Posthuman Literacy Practices in a Reggio-inspired South African school

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DECLARATION

I, the undersigned, hereby declare that this work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signature: Signed by candidate Date: 15 December 2020

Acknowledgements

While I am identified as the author of this dissertation, a glance through these pages will reveal scores of names other than my own. These names represent people whose ideas have had a profound impact on me; they have challenged me, confused me at times, brought clarity as I struggled with them, and opened up new worlds. In particular, I am indebted to Dr Candace Kuby and Tara Gutshall Rucker whose work in adopting a posthuman orientation to literacies has opened up a new way of thinking and doing for me, and for this I owe them my profound thanks. This dissertation is a work of what is in-between as I continually revisit, revise and rework these ideas, and in turn, as they rework me.

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Abstract

Posthuman literacy practices in a Reggio-inspired South African school

Through a posthuman approach to literacy education, I explore the Reggio Emilia pedagogy adopted by an independent South African primary school. Unlike the current emphasis in literacy pedagogy on language, standardised and individualised testing and universal curriculum approaches, Reggio Emilia pedagogy views child, learning and knowing not as separate from each other and from the world, but as entangled and always on the move. Moreover, Reggio Emilia-inspired schools celebrate the 'hundred languages' of children, not just the spoken or written word, and involve children in an emergent curriculum through pedagogical documentation.

In my study, pedagogical documentation (including photos and videos) also serves as research 'instrument' to co-create data and is analysed diffractively – drawing on feminist philosophers and scientists Donna Haraway and Karen Barad. The new theorypractice produced reconfigures literacy as an assemblage which includes human and nonhuman in an entangled, intra-acting becoming-together. This includes children, no longer understood as individual entities in the world, but as phenomena. My enquiry produces a rich entanglement of unexpected actors, including digital and non-digital technologies, discourses about literacy, questions of ethics and response-abilities, and many more.

The ethics of a posthumanist orientation to literacy education urges us to think about what is made to matter in a classroom and what is excluded from mattering. My research shows that children, rather than having agency as singular entities, are part of distributed agency in learning and as such are rendered capable as part of a complex, living system always in motion.

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Introduction

> *You do not choose a problem. Rather it is the other way around: it chooses you. Something in the world forces you to think.*
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> – Liselott Mariett Olsson, 2009, p. 189

My interest in how children learn to read is entangled with several threads in my life: falling in love with letters and words as a young child and reading everything I could get my hands on; dropping out of high school at the age of 16; and years later, experiencing the profound frustration of dyslexia through my youngest child as she struggled to find her way in a mainstream school, which in turn led to a shift in my career from classroom teacher to learning support therapist as I sought to help other children with similar struggles.

As a teenager I had become increasingly frustrated by what I experienced as a criminally myopic worldview and the prison-like flavour of schooling in the apartheid-era, 1980's education system in South Africa, frequently feeling that I learned more at the local library than in the classroom.[1] With my parents' encouragement I left school in Standard 8 (now Grade 10), completing matric the following year at what we disparagingly called a 'cram college'. My love of reading, together with my privileged position in a desperately unequal society, led to completing a Bachelor of Arts degree at the University of Cape Town, a law degree at the University of the Witwatersrand (Wits), several years of working in educational publishing in Johannesburg, followed by an Honours degree in Applied English (also at Wits). My interest in education led me to pursue certification as a Foundation Phase teacher when my own children

[1] I was immensely privileged to have access to a public library, unlike the majority of children in South Africa at the time, as access was restricted according to racial classification under the laws of the apartheid regime. However, the library was not the place of intellectual freedom I naively imagined it to be. Between 1950 and 1990, 26 000 books were banned under the Publications Act of 1974, enabling the apartheid government to "censor movies, plays, books and other creative work that challenged the notions of white, Anglo-Saxon Protestant supremacy in a heteronormative world ..." (Krige, N, 2018). https://www.news.uct.ac.za/article/-2018-09-25-unbanned-books-now-important-historical-artefacts

were young, and it was my experiences as a teacher and as a mother that eventually led to the research questions I explore in this enquiry.

Troubling taken-for-granted 'norms'

As a child/mother/teacher, I was troubled by what seemed to be an unrelenting emphasis on "taming, predicting, preparing, supervising and evaluating learning" (Dahlberg & Moss, 2009, p. viii). I was disturbed by the taken-for-granted views that I encountered within schools (and particularly staff rooms) and felt implicated by my silence or timid attempts to offer an alternative perspective. All too frequently, children were described in judgmental terms which left little room for enquiry.[2] They were "slow", or "distracted", sometimes even "impossible". The ideology of developmentalism[3] was evident in everything from learning outcomes to classroom management strategies to engagement with students. The relentless forward march of progress, every grade serving as a preparation for the next, bore down on the teachers, the children, and the learning support staff such as myself and profoundly shaped our practices and pedagogy.

The theories we have about children (and how they construct knowledge) have significant implications for how we teach and for how schools are structured:

> The image of the child is above all a cultural (and therefore social and political) convention that makes it possible to recognize (or not) certain qualities and potentials in children, and to construe expectations and contexts that give value to such qualities and potentials or, on the contrary, negate them. What we believe about children thus

[2] Loris Malaguzzi, founder of the Reggio Emilia pre-school system, advised a very different attitude: "Teachers must have a habit of questioning their certainties" (Malaguzzi, 2012, p. 46).

[3] Developmentalism assumes that normative adulthood, as defined by White, European males such as Piaget and Freud, is the goal of childhood. "Both cognitive and ethical/intersubjective development are constructed as unidirectional, and assume an endpoint from which the fully formed adult looks back, and toward which he brings children through childrearing and education" (Kennedy, 2006, pp. 99– 100). I discuss developmentalism in greater detail in Chapter 2.

