human' affects within classroom teaching can offer new insights which may allow teachers of all kinds to take affirmative action for educational change.

This chapter firstly summarises the key features of posthuman curricular thinking revealed through this thesis. It then goes on to explore other key emergences discussed by participants and the implications for working in new and different ways. Thoughts on methodology, limitations and implications of the study are expressed along with recommendations for future activity.

## **5.2 Discussion**

### **5.2.1 Curriculum after 'Man'**

Our explorations of curriculum troubled the idea of normative education subjects; the '...child of man: a Western bourgeois model that takes as its referent the white middle-class child, a not-quite-human being that is made

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human as it is subject to particular forms of power – surveillance, measurement and ranking along a scale of development, the zenith of which is Man himself.’ (Kromidas, 2019, p.68).

By paying attention to more-than-human elements, and moving beyond the idea of Western standards of humanity, six key features of posthuman curriculum emerged in the findings of this thesis: rhizomatic, affective, fugitive, diffractive, minoritarian and creative. Some of these were pre-empted via the Deleuzian concepts introduced to participants at the outset; others emerged via dialogues and artistic responses to the provocations, or from suggestions made in the *Becoming-Manifesto*. I will explore each in turn.

### ***Rhizomatic***

To one degree or another, curriculum is always opening outwards with different entry and exit points. This recognises that learning does not only happen in fixed dimensions of space or time, but can be enacted in spaces of informality, serendipity or ‘undercommons’ (Moten and Harney, 2013). A rhizomatic approach suggests that separations, such as those between home and work life, are artificial as the world does not exist of discrete, isolated objects; and realising that we are all part of multiplicities exposes complexity within our social systems, as in our ecological habitats. As participants thought ‘with’ the rhizome in phase one of the project, they revealed through their dialogues and creations that learning was not in fact limited to the classroom, but stretched beyond its walls. For themselves, as for their students, learning was found to be an emergent, non-linear process that may take place in spaces outside the remit of the organisation. Identifying spaces of ‘undercommons’ such as

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smoking areas, corridors, buses, kitchens, bedrooms and cafes as sites of teaching and learning allowed rhizomatic understandings of the 'community as the curriculum' (Cormier, 2008), showing us where and when learning spills out into informal spaces.

### ***Affective***

By noticing embodied physicalities, and the relational way in which humans learn together, participants brought the body (and not just the human 'body either) into conversations about teaching and learning. This demonstrated the way in which articulating these moments of affect, and what they do, can help educators to understand their positionality and the way in which education is not a purely human endeavour. A new-found respect for bodily understandings and reactions to place and space challenges Cartesian-binaries which may lead us to overlook or ignore affective relations; and the agency offered by this noticing - not only for ourselves, but for others is empowering. In this way, educators become 'response-able' (Haraway, 2018); open to new connections and possibilities within an ethic of care.

### ***Diffraction***

This project revealed a central role for heritage, history, and memory; participants' conversations and creations demonstrated that these personal and shared traditions cannot be split out of the educational process. At each phase of the project participants introduced stories, books, poetry and fables from their own families and childhoods. Through this process they found that interdisciplinarity, and reading things through other things, can lead to new insights; offering further challenge to the siloed nature of state education systems. In a similar way, thinking about education philosophically often

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invokes memories of our childhood experiences; memory thus becoming a generative process which is naturally entangled with and creates new events and understandings (Fox and Alldred, 2019, p.25).

### ***Fugitive***

Lines of flight - where educators and students divert from planned learning pathways, are always present to one degree or another, in physical and virtual learning spaces alike. Noticing and elucidating these can be a form of resistance; a deterritorialisation (Deleuze and Guattari, 1987) which disrupts fixed elements of a system, causing it to mutate in some way, even if there will be an eventual re-capture by hegemonic educational processes. When participants began to heighten their attention in this direction, they gained further insight into the various components that comprise their teaching assemblages and the different aspects of power (potestas or potential) that were either restricting or enhancing their ability to act.

### ***Minoritarian***

In a posthuman curriculum difference is appreciated *in and for itself*, rather than viewed as deficit. Curriculum practice avoids the universal, normative modes of teaching and adopts process-led activity, grounded in care of individuals and elevation of different modes of being and generating knowledge.

There is a central role for neurodiversity; not only for students but for teachers too. In the interviews in particular, but also during discussion forums, participants noticed their own neuro-atypicality and the way in which this made

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them feel 'different' or outside the system, to varying degrees. Practical moves to reframe inclusion policies and disrupt ideas of the 'normative' child form a key role within a posthuman curriculum.