> becomes a determining factor in defining their social and ethical identity, their rights and the educational contexts offered to them. (Rinaldi, 2006, p. 83)

If society configures the child as needing to conform to certain pre-defined expectations or 'norms', then those children who do not conform are labelled as deficit, as requiring therapy or medical support or other kinds of intervention to bring them 'up' to the standard. In this context, children who do not learn to read or write to a certain standard by a certain age are marginalised in the schooling system, and experience concomitant fear and shame and even self-hatred (Olsen, 2009). The school has become a "technology of normalization" of this experience (Dahlberg & Moss, 2005, p. 8).

In the early stages of working on this dissertation, teaching colleagues and friends assumed that my research was going to involve using diagnostic tools to measure the reading and writing abilities of children and in this way, ascertain whether they were becoming 'proficient in literacy' at my research site. However, after having routinely assessed children in this way for several years as part of my job, I had come to question the assumptions made about children and learning, assumptions which informed the rationale, design, and application of these diagnostic tools. My desire to find alternative ways of teaching literacy, ways which did not assume that children who 'struggled to keep up' were broken and needed fixing, is what motivated me to embark on this research journey. At first, I found it difficult to explain what I was hoping to discover/produce/achieve in my research. I experienced a desire for something different, compelling me into unknown territory, but it was difficult to put it into words. The dominance of the discourses[4] of normativity and developmentalism in education made it challenging to conceive of an approach that does not involve measuring children in a reductive and normalising way. After all, adults who work as educators were themselves "schooled" as children in a traditional, normalising approach to education. And so the assumptions that hold

[4] I have in mind Karen Barad's definition of discourse (drawing on Foucault): "Discourse is not what is said; it is that which constrains and enables what can be said" (2007, p. 146). Foucault's idea of disciplinary power (in contrast to sovereign power, or power *over*) viewed discourse as that which produces "truth and technologies of the self which constitute individuals as embodied social subjects" (Janks, 2010, p. 35).

the education system together seem to be perpetually recycled, from one generation to the next.

Candace Kuby and Tara Gutshall Rucker, whose ground-breaking research on literacy desirings became a significant inspiration in the direction my study took, articulate something of my struggle by saying that as early childhood educators, “we are fixing or remediating to meet the benchmarks adults set for children. In schools, teachers are interventionists as they sort, level and track students in ability groups to remediate to a pre-determined benchmark or standard” (Kuby & Rucker, 2020, p. 14). This kind of intervention, they say, “stems from a deficit perspective of children and that an ‘adult knows best’” (p. 14). Similar to my response in the staff room, “each time we hear that our job is to be an interventionist, we cringe” (p. 14). They ask, can we as teachers rethink or reclaim our role?

Hillevi Lenz Taguchi, one of the scholars whose work has also played a large role in helping me articulate a different way of thinking about teaching and education research, acknowledges that

> [i]t is difficult to let go of habits of thought and taken-for-granted ways of thinking and doing that make us feel safe. Developmental theories, universal standards and appropriate practice recommendations often make early childhood practice a highly striated space and seemingly coagulated or stagnant in its movements and repetitions. This is because it is built on structured and regulated habits of doing things and structured ways of thinking about what happens. (Lenz Taguchi, 2010, p. 100)

This dissertation does not propose a pedagogical model as a ‘one-size-fits-all’. Rather, it asks the question about what pedagogies might emerge when a different perspective is put to work, when child and learning and knowing are regarded not as separate from each other and from the world, but as entangled and co-constitutive (Haraway, 2016; Lenz Taguchi, 2010).

Poverty and privilege

Much thought and research has gone into answering the question of why extreme inequality continues to shape the daily lives of South Africans almost three decades after what for many was an enormously hopeful transition to democracy (for recent examples, see Spaull & Jansen, 2019; Christie, 2020). Pam Christie notes that "the dismantling of apartheid was uneasily achieved on the basis of tough negotiations" and that "the contradiction between political freedoms and limited economic and social change is evident in the continuing poverty, inequality, and unemployment inflected by race and gender … " (2020, p. 198). Regarding inequalities in the education system, one analysis suggests that neoliberal macroeconomic policies adopted as the country embraced democracy and came out of isolation in the 1990's "put a lid on education spending" and resulted in a "bi-modal system of public education … One system for parents who can top up the school budget and another (failing) system for those who can't" (Visagie et al., 2020; see also Christie, 2020, p. 200). In South Africa, recognised as the most unequal country on earth,[5] opting out of a crisis-ridden public education system is a choice available to a limited few.[6]

Spaull and Jansen (2019, p. 1) summarise the socio-economic landscape in South Africa in a paragraph worth quoting at length:

> There is a strong case to be made that the most powerful meta-narrative available in South Africa at the moment is of a two-tiered or dualistic society. While all countries face educational inequalities, particularly that of low and middle-income countries, the levels and patterns of inequality in South Africa are extreme and still

[5] Motala and Carel (2019, p. 67) note that "while there has been progress towards equity, equality and redress in post-apartheid South Africa, the reality … is that an estimated 48% of the population live on less than 2 US dollars a day, and that, at 0.67, the Gini coefficient is the highest in the world." The Gini coefficient is a single number aimed at measuring the degree of inequality in a population. The unemployment rate rose to 30.1% by March 2020 (Stats SA, Quarterly Labour Force Survey), and will have further increased due to the economic devastation caused by the Covid-19 lockdown.

[6] This statement should be read in the context of the rise of low-fee private schools, as reported on by the Centre for Development and Enterprise (2013).

> map onto the axes of apartheid oppression with uncanny regularity. The policy choices of the post-apartheid government, aided and abetted by the inertia of apartheid and the compromises of the negotiated settlement have resulted in two South Africa's co-existing within the same borders, poverty and privilege living side by side. [The group of people most impacted by poverty] is made up of largely Black and Coloured South Africans who own no assets and whose children are confined to low-quality no-fee schools.[7] (Spaull and Jansen, 2019, p. 1)

Although each child's right to education is enshrined in the Constitution, those children whose parents cannot pay school fees have few options but to attend no-fee government schools which are poorly resourced.[8] As regards the manner in which inequality manifests in a schooling system, South Africa is "a tragic petri dish illustrating how politics and policy interact with unequal starting conditions to perpetuate a system of poverty and privilege" (Spaull & Jansen, 2019, p. 2).

All this is said in order to situate my research within the context in South Africa: a radically unequal socio-economic-political system in which a child's access to a rich, meaningful education is determined by whether or not their parents have the means to buy it. South Africa's public school system is entangled with a multiplicity of socio-material threads of injustice that weave together to form chokeholds on the majority of children in this country. Some of these threads are: Hunger, with the majority of children arriving at school hungry and dependant on a daily meal provided by the state[9]; teachers who are underpaid, frequently under-trained, under-resourced and over-stretched; over-crowded classrooms; a lack of

[7] Note that quality in education is a fiercely contested topic, as evidenced by Dahlberg, Moss & Pence's seminal 2007 book, *Beyond Quality in Early Childhood Education and Care*. See also Peers, 2018, for a discussion about quality in education in the South African context.

[8] For more discussion on the impact of post-apartheid arrangements with regard to funding of schools, see Christie, 2020.

[9] This critical service was suspended for four months during the Covid-19 lockdown in 2020. Affidavits which formed part of evidence in court proceedings, when NGOs Equal Education and Section 27 sued the Department of Basic Education for the immediate reinstatement of the National School Nutrition Plan (NSNP), revealed the widespread hunger and malnutrition among the nine million children who depend on this service. See https://equaleducation.org.za/wp-content/uploads/2020/06/Applicants-Heads-of-Argument.pdf for more detail.

reading resources, particularly in children's home languages; textbooks and other basic resources going missing due to corruption and mismanagement[10]; a language policy which discriminates against the majority of learners whose home language is one of the nine official African languages but who have to switch to English as the language of learning and teaching in Grade 4, regardless of their proficiency in English (Abdulatief et al., 2018[11]); and facilities which are so wretched as to result in the death by drowning in school pit latrines by learners[12]. Non-profit organisations such as Equal Education and Section27 have taken the government to court numerous times over the past 20 years in order to secure implementation of these and other basic rights.

In this complex, sedimented, multi-layered and often fraught context, enrolment of their children in independent (i.e. private) schools, or fee-paying government schools (some of which are formerly "Model-C" or "White" schools) is a route chosen by parents or caregivers who can afford to pay the associated school fees. This route is largely inaccessible to parents who cannot afford to pay the fees.

I have chosen to focus my enquiry on literacy practices in a Reggio Emilia-inspired, independent school, as my interest is in approaches to literacy outside of the skills-based approach commonly adopted in South African government schools. The world-renowned municipal preschools of Reggio Emilia not only offer a profoundly different philosophy and pedagogy to mainstream schooling, they also provide a case study of the provision of free early childhood

[10] For more information, see the heads of argument of the 2015 court case involving textbook delivery: https://section27.org.za/2015/11/textbooks-heads-of-argument-2/

[11] See the Bua-lit co-operative's 2018 report (Abdulatief et al.) entitled "How are we failing our children? Reconceptualising language and literacy education" for a critical discussion on the language policy in South African education. https://bua-lit.org.za/our-position/

[12] The South African government's failure to implement the Minimum Norms and Standards (2013), an amendment to the 1996 South African Schools Act, has been reported on extensively in publications such as the *Daily Maverick* and *Mail & Guardian*, since the death of Michael Komape in 2014. For example, see https://www.dailymaverick.co.za/article/2019-07-31-the-michael-komape-tragedy-is-not-an-anomaly/

education to all. In the next section I will briefly discuss this aspect of the Reggio story before turning to my research questions.

Reggio Emilia

The Northern Italian municipal preschools known affectionately by many educators as 'Reggio schools' had their beginnings in the context of the poverty and economic devastation experienced in the immediate aftermath of the Second World War. As discussed further in Chapter 3, it was only after many years of political and social activism calling for universal, free early childhood education that these preschools became fully funded by the local government and therefore accessible to all. In Malaguzzi's words, "rage and strength" were needed for these schools to survive (Malaguzzi, 2012, p. 29). In a sad irony, contemporary Reggio-inspired preschools in many countries are almost always private institutions which rely on fee-paying parents to cover their costs. I wonder how different the trajectories of children in South Africa would be if we as citizens displayed the "rage and strength" necessary to demand free early childhood education for all South Africa's children?[13]

The founders of Mamela House (the name of the school has been changed to ensure anonymity) put their financial and societal privilege to work, to provide a different kind of education for their children. Their aim was to break new ground, not only in attempting to start a preschool inspired by the Reggio Emilia pedagogical principles and practices which are still largely unknown in mainstream South African education, but in their desire to extend this into a primary school, with the goal of adding a new grade each year. At the time of writing, the school extends up to Grade 4. Extending the Reggio Emilia approach into the primary school years is still a relatively rare undertaking (Kuby & Rucker, 2016, p. 53) and it is even rarer to see it adopted in teacher education (Murris, 2016, 2017; Murris et al, 2018.)[14]

[13] Giorza (2018, p. 104) refers to a public endorsement by the Premier of the Gauteng government In October 2017 of the Reggio Emilia approach at a South Africa/Italy Early Childhood Summit and expresses the hope that this could be a sign of collaboration between the South African government and Reggio Emilia in the field of early childhood education.