### ***Creative***

Pedagogic experiments include artistic responses of all kinds via relational and community creative activities. Educators here became 'cosmic artisans' (Deleuze and Guattari, 1994, p.180); fabricating and fabulating new learning events. The range of 'edu-crafts' (Taylor, 2016) designed and undertaken by participants in the third phase of this project demonstrated the way in which transdisciplinary art practices not only teach different kinds of knowledge, but also instigate joy and community.

These six features provide an initial route into ideas of a posthuman curriculum, leaving scope for further elaboration and exploration depending on context.

### **5.2.2 Research-as-Learning**

The process of research creation, employed as a methodology for this project, has offered an alternative means for educators to explore their practice, employing art, dialogue and philosophy to interrogate teaching and learning differently. Evoking the role of the 'pedagogista'; a educational provocateur who works with teachers in the Reggio Emilia schools, my role here was to facilitate a space in which teachers could think, not about pre-existing research or techniques as in typical continuous professional development (CPD) practice, but in a way that re-imagines and allows new educational concepts to form. It is unusual to find any teacher CPD that works with philosophy as method; rather than critical inquiry, it is more often a set of 'how to's and should's' (Hardy, 2008,

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p.279) or 'centrally staged events' (Dye et al, 2010). Opportunities are thus presented here to engage existing educators differently, embracing the role of 'cosmic artisan'; bringing thinking and art together in diffractive ways.

Employing philosophical concepts which are not specifically education-related proved a useful lever for the consideration of existing and potential teaching practice. This process spread rhizomatically in itself, as participants began to use the same processes to work with their peers and students. As Mint stated, using this process of '...opening concepts up to multiplicitous understandings' via artistic provocations allowed her to use similar practices with her own students and colleagues at work:

It's a tangible...bodied thing that everybody can do without looking stupid. Anybody can post a picture of a plant without feeling like they're an idiot. It's such a good idea and that was really helpful. I've talked about them [the concepts] already at college - you know I had a group of graduates and I shared a bit of the course with them and what I was doing and they were really excited by it!

For Rose, this was a process of 'conscientization' (Freire, 1980) for the teachers she worked with :

They [the other teachers] were like, 'Oh they [students] don't look like they are learning anything, I can't see any learning'. So having learnt about the rhizome before, I kind of explained the concept to them and I said, 'Sometimes you know learning doesn't just happen when you expect it to; it might happen at a later time, this is what learning actually looks like.'

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And for Lotus, working with the concepts provided a lever to further changes in working practice within her organisation:

I was always, have always, found or looked for teaching spaces which might be called 'rhizomatic' with students but post-humanist and ideas of 'diffractive' learning (found through others') offer a way to explore/write these. And my students thought that these types of spaces will be important to our learning programmes as we move forwards.

The process of research-creation was also found to be enjoyable and thought-provoking, and in a time of limited motivation, energy and resources, this factor is significant in itself. As Mint stated:

The Padlet (sites) were always great and I'd say that starting with 'Post-a-Plant' [the initial rhizome activity] was just so lovely, it was like a bloody bring and buy sale and we'd just have our plants...It's a brilliant way to explore it in a really low stakes way because... I don't know the theory but that helps...

For Lotus, there was a similar sense of joy and discovery:

We all have to think differently...I mean sometimes my job makes me think in a bullet point list and I don't want to end up being the kind of person who makes a bullet point list. It's really important that you can have somewhere to go where you can think differently.

Lily commented on the playful nature of the processes, particularly the diffractive elements whereby poetry was used as another lens to understand concepts. This permission to bring personal histories, artefacts and resources together with theory in order to create new ideas troubles the traditional binaries

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of 'old' and 'new' ideas in professional learning experiences, and offers alternative modes of exploring education together. It offers ideas for new forms of continuing professional development, where philosophy and creativity can be brought together to explore educational values, experiences and pedagogy in different ways.

In this way, 'research-as-creation' as a methodology can extend to, and incorporate 'research-as-learning'; a reflexive and provocative process of professional development similar to the Reggio Emilia methods employed by a pedagoga. This idea offers opportunities for existing teachers to research and learn differently and is expanded further in *Recommendations* below.

### **5.2.3 Motivation and drive**

The research question 'what motivates educators to work in ways that might be considered posthuman?' revealed a key role for neurodiversity and 'minor thinking' (Deleuze and Guattari, 1987). The concept of 'becoming-minoritarian' takes account of difference not as deficit, but as a productive force for the creation of new knowledges, and was particularly relevant for those educators who felt in some way that the normative nature of the education system excluded many teachers and students.

The much repeated refrain of participants that they felt somewhat 'different' from colleagues, or in some way 'outside' the organisation (due to various identifying factors) revealed a key motivation for working with posthuman thought. These differences were revealed in responses to time, the linear nature of curriculum, the role of the body, and relationships with organisational

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power. The figurations of power as elucidated by Spinoza (Ethics, V); potestas (power as usual) and potentia (affirmative, fluid and generative forms of power) were particularly helpful here for participants in analysing their relationships to political structures. Identifying ‘lines of flight’ which enabled them to break free of hegemonic systems (even if momentary) was an empowering tool and allowed them to give language to fleeting sensations of newness and freedom within a tightly scripted curriculum.

Other motivations centred around learning new knowledge and skills; not necessarily teaching and learning techniques, but related to praxis: the bringing of theory (in this case philosophy) and practice together, particularly in a collaborative and dialogic sense.

Understanding what motivates educators to work in ways which may be considered ‘posthuman’ has provided an insight into the kinds of professional development which may be helpful in furthering an idea of a posthuman curriculum; these considerations form an important part of the Recommendations below.

### **5.3 Implications**

In this thesis I have argued that education in the 21st century needs to be able to acknowledge complexity and teach for it, rather than against it. The current period of anthropocene (where the environment is changed irrevocably by human action) calls for education to be enacted in a different way; not as an activity that re-inforces the nature/culture split, but as a ‘worlding’ process whereby the imagined divide between individual and environment is troubled

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as man and nature are revealed to be relational and entangled (Gregg and Seigworth, 2010). The pedagogical and research methodologies employed in this study propose new modes of teaching and learning that not only recognise and ‘...broaden the category of who gets to be admitted to the powerful category of human’ (Bayley, 2018, p.4) but allow educators to encourage recognise, acknowledge and critique the status quo in productive ways. Moving away from linear pedagogy and curriculum is challenging within standardised and outcome-based education systems, but I have attempted to show here that it is possible to read education differently by paying attention to processes and phenomena usually overlooked in systems based around the idea of Cartesian dualism.

My contribution to the existing literature is to propose new modes of understanding education, rooted in posthuman philosophy and enacted in creative and dialogic ways. Working between high theory and daily practice, this thesis aims to fill the gap by offering practical experiments which allow educators to explore affordances offered by their current curricular activities, and insights to move education towards a new non-linear paradigm, more fitting for our complex times.

In a practical sense, this could be instigated by alternative forms of continuing professional development which offer education professionals the opportunity to discuss, create and research together, independently of organisations with their own competing interests. Using the Deleuzian concepts offers a new route in to conversations about power, professionalism, difference and creativity, and the opportunity to explore what a posthuman curriculum might look like within

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educators' own contexts. In this way it becomes CPD as 'critical educative practice' (Dye et al, 2010), allowing for deeper reflexivity and the possibility of new communities and collaborations.

## **5.4 Limitations**

### **5.4.1 Epistemological boundaries**

This study had the intention of putting certain philosophies to work, and is thus bounded by the limits of a particular epistemological starting point. Employing Deleuzian concepts resulted in a specific reading of education; a 'thinking through theory' (Mazzei and Jackson, 2012) that was specific and contextual. Employing other theoretical frames would inevitably have provided a different lens and ideas expressed in different ways. Participant Mint made this observation in response to a question about the effectiveness of the research process, noting both the benefits of the 'toolbox' nature of Deleuzian thought and the dangers of theoretical bias:

I think it's really hard because if you spent a long time with a theory you feel like you own it and that's kind of important and it's fair enough you know? Somebody who is a Deleuzian scholar you own that theory and you've made your own interpretation and you should be rightly proud of that. But can anybody own ideas? or are they fluid? And what happens if somebody with a completely different political aspect to you comes along with a completely different interpretation of something you think you own? So it's...it's really difficult I think to present theory to people in a way that says you know this is something for you to use - it's not a fixed truth. Deleuze is quite good for that, that's the whole point of... and

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he's so poetic and it's so completely ambiguous that I love that. You can kind of make anything of that, you can look into that and go, 'aw, I really...that's so wonderful'.

As such, this study has provided one reading of a possible multitude. In a longer programme of professional development, it would be interesting to explore other theoretical framings and to thus diffract ideas through alternative lenses. Further discussion of the philosophical and historical roots of theoretical framings may also help to maintain criticality, alongside interrogation of participants' (and researchers') own onto-epistemological biases and inclinations.