[14] The only South African example I'm aware of, apart from Mamela House, is Pioneer Academy in Johannesburg,

Among the stated goals of the school is to "honour the many languages in which children learn" (a reference to Malaguzzi's poem about the 'one hundred languages of children' [Malaguzzi, 2012, p. 3], which inspired and encapsulates the Reggio Emilia philosophy)[15] and to "respect children's agency to lead their own learning". The curriculum is deliberately "process oriented rather than outcome oriented", with a focus on "developing core competencies ranging from collaboration to communication and citizenship".[16] This resonates with the Reggio Emilia approach which regards children as already citizens, rather than simply citizens-to-be (Haynes & Murris, 2012).

Mamela House is a small, independent school, with 21 children enrolled in the current year, consisting of three classes: Grade R, Middle Group (Grades 1 and 2) and the older group (Grades 3 and 4). The school's teaching staff work together with the children to develop an emergent curriculum which combines the needs and interests of the children in their care, alongside an awareness of the national curriculum requirements. The school is independent, not receiving any subsidies from the government, and is therefore wholly reliant on fees paid by parents.[17]

Based on answers to a questionnaire I circulated as part of my research, parents generally chose this school because they want to provide their child with a different educational

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which adopts the Reggio approach all the way through to Grade 12. Fees are low, being subsidised by an American company. See https://www.novapioneer.com/sa/.

[15] The "Hundred Languages of Children" was the title of a poem written by Loris Malaguzzi, and has formed the foundation of Reggio Emilia philosophy. I discuss it in more detail in Chapter 3. The 'one hundred languages' is a metaphor and the number should not be understood literally. An English translation of the poem is accessible at: https://www.reggiochildren.it/en/reggio-emilia-approach/100-linguaggi-en/

[16] These quotations are taken from Mamela House's Parent Handbook.

[17] As I have made clear above, school fees act as a barrier to entry. I found the idea of the 'absent child' arrested me numerous times as I worked on this study, and resonated with this text from Murris et al, 2018, p.157: "We wonder about what and who is excluded in the 'classroom' – the politics of the ontological absence (and presence at the same time) of certain human and nonhuman bodies. What are the treasures we are m/is/sing? The pain that is hiding. The secrets being kept. The voices and other sounds we cannot hear. What is it we are not noticing? Not even noticing we are not noticing? As teachers-researchers, we are always concerned what we might be missing."

experience from that offered in South African schools which follow the national curriculum and mainstream pedagogical approaches.[18] They are drawn to the idea of a school which sees the child as "rich and resourceful", "a meaningful contributor to their learning" and in which "relationships and the co-construction of knowledge is key" (taken from the school's Parent Handbook, 2017). Another aspect of the school which differentiates it from traditional schools is its focus on experiential learning, in which the child is actively engaged in knowledge production. The school recognises that "[t]he world itself is part of the learning and knowledge making" (Parent Handbook, 2017), and that representing the world through worksheets and textbooks does not do justice to the learning process.

The Reggio Emilia approach, as discussed in more depth in Chapter 3, is a good choice of pedagogy to address these desires, as it works from an image of the child as competent, rich and resourceful, and a co-constitutor of knowledge, together with the community of learners they find themselves in. This learning community is understood to comprise the children, teachers, parents, and the environment (frequently referred to as 'the third teacher'). In Chapter 4 I diffract the Reggio Emilia approach with a critical posthumanist framework in order to reconfigure the learning community to include the nonhuman.

Research questions

My research questions shifted and morphed as I engaged in the process of thinking-with theories. I (re)turned to these questions in different ways over time, and found that as I "allow[ed] the agency of time, space and matter to express themselves" (Giorza, 2018, p. 151) the questions produced unexpected things, raising more questions than answers, driving me to notice and follow threads, tangles and knots which were not visible to me (back) when I first formulated the questions.

My main question is:

[18] Five parents out of a total of 12 submitted answers to the questionnaire.

- How do Reggio Emilia-inspired educators teach literacy in a South African school?

My sub-questions relating to this main question are:

- What is it about the democratic nature of Reggio Emilia pedagogy that influences the way in which children learn to read?
- How do literacy practices in a school following the Reggio Emilia approach differ from the literacy pedagogies of other schools?

One unexpected "line of flight"[19] found me, early on in my research process, reconfiguring the idea of democracy in education, an idea to which I had been deeply drawn as a more just alternative to the dominant discourses of mainstream schooling. My youngest daughter's struggles with literacy (later diagnosed as dyslexia), together with my work as a learning support therapist, left me more disturbed than ever by the lack of freedom experienced by children as they are swept along by what I came to regard as a river of adult anxiety. At the time, I interpreted this as a need for more democracy in schooling, in other words, children's voices should not simply be heard, but should play a significant role in shaping curriculum and the learning environment, such as Fielding's idea of the development of radical democratic community in schools (Fielding, 2010). I was looking for a model of education that recognised and made room for the dynamic agency of children in their learning experiences and was particularly interested in what this would mean for literacy.[20]

I was initially drawn to the idea of democratic schools in the tradition of Summerhill founded by A.S. Neill in England in 1921, which broadly follow an approach known as 'self-directed

[19] A Deleuzian term frequently used by posthumanist scholars, to indicate something unexpected occurring. In his foreword to *A Thousand Plateaus* (1987, p. xvi), Massumi explains his translation of the words 'Flight/Escape' as follows: "Both words translate *fuite*, which has a different range of meanings than either of the English terms. *Fuite* covers not only the act of fleeing or eluding but also flowing, leaking, and disappearing into the distance (the vanishing point in a painting is a *point de fuite*)." Further explained in Fig. 1 in Chapter 1.