#### **5.4.2 Posthumanism – New Wine in Old Bottles?**

Whilst posthuman thinking may appear (as implied in this thesis) a novel and innovative way to view the world, it is important to reiterate that many of the ideas and concepts reflect ancient, non-Western and/or pre-Enlightenment ideals. Carrigan (2019) notes the expanse of neologisms emerging through the critical posthumanities and suggest that this 'conceptual creativity', instead of helping us to grasp changing realities, can instead form a barrier to grasping the complexities of our times. The use of concepts which may be inaccessible to many, along with the neo-liberal tinge of claims to newness and novelty, Carrigan suggests, is about 'keeping up' and injecting novelty into theory for novelty's sake.

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Given my desire to put posthumanism to work for the use of front-line educators, this critique is an important one. However I continue to think with Massumi in my employment of theory, by asking not whether it ‘works’ but ‘...what new thoughts does it make possible to think? What new emotions does it make possible to feel?’ (2011, p.8). Nevertheless, how I situate posthumanism as a navigational tool and how it is used and responded to will continue to be important considerations for my day-to-day work and future practice.

### **5.4.3 Participants**

The participants were drawn from a wide range of locations, political contexts and educational sectors and as such, it is hard to generalise about one area of teaching practice. Utilising a snowball method widened the sample to an extent, yet was still kept within a group who largely shared certain educational values and interests due to the nature of social media platforms. However, the study has revealed a number of commonalities from spaces as diverse as Early Years to adult recovery education. Issues of instrumentalism, surveillance, functionality, managerialism and mental distress were common features of the neo-liberal education systems from which participants were drawn. Future projects could aim to include educators from the other side of the traditional/progressive fence; involving those more sceptical, say, of postmodernist thinking would be challenging and offer a healthy provocation to the facilitator. My recent open learning project ‘From Pain to Knowledge: Reading Sociology through the Lens of Pandemic’ (#PainToKnowledge) involved students and community activists with no educational background, and

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offers one example of how posthuman ideas can be utilised in mainstream education practice.

#### **5.4.4 Whose concepts, whose knowledge?**

Throughout this thesis I have referenced Indigenous epistemologies, as these ways of understanding the world (as relational, inter-connected, complex etc) are echoed in both my initial rationale and the research findings. In an ongoing commitment to decolonising practice I have tried to avoid co-opting traditional worldly-knowings as 'new' discoveries or novel contributions to knowledge and this ethical position will continue to guide me in my future work. For example, the notion of 'affective pedagogies' is akin to the idea of 'learning spirit' spoken of by the Mi'kmaq First Nations people (Battiste, 2013); a long-articulated belief and understanding of the world. There is therefore an ethical imperative to turn to non-Western Indigenous ontologies, not via a process of 'cognitive colonialism', but with ethical hesitation and humility (Wu et al, 2018).

Participants were encouraged in Phase One of this project to make connections between rhizomes they were drawn to (eg naturally-occurring botanical/animal, or man-made digital and material), and their own cultures, histories and traditions. By paying attention to ancestry and the passing down of local and generational knowledge (as part of our explorations of education and our reactions to it) it is hoped that, rather than appropriating or fetishizing Indigenous knowledges, we can begin to make deeper and more meaningful connections with the myths, beliefs, customs and oral histories of our own communities. Regardless of participant identities, this can be seen as an opportunity for decolonial work; as hegemonic epistemologies are troubled and

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different forms of knowledge are promoted. As Yunkaporta states: 'The assistance people need is not in learning about Aboriginal Knowledge but in remembering their own'. (2019, p.163).

## **5.5 Further research activity**

This thesis offers a range of possibilities for future study and exploration. Firstly, the techniques and provocations used here as an act of research-creation could be put to work in teacher education, research and professional development programmes to offer a new lens through which to view education systems and practice. Related to this, my role within the project - both immersed in the activity, and apart from it - provokes ideas of new facilitation processes (similar to the Reggio-Emilia 'pedagogista') which could open up philosophical spaces for deeper contemplation of educational issues. Lastly, the six key features of posthuman curriculum thinking could be explored in greater depth in future research projects. I will go on to explore each of these recommendations in further detail.

### **5.5.1 Research-as-Learning: Professional Development 'otherwise'**

Drawing on Wallin's (2010) pedagogy of the concept, and the practices of research-creation used in this study, I suggest that there is a role for creative professional development practices for educators which put philosophy to work in a practical sense. These discussions and explorations strike at the very heart of what it means to be human in the 21st century; and test the engrained beliefs of Enlightenment thinking and their validity for our present times. New teachers currently learn primarily from mentors and colleagues in their schools; they are

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provided with reams of data and instructed on educational norms by peers; yet these are increasingly rooted in particular educational paradigms promoted and enforced via Academy trusts. A large amount of knowledge is also gleaned (but not necessarily articulated) from the non-human (atmosphere; position of cars in the car park; role of uniform; etc). Transdisciplinary development practices involving art, dialogue and engagement with posthuman philosophies can thus offer new insights and agency. For the significant number of educators disillusioned with the systems in which they operate, or feeling like an ‘outsider’ like participants of this study, posthumanism offers new modes of thinking and being; ‘...a diffractive lens through which to address some of the limitations that educators and pedagogues might find ourselves grappling with’ (Bayley, 2018, p.19).

As posthuman theory can be challenging, and high theory exclusionary (Strom, 2017), using art and dialogue to work with the concepts offers not only an accessible route in, but a pleasurable and collaborative alternative to the instrumental and individualising style of CPD often experienced across the education sector. Using a non-affiliated platform, such as a COOC, offers the opportunity for grassroots professional development initiatives which can also be taken into public social media spaces as acts of public scholarship and activism (Hill Collins, 2013).

### **5.5.2 Becoming-Pedagogista**

My role within this research project has been necessarily entangled with the projects and activities; as such it has been variously one of facilitator, provocateur and participant. I have evoked the role of ‘pedagogista’; drawn from

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the Reggio Emilia programme of anti-fascist schooling; ‘someone who is devoted to thinking about pedagogical possibilities’ (Vinitmilla, 2018, p.21). The pedagoga traditionally troubles and problematises engrained assumptions and ways of understanding education by ‘being-in-question’ and ‘putting-into-question’ (ibid., p.22), moving between educational centres in a role that works similarly in a procedural sense (but conceptually and ethically very differently) to a local government or Ofsted educational advisor. In order to develop professional practice as an act as research-as-learning, it is suggested that this facilitatory role is of interest and should be further explored to offer a counter-point to standard CPD processes of observation, leadership development, and coaching/mentoring which typically individualise and promote linear solutions to complex educational issues.

### **5.6 Follow-up activity**

Since this project began in 2018, a number of associated activities have been established by participants, drawing on the concepts introduced here. The ‘open’ nature of these projects - discussed on social media platforms as well as within the COOC - has meant that other educators have also learnt from and engaged with the concepts, leading to a wide engagement with posthuman ideas. Some examples of further work relating to this research include:

- ‘‘From Pain to Knowledge’; Reading Sociology through the Lens of Pandemic’ (an open online course which was created and facilitated by members of this project)
- A lunchtime college art group for staff and students, using similar artistic prompts to reflect on themes of belonging and community

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- Building elements of 'rhizomatic learning' into a college's Access and Participation Plan
  - Making posthuman education the subject of a Masters in relation to learning education and linguistics.

However, it is the ongoing connections between participants which is the most exciting element of this follow-up activity, and perhaps a testimony to the power of the methodology. Two participants have written a book chapter together, others are working in a project team for a new open-access journal, several others are developing the COOCs platform to enable more rhizomatic learning outside of formal education systems. It is of course difficult to say if these activities would have occurred regardless of the project; however the utilisation of Deleuzian concepts and language is a testament to the longevity of our philosophical approach.

### **5.7 Final Remarks**

In searching for an answer to a question, we have created new spaces for thinking and philosophising together, demonstrating how high theory can be rendered in ways that make it accessible and engaging for educators. Many of us already worked in ways that may be considered 'posthuman', due to differences in working practices, neurodivergent ways of being, and by having a willingness to be open to non-hegemonic ways of knowing the world. This project offers a method for thinking differently about education; elevating the non-human participants who are always already present, turning to difference as benefit rather than deficit, and becoming aware of opportunities to take lines

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of flight away from the status quo of learning and teaching towards new experiences and insights. Whilst the study does not lend itself to exact replication by dint of the creative and contextual methodology used, employing research-practice techniques in education can allow contextual and situated ways in which educators can own and appreciate their craft. This way of re-imagining what education can and should be offers opportunities to resist and reaffirm values and ethics in a time of significant global crisis. As Braidotti (2014, para.8) states:

We need to borrow the energy from the future to overturn the conditions of the present. It's called love of the world. We do it all the time, not perhaps in philosophy but in our daily lives. Picture what you don't have yet; anticipate what we want to become. We need to empower people to will, to want, to desire, a different world, to extract – to reterritorialize, indeed – from the misery of the present joyful, positive, affirmative relations and practices. Ethics will guide affirmative politics.