[20] My initial interest was in children learning to read in more democratic environments (as discussed by Gray, 2010; Wheatley, 2013; Pattison, 2016), but this soon expanded to include writing as part of a broader interest in literacies, as discussed further in Chapter 2.

education', but became aware that this approach relies heavily on a conception of the individual self as a bounded, distinct entity. One of its theoretical underpinnings is Self Determination Theory (SDT). Proponents of SDT, such as Deci and Ryan (1985), hold that intrinsic motivation and self-determination are key factors in an individual's growth and development, and are either positively or negatively affected by extrinsic factors such as reward and punishment. Broadly speaking, this theory is based on the interaction between intrinsic forces within the individual, and extrinsic factors in their environment.[21]

The posthumanist/new materialism 'turn', increasingly influential in many disciplines ranging from physics to philosophy, architecture and education, contests this idea of a fixed subjectivity. As physicist-philosopher Karen Barad articulates, "[e]xistence is not an individual affair" (Barad, 2007, p. ix). In my readings I found that the rich conception of democracy in the Reggio Emilia approach, the idea that children, teachers, parents, the larger community outside the school, and the environment (including everything that has materiality) all have agency as co-constructors and protagonists in the education project (Rinaldi, 2006), resonates with the idea of intra-action, a concept which has generated a profusion of scholarly work of early childhood educators theorising with 'new' materialism and posthumanism as their orientation.[22] Swedish scholar and early childhood educator, Lenz Taguchi, reading the pedagogy of Reggio Emilia through the ideas of posthumanism, introduced the concept of an intra-active pedagogy, expanding the idea of agency and community to include the material. Lenz Taguchi's ideas formed a springboard, enabling an expansion of my initial interest in democracy in education to include the material as an active agent in the phenomena of literacy and learning.

[21] During this period I was very much influenced by the work of Dr Peter Gray, research professor of psychology at Boston College. His 2013 book, *Free to Learn*, explores the development of self-directed education within the larger democratic education movement, and its particular manifestation in the Sudbury Valley School in Boston.
[22] In Chapter 4 I discuss the views of scholars who assert that new materialism is not, in fact, new, as concepts foundational to this 'turn' have been central to Indigenous knowledge practices.

Outline of chapters

In this Introduction I have discussed my motivation for undertaking this study, as well as offering a description of the research site, situated within the context of the socio-economic-political landscape of South Africa, and briefly mentioned some of the implications of this context for literacy.

In **Chapter 1** I explain the impact of the Covid-19 pandemic on my research methods and gesture toward an unexpected direction this inspired. I unpack and problematise the ideas of data and the implications this has for methodology, using the framework of posthumanism. This is followed by a discussion about the adoption of diffraction as a methodological tool. I close the chapter with an exploration of the practice of pedagogical documentation (as used by schools inspired by the Reggio Emilia philosophy), the method I used for creating/collecting/working[23] with data.

In **Chapter 2** I offer a diffractive engagement with conceptions of literacy pedagogy, which includes an analysis of how these have been influenced by dominant paradigms informing teaching and learning (including the image of child), and a discussion of the contributions of scholars thinking with posthumanism to the field of literacy research. I introduce the term literacy desiring, developed by Kuby and Rucker (2016), and explain how I take up this idea in my study.

Chapter 3 is a description of some of the theory and practices of the preschools in Reggio Emilia in order to give further context for my research.

In **Chapter 4** I discuss a posthumanist framework for an intra-active literacy pedagogy. This includes an analysis of the implications of collapsing the nature/culture binary; the

[23] My use of three verbs to describe what it is I do with data is a gesture toward the ambiguity I experienced as a result of thinking with concepts such as' post-qualitative research'. I explore this further in Chapter 1.

development of an onto-epistemology and what this means for knowledge production; and a troubling of subjectivity and the move towards regarding the individual as a collective. I discuss Barad's notion of intra-action at length, and in particular how this idea helps us to do justice to the mutual implicatedness of the human and non-human in a learning event, and the necessity for including both the discursive and the material when observing events in a classroom. This leads to an analysis of Barad's idea of agential realism and the agential cut, together with the implications of these ideas for literacy pedagogy. I take up Donna Haraway's idea of worlding and explore this in relation to worlding with Covid-19, the latter being a significant agent in the writing of this thesis and learning as a phenomenon of entangled agencies. I close the chapter with a discussion of Barad's and Haraway's idea of response-ability, and how this matters to literacy as we seek to do justice to the differences and multiplicities among children, students, contents, matter and environments that intra-act with each other.

This framework supports a fundamentally different way of understanding pedagogy, and leads us into **Chapter 5**, which is an exploration of the data created by and together with the children of Mamela House during and immediately after their experience of remote schooling as a result of the Covid-19 lockdown. At the beginning of the chapter I discuss some of the implications of schooling having abruptly moved online during 2020 and observe that "relationality with technology has become an integral part of what it means to be human in the 21st century, even for young children". I take up the idea that an ethico-onto-epistemological orientation towards literacy must recognise that technology in all its many manifestations is an integral part of literacy desiring as experienced by children today – our "algorithmic condition" (van der Tuin, 2019) is indisputable. The rest of this chapter analyses documentation from the school, theorising the becoming-with of children and iPads, laptops, literacy apps, digital books, popular media, whiteboards and markers, cardboard boxes and clay in their complex, many-layered literacy assemblages.

My research took me in directions that surprised me, it answered questions that I hadn't asked, and threw up new questions which call for further enquiry. I now invite you to join me on this journey.