In a time of low-energy, where limited ideas of what it means to educate prevail, this notion of borrowing energy from the future requires us first to notice that in many ways, the future is already here. Donna Haraway calls us to 'stay with the trouble' and eschew the future, a process which requires us '...to be truly present, not as a vanishing pivot between awful or edenic pasts and apocalyptic or salvific futures, but as mortal critters entwined in myriad unfinished configurations of places, times, matters, meanings' (Haraway, 2016, p.1). Waiting for (educational) revolution which may never come is a trap which

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can lead to cynicism or capitulation; instead we need to focus on the unexpected collaborations that can be enacted in the here and now.

In this way, as we are all posthuman, so our curriculum can be too; if we just take a moment to pause together, reaffirm our ethical position, put theory to work, and jump on the lines of flight which re-ignite the joy of teaching and learning.

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## Appendix 1 –

### A Becoming-Manifesto for Posthuman Education

*Posthuman education....*

- *Has no beginning nor end but an infinite number of possibilities beyond common-sense thinking*
- *is immanent and always in a state of becoming*
- *exemplifies a notion of teaching and learning as a multidimensional dialogue: accommodating the diverse languages of communication and creating spaces for the creation of new knowledge in, through and across the terrain of the unknown.*
- *is a simultaneity of dynamic hopefulness within education with the added amplification of chance (love that my google name is anonymous dolphin for this contribution, too)*
- *when looking for problems to solve and finding solutions, Posthuman education looks beyond the narrow perspective of materialistic, intellectual and spiritual growth of humans and considers the impact of choices and actions at a whole system level; biosphere, species, social, cultural and technological. Seeing the nodes and the nature of the connections.*
- *uses multiple ways of measuring (academic, domain skills, capacity to learn & engage, environmental impact, cultural & social progress) to understand itself, while also recognising that relevance of any judgement has a brief use by date against an every dynamic world. Seeing itself through its connections to all otherness*
- *recognises that learners (of all ages) are no longer bound by their physicality. Posthuman education embraces technology that connect and immerse as an essential life space akin to the 'need for shelter' for the physical form. Technology is often seen as 'transformative' which still implies 'transforming' the analogue existence and the highest level of efficiency in the post-industrial model. Posthuman education recognises post-transformative technology because the distinction between learners analogue and digital world is an eroding paradigm.*

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- *recognises the importance of the health of the digital as much as the analogue environment and encourages the skills, knowledge and attitudes in its learners to propagate that health*
  - *acknowledges the codification and ownership of knowledge, skills & resources as a necessary step in the evolution of our species but seeks less impactful ways for humans to move forward*
  - *attempts to prepare learners for imaged futures rather than current conditions and paradigms*
  - *reminds us there is more than one way, there are 'other views' ways of thinking, other approaches and that otherness is good but othering is not so good!*
  - *thrives in environments that nurture connectedness and flourishes in 'uncontrolled' spaces.*
  - *presents a challenge to performative frameworks. This challenge is needed so that we do not fall silently into .....?*
  - *encourages many forms of not only expression but also ways of viewing the world and in championing and encouraging this, opens up new ways of seeing, removing the filters.*
  - *is not linear*
  - *is situated, contextual and goes beyond models*
  - *notices the body and embodiment within the teaching situation*
  - *challenges what knowledge and whose knowledge*
  - *allows for a unity of cognitive and affective processes*
  - *is an 'apprenticeship' in creating space for hope; thus, maintains freedom, lines of flight and vitality. It allows children a space where they are 'forever on the way' (Greene,1995 in Hikida in Bloome et al., 2019:207) and always ready enough (Bloome et al.,2019:207).*
  - *does not exclude student's (child's) agency and does not impose labels on students; therefore, it does not elide the student's possibility for finding their own language; 'the language of the hitherto unnamed sensations and feelings' (Miller,1997:185) -the language of affects that defy representation.*