Chapter 1: (In)between data and theory

Situating my research site

My research site, a Reggio Emilia-inspired independent school in Cape Town, has intrigued me since its inception four years ago. As mentioned in the Introduction, my interest is in philosophies and pedagogies which provide alternatives to the dominant discourses of western education (with particular attention to how they relate to literacy). The school was started in 2016 by two mothers (both psychologists) who were looking for alternative educational options for their young children. They were deeply uncomfortable with the focus on outcomes and the pressure to achieve and "conform to one way of being", which they perceived as prevalent in mainstream educational environments and which they believed their children were experiencing even in their preschool years.[24]

Haraway's (1988) concept of situated knowledges requires an acknowledgment that this research site has emerged in a very particular context, that is, in the multiple, complex and oftentimes contradictory assemblages (social, political, historical, economic, geographical, ecological, and so on) that together go by the name of 'South Africa', and to which I drew attention in the Introduction. The use of a singular noun when speaking of a research 'site' does not do justice to the multiplicity of forces at work at any given moment in every place (Barad, 2007; Tsing, 2015; Haraway, 2016), and I gesture towards this complexity by the use of inverted commas around the words 'site' and 'classroom', to which the same applies.

[24] These quotes and insights are from a questionnaire I circulated at the outset of my research process, completed by parents, in answer to a question about what factors drew them to this school (or in this case, what factors motivated the founding of this school). The questionnaire can be found in the Appendix.

Becoming-with Covid-19

I was hoping to use the apparatus of pedagogical documentation (Rinaldi, 2006; Lenz Taguchi, 2010; Davies, 2014) to co-create data with children-teachers-materials-time-space by being physically in the 'classroom' with children and experiencing the becoming-together learning phenomenon with them. I came to see my engagement, such as was possible under the conditions of Covid-19, as physical in a different sense, mediated as it was through the physical apparatuses of technology. My intention was to spend one morning each week over a period of five months observing literacy practices at Mamela House. I planned to interact with staff and students, observing the day-to-day activities occurring in the school and becoming a part of the community for that period. I wanted to focus on observing literacy events and experiences in the intra-actions between children, teachers and the environment, as well as engaging in conversations concerning these practices. Field notes, photographs and video footage would serve as my documentation. I intended my observations to include looking at how books, tables, other furniture, writing materials, the school building and other non-human and more-than-human agents work together with the staff and children in this particular school, and how this working together of human and other-than-human creates the pathways to various types of literacies (remembering Malaguzzi's 'one hundred languages').

However, the Covid-19 virus came along and in its whirlwind worlding, shut the doors of classrooms across the world, including my research 'site', for the very period during which I had planned to do classroom observations. Initially I thought that my research would have to be indefinitely postponed. My ethics submission, in which I proposed that I would undertake classroom observations at Mamela House as soon as schools were allowed to re-open (in June 2020), was rejected on the grounds that the University of Cape Town was not permitting any face-to-face research for the remainder of the year. In a scramble to reimagine my research methods in a context where I was not allowed to interact with children, I contacted the school to discuss a possible change of plan. Mamela House has since its inception adopted the Reggio Emilia practice of pedagogical documentation as one of its primary teaching and learning methods, and they continued this practice during lockdown and its aftermath, making

adjustments by moving the practice online so that children, parents and teachers could continue working and learning together remotely. They generously gave me access to this documentation for my research. I re-submitted an ethics proposal in which I outlined how I would conduct my research remotely, using this documentation as data, and was granted permission to go ahead.

In Chapter 5 I explore some of the unexpected directions that my study took, including opportunities that emerged, as a result of this change in research conditions.

Research methods

My research methods include:

- Data creation through the use of the pedagogical documentation (photographs and videos) uploaded onto the Class Dojo website (discussed below) by children, teachers and parents in the Middle Group class between April and September 2020.
- An interview conducted with the classroom teachers at Mamela House.[25] I supplemented this with a second discussion in order to clarify some issues which were raised in the first interview. The interviews and discussions were conducted over Zoom (a video-conferencing application which has become an extremely popular platform for meetings during this period) between myself and three teachers.
- A questionnaire circulated to parents, regarding their motivations for choosing Mamela House for their child/children's schooling, their perceptions of the educational experience generally and with reference to literacy, specifically.

I decided against interviewing the children themselves, as this would have had to take place over Zoom and my instinct was that children would not feel comfortable to share their thoughts with a stranger in a video-conferencing format. Instead, I would listen for their voices in their encounters and through the record of their learning in the pedagogical documentation.

[25] See below where I explain how I have reconfigured the interview as an intra-view in my study.

I wanted to ensure that the children were given the opportunity to give informed consent for the use of their work and learning experiences in this study. Due to the fact that I could not engage with the children directly, I made a video in which I explained how I was intending to use their documentation.[26] This video was circulated to parents to show to their children, together with consent forms to be filled out by parents as well as consent forms specifically for the children to fill out. The consent forms, questionnaires and interview questions can be found in the Appendix.

In my study I adopted a reframing of the traditional interview as an intra-view. The term intra-view (see Bodén, 2013, as cited in Ceder, 2015, p. 73, and Barreiro & Vroegindeweij, 2020) is gleaned from Barad's idea of intra-action which "signifies the mutual constitution of entangled agencies" (2007, p. 33; this is similar to Lenz Taguchi's adoption of the term 'intra-action' when introducing 'intra-active pedagogy'). Barreiro & Vroegindeweij (2020, p. 139) work with the idea of the intra-view to "show the mutual constitution of questions, responses, comments and technologies … from which new understandings and questions emerge". This reconfiguration of the traditional interview is a better fit for the process which unfolded during my research as regards the interactions I had with teaching staff at Mamela House. Rather than a single interview involving working through a list of questions (although the questions listed in the Appendix were helpful in guiding the conversation and were also required for the purposes of the ethics clearance), it grew into several conversations and intra-actions utilising a variety of technologies (Whatsapp, Google Meet, Zoom, Class Dojo, email, etc) preceding and following the official interview, with each intra-action leading to new thoughts, ideas, questions and insights (which I came to regard as lines of flight, following Deleuze).

I found myself, like researchers around the world during this time, conducting research in lockdown in my home, intra-acting with my computer screen for many hours a day, becoming-with my research through an ever-deepening entanglement with digital technology. The

[26] You can view the video by clicking on https://youtu.be/iCvs4zpym2w.

pedagogical documentation from literacy events became a valuable tool for analysis; however, I was and remain cognisant of the fact that the documentation enables me to 'see' only dimly the "hot compost pile" (Haraway, 2016, p. 4) that are these literacy learning phenomena.

During 2020 Mamela House used a free online classroom management application, Class Dojo, which enables teachers to post themes and activities for their class each week. The teachers at Mamela House did this in the form of a "playlist". The application enables children and parents to upload photos and videos of their work and have it visible to the rest of the class. Given the fact that I was unable to join the students in the classroom even when their doors re-opened later in the year, this application became an integral part of the assemblage that made up my research site. Kuby's (2019) and Kuby and Rucker's (2016, 2020) analyses of their classroom observations were a big influence on the new ways I began to think about literacy, and I would have loved to follow in their footsteps and do observations in a similar way. However, the unfolding of my research happened in a very different way and took me to places (ideas, ways of thinking and seeing and doing) which I would not have predicted. The restrictions imposed by the "fast crisis" of Covid-19 (Haraway et al., 2020) became a significant part of my research assemblage.[27]

Methodology: (In)between data and theory

The humanist tradition, which has until recently characterised education research, regards inquiry as a "question of representing accurately those objects over which we have dominance as autonomous, observing subjects" (Bayne, 2016, p 86). Posthumanism disrupts this long-standing configuration by rendering the separation of subject and object untenable. Central to

[27] During an online discussion about the documentary, "Storytelling for Earthly Survival", which took place in May 2020 when many governments around the world were enforcing lockdown in order to limit the spread of the virus, Haraway said the following about these uncertain times: "We humans are caught up in the fast-moving temporality of the virus. The climate crisis (of extraction, the Capitalocene) has been growing, gaining ground for 500 years, it has been a slow crisis. But the virus has been a fast crisis, and has swept us up and tossed us around within a matter of weeks, a handful of months, turning certainties on their heads, flinging our arrogance to the ground, grinding our busyness to a halt. Although nothing ever really stops – we are living and dying through this." https://zkm.de/en/media/video/storytelling-for-earthly-survival-discussion-on-the-film-with-donna-haraway-bruno-latour-and-peter

this disruption is Barad's notion of intra-action (2007) which holds that we are part of the world which we seek to understand, or as Bayne explains, "the observer is inextricably involved in the system which is observed, the human is irrevocably extended into, or even produced by, the networks with which it is entangled" (2016, p. 86). Barad introduces this term in contra-distinction to the more usual term interaction. She starts by insisting that we acknowledge that "[e]xistence is not an individual affair" (p. ix). What she means by this is that "[i]ndividuals do not preexist their interactions; rather, individuals emerge through and as part of their entangled intra-relating" (p. ix). Educator and scholar, Theresa Giorza, understands this to mean that while interaction may leave the participating people or things unchanged, intra-action "implies the mutually influencing relationship between and among different agencies" (2018, p. 56).

This philosophical stance has profound implications for research.[28] As Ceder notes in his work on educational relationality, this philosophical stance requires a methodology that acknowledges the ontological entanglement of the researcher and 'their' data, rather than the traditional view of these being separate (Ceder, 2015, p. 72). Elizabeth St Pierre, who has written extensively on post qualitative research, recently stated that "a post qualitative study cannot and does not begin with any social science methodology, including qualitative methodology, but, rather, with the onto-epistemological arrangement and concepts of poststructuralism and its descriptions of key philosophical concepts" (2020, p. 1).

In this study I attempt to think *with* theory *with* data (Mazzei & Jackson, 2012), resisting the taken-for-granted assumptions of qualitative inquiry, that is, of a stable subject separated from (and able to accurately represent through language) the object of her inquiry. I take up Lather and St Pierre's (2013) challenge to reimagine qualitative research through the lens of the 'posts'

[28] Van der Tuin's study of the etymology of the word 'implication' is fitting here: "...stemming from the early 15th century, implication means an 'action of entangling' from Latin *implicationem* which means 'an interweaving, an entanglement' and from *implicare* which means to 'involve, entangle; embrace; connect closely, associate.' Implication is therefore a folding-in" (Van der Tuin, 2019, p. 9).

(poststructuralism and posthumanism) and think with post-theories as I analyse my research data (Kuby & Rucker, 2020b, p. 245). In order to do this, I diffract 'my' research data through posthuman theories and elements of the Reggio Emilia philosophy, such as the 'one hundred languages' and the practice of pedagogical documentation, and describe what emerges.

For the rest of this chapter I will unpack and problematise the ideas of data and method using the framework of posthumanism, followed by a discussion about using diffraction as a methodological tool when working with data, and close the chapter with an exploration of the practice of pedagogical documentation, the method I used for creating/collecting/working with data.

D...a...t...a

Koro-Ljungberg et al. (2017) note that conceptualisations of data have moved through positivist, interpretivist, and poststructuralist approaches, with the "most profound challenges to conventional conceptualizations of data" coming from new materialism (2017, p. 814).

Lather and St. Pierre (2013) identified some of these challenges several years earlier in their special issue on post qualitative research:

> If we cease to privilege knowing over being; if we refuse positivist and phenomenological assumptions about the nature of lived experience and the world; if we give up representational and binary logics; if we see language, the human, and the material not as separate entities mixed together but as completely imbricated 'on the surface' – if we do all that and the 'more' it will open up – will qualitative inquiry as we know it be possible? Perhaps not. (Lather & St. Pierre, 2013, pp. 629, 630)

I understand post qualitative research (also referred to as non-representational research) as using the frameworks provided by poststructuralism and posthumanism to problematise conventional qualitative research methodology, which focuses on the human (Jackson &

Mazzei, 2012; Bayne, 2016, pp. 86–87; Kuby & Rucker, 2016). In a critical posthumanist perspective "the researcher is not separate from the field of inquiry, or at the centre of it, or even situated in relation to it, but is rather *produced by* and *inextricably entangled* [my emphasis] within it" (Bayne, 2016, pp. 86–87). This demands that research be redrawn within a new posthumanist understanding of the project of inquiry.