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- *Rather than pathologizing or exploiting the student's 'tragic life stories' (Mycroft,2017), posthuman educators can 'apprentice' students in creating space for hope; thus, maintaining freedom, lines of flight and vitality. 'Hope is not a conviction that something will turn out well but the certainty that something makes sense, regardless of how it turns out' (Havel,2018). The phenomenon of hope can be performed through the apparatus of material-discursive intra-actions in the 'Thinking Environment' (Kline,2009).*
  - *Creates spaces where a learner can be outside themselves, be inside themselves, be something else, be outside, be inside, be elsewhere but there, be not themselves, be not a self at all but something and nothing all at the same time. Where a learner feels the learning somewhere along the pain to joy spectrum but sees the neurons fire either way; where the trees speak and the earth groans and the machines and the selves hear and listen to the wisdom of all of it and everything that is and sometimes is not.*

This document can be found at:

[https://docs.google.com/document/d/1ROy9ul2WxiaVTW8pj\\_-fLktq1XB4j1\\_b-6P2nDjXtu4/edit?usp=sharing](https://docs.google.com/document/d/1ROy9ul2WxiaVTW8pj_-fLktq1XB4j1_b-6P2nDjXtu4/edit?usp=sharing)

Version dated 6 January 2021.

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## **Appendix 2 – Participant Information**

The electronic version of this document can be found at:

<https://sites.google.com/view/explorposthumanparticipantinfo/home>

### **Exploring Posthuman Perspectives on Education**

I am a PhD student at Lancaster University and I would like to invite you to take part in a research study about education practice, new pedagogies and curriculum design. Please take time to read the following information carefully before you decide whether or not you wish to take part.

#### **What is the study about?**

This study aims to explore education practice that falls outside the often binary notions of 'traditional' or 'progressive'. It is grounded in the idea that we need new curriculum approaches for a world which is faced with challenges including climate change, mass migration, technological revolution and political upheaval. Educators are at the forefront of dealing with the reality of these challenges in their classrooms, and so may seek out new ways of educating which challenge the humanistic ideas of traditional teaching practice. Such ideas may reframe what we mean by knowledge, what relationships structure our learning, what roles non-human agents may have, etc.

In order to re-consider and re-imagine these ideas of education, this study will use creative approaches, dialogues and reflective practice. Please note that project is a participatory one, and as such ethical issues regarding the design of the study, the sharing of created artefacts and the dissemination of findings will be discussed with the participant group and reviewed on an ongoing basis.

#### **Why have I been invited?**

I have approached you because you have expressed an interest in new forms of education practice; are interested in posthuman thinking; are seeking more nuanced approaches to teaching; and/or would like time and space to reflect further on the issues faced by teachers today.

I would be very grateful if you would agree to take part in this study.

#### **What will I be asked to do if I take part?**

If you decided to take part, this would involve the following:

- Sign up to take part in a COOC (Community Open Online Course; similar to a MOOC) which begins in May 2019.
- Join in with the COOC activities which will be shaped by participants, and include art-based creative practice, reflective dialogues, blogs and reading.

Participants will also be invited to take part in optional semi-structured interviews to reflect on their involvement in the project. These will take place in autumn 2019 and will last approximately 45 minutes.

#### **What are the possible benefits from taking part?**

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If you take part in this study, your insights will contribute to understandings of new education practice and ways in which we can re-imagine education for the 21<sup>st</sup> century and beyond. As a participatory project, you will have a role in determining the design and outcomes of activities.

As this study is a creative project, you will be supported by experts who will help your creation of artefacts. It is anticipated that this creative endeavour will be enjoyable and productive; you are welcome to share and use your own creations in whatever way you please.

### **Do I have to take part?**

No. It's completely up to you to decide whether or not you take part in either the Community Open Online Course or the following interviews. Your participation is voluntary.

### **What if I change my mind?**

If you change your mind, you are free to withdraw at any time during your participation in this study. If you want to withdraw, please let me know, and I will extract any ideas or information (eg comments, artefacts) you contributed to the study. However, it is difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data. Therefore, you can only withdraw up to 6 weeks after the study begins. You will be reminded of this once the study has commenced.

### **What are the possible disadvantages and risks of taking part?**

Taking part will involve an investment of time. How much involvement you have in the COOC activities is up to you; however a minimum of one hour per month during the three month project would be appreciated.

### **Will my data be identifiable?**

During the COOC activities you will share ideas with myself and other participants. All participants will be asked to sign up to the COOC Code of Conduct on joining the project (please visit [www.cooocs.co.uk](http://www.cooocs.co.uk) for more information and to view the code of conduct). You will also be asked not to disclose information outside of the COOC and with anyone not involved in the COOC without the relevant person's express permission. The COOC is secured by an SSL certificate and you will be asked to create a log-in and password on sign-up to the site. Only you will have access to this information.

I will keep all personal information about you (e.g. your name and other information about you that can identify you) confidential, that is I will not share it with others. I will remove any personal information from the written record of your contribution. However, as the project is participatory, it may be that the group decides to share creative work outside the group, or to extend the project/commence other projects. The sharing of artefacts and any follow-up activities which take place within the public domain will be negotiated among participants.

### **How will we use the information you have shared with us and what will happen to the results of the research study?**

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I will use the information you have shared with me only in the following ways:

I will use it for research purposes only. This will include my PhD thesis and other publications, for example journal articles). I may also present the results of my study at academic conferences.

In writing up the project I will only use anonymised quotes (e.g. from my interview with you, or from postings on the COOC), so that although I will use your exact words, you cannot be identified in our publications. I may also request to reproduce some of the creative artefacts you share on the COOC. Where images of artefacts are shared, these will be attributed to you, if you request this.

### **How my data will be stored**

Your data will be stored in encrypted files (that is no-one other than me, the researcher will be able to access them) and on password-protected computers. I will keep data that can identify you separately from non-personal information (e.g. your views on a specific topic). In accordance with University guidelines, I will keep the data securely for a minimum of ten years.

### **What if I have a question or concern?**

If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact myself:

Kay Sidebottom

[K.Sidebottom@lancaster.ac.uk](mailto:K.Sidebottom@lancaster.ac.uk)

Or my supervisor:

Murat Oztok

[M.Oztok@lancaster.ac.uk](mailto:M.Oztok@lancaster.ac.uk)

If you have any concerns or complaints that you wish to discuss with a person who is not directly involved in the research, you can also contact:

Jo Warin

[J.Warin@lancaster.ac.uk](mailto:J.Warin@lancaster.ac.uk)

This study has been reviewed and approved by the Faculty of Arts and Social Sciences and Lancaster Management School's Research Ethics Committee.

**Thank you for considering your participation in this project.**

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## **Appendix 3 – Participant Consent Form**

The electronic version of this form can be found at:

<https://forms.gle/ioSU23BQEnjETZaF8>

I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within six weeks after I took part in the study, without giving any reason. If I withdraw within six weeks of taking part in the study my data will be removed.

I understand that as part the COOC activities I will take part in, my data is part of the ongoing conversation and cannot be destroyed. I understand that the researcher will try to disregard my views when analysing the shared data, but I am aware that this will not always be possible.

If I am participating in the COOC I understand that any information disclosed within the site remains confidential to the group, and I will not discuss specific activities with or in front of anyone who was not involved unless I have the relevant person's express permission.

I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and I will not be identifiable (unless I request this).

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I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.

I understand that any interviews or focus groups will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.

I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.

I agree to take part in the above study.

Name:.....

Email address:.....

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## **Appendix 4 - Project Reflection Prompts and Activities**

### **Part 1 Rhizome:**

Introductory video can be viewed at:

<https://spark.adobe.com/video/qYSklrRdcJjWn>

Activity 1: If you were a botanical rhizome, what kind would you be and why?  
(Post-a-picture exercise).

Activity 2: What implications does the metaphor have for thinking about how we teach and learn? (Discussions).

### **Part 2 Nomad War Machine:**

Introductory video can be viewed at:

<https://spark.adobe.com/video/fltHcYkOQdh43>

Activity 1: Draw, write or sketch what nomadic being means to you.

Activity 2: (Respond in any way you please) When you operate in a space of potestas how does that feel? What and where are the spaces of potentia for you? What lines of flight set you free from these striated spaces of bureaucratic constraint?

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### **Part 3 Posthuman Assemblages:**

Introductory video can be viewed at:

<https://spark.adobe.com/video/MNS8kbajfApWO>

Activity 1: What material objects, items or things impact on your teaching spaces? What might the impact be of changing one of these things, if only slightly? How do the various material elements interact with each other? (Post-a-picture exercise).

Activity 2: What role do non-human others such as animals play in your teaching assemblage? (Respond in whichever way you please).

Activity 3: What disruptive 'edu-craft' might you create to trouble teaching as normal? (Discussion).

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## Appendix 5 - Interview Schedule

1. What drives you to work in ways that you might consider to be 'posthuman'?
2. Where do you think the motivation to work in this way has come from?
3. How do the concepts [rhizome, assemblage, nomad war machine etc] manifest themselves in your educational practice?
4. Is there anything else you would like to share about your experience of taking part in this project?