The main methodological problem for posthumanist scholars has been the qualitative tradition of coding data (St. Pierre, 2014). Jackson (2013) argues against the reductionism of traditional coding in qualitative research as it requires organising, grouping and analysing data in an "attempt to produce order and regularity" by the imposition of "categories that erase difference and privilege identity among seemingly similar things" (p. 742). Instead, she suggests foregrounding the idea of emergence, adopting the notion of 'the mangle', a term taken from Pickering's (1993) work in the sociology of science. The mangle resists the idea of "purely human agency located in the autonomous subject" (Bayne, 2016, p. 89) by focusing on 'temporal emergence' over human intentionality, and acknowledges the co-constitutive relation of human and non-human (or material) agency. Pickering argued that the mangle gives us a way of thinking about the shift in social science from "epistemology to ontology, from representation to performativity, agency, and emergence" (Pickering 2002, p. 414, as cited in Bayne, 2016).

Agreeing with this idea of distributed agency, MacLure (2013) suggests that a materialist ontology cannot allow data to be seen as "an inert and indifferent mass waiting to be in/formed and calibrated by our analytic acumen or our coding systems". Instead, the researcher must acknowledge that she is not an autonomous agent but is in fact part of an assemblage in which data is active and "have their ways of making themselves intelligible to us" (p. 660).

Addressing these methodological problems, posthumanist scholars have experimented and come up with a variety of methods which aim to recognise and enact a more lively, entangled approach to research, such as Bodén's (2013) reconfiguration of the interview as an

"intraview"; or Johansson's (2015) drawing on Deleuze and Mazzei when reconfiguring the traditional focus group interview into "confabulative conversations" (all cited in Ceder, 2015, p. 73); or Murris and Haynes's readings of a classroom through diffracting encounters with philosophy with children and a picturebook (Murris & Haynes, 2018). Vannini (2015) notes that a non-representative research methodology should have "a greater focus on events, reflexivity, affective states, the unsaid, and the incompleteness and openness of everyday performances" (pp. 14–15).[29] He goes on to cite Dewsbury (2009) and Doel (2010) as encouragement for researchers to "embrace experimentation" and to "view the impossibility of empirical research as a creative opportunity (rather than a damming condition), to unsettle the systematicity of procedure, to reconfigure (rather than mimic) the lifeworld" (p. 15). The main differentiating feature of the non-representational style, Vannini concludes, is "that of becoming entangled in relations and objects rather than studying their structures and symbolic meanings" (p. 15).

If we regard data as "vibrant matter" (a term widely adopted from Bennett, 2010) we need to intra-act with data differently, in a way that acknowledges a dynamic relationality between researcher and data. In this vein, Koro-Ljungberg et al. (2017) suggest that data may emerge as an *event* in which "data, theories, writing, thinking, research, researchers, participants, past, future, present, and body-mind-material are entangled and inseparable" (p. 813). Data may thus be seen to contain "vibrant materiality", that is, matter that may be regarded as "very much alive across time, space, and theory" (p. 828).

Stephanie Springgay, a leader in research-creation methodologies, refers to what she calls the 'speculative middle' (2018). Drawing on Deleuze and Guattari, she asserts that research "begins in the middle" and that the researcher is "not there to report on what you find or what you seek, but to activate thought. To agitate it" (p. 87). This idea of the speculative middle "shifts methods from a reporting on the world" (i.e., a representational methodology) "to a way of

[29] Vannini uses the word "reflexivity" in a very different way to that explored below in my discussion about diffraction, in which I interpret reflexivity to be precisely the kind of practice that diffraction disrupts. Vannini describes reflection as a grammatical tool that can be 'stylized' in order to indicate mood (2015, p. 127).

being in the world that is open to experimentation and is (in) tension" (p. 87). I experiment with this idea in my analysis of pedagogical documentation in Chapter 5.

This reconfiguration is very far from the positivist view of the autonomous researcher who uses her agency to collect, sift through and analyse inert data, and makes it possible to conduct inquiry in more materially engaged ways (MacLure, 2013). Agreeing with this latter notion, Nordstrom and Ulmer (2017, p. 5) note that when ontology is regarded as "supple and contingent and expanding" instead of fixed and unchanging, this changes the nature of research: "[i]nquiries can—in a Deleuzian sense—become experimental". They argue that in taking this approach, researchers can "experiment in assemblages" and focus on studying "how they function, not what they mean". This experimentalism is also encouraged by Murris and Haynes, who note that conducting non-representational research involves recognising that what "counts as 'data' is not bounded or fixed and keeps changing as we (keep) re-turn(ing) to it" (2018, p. 19).

Why and how does this reconfiguration of data matter for literacy research? As Siegel notes (in Dernikos et al., 2019, p. 10), pedagogy and research "have never been innocent", and to proceed as if they are is to fail to do justice to the many elements of what Deleuze would call the assemblage(s) that make up a literacy event. Leander and Boldt (2013) define an assemblage as "the collection of things that happen to be present in any given context" (p. 25). They explain that the things making up an assemblage are not necessarily organised or coherent, and yet "their happenstance coming together in the assemblage produces any number of possible effects on the elements in the assemblage" (p. 25). In the context of the literacy event that forms the data for their research, the focus is on what texts are doing, not what they mean.[30] Texts in this scenario, as read from a Deleuzian-Guattarian perspective, are not 'about' the world; rather, they are participants in the world. "Texts are artifacts of literacy practice, but do not describe practice itself" (p. 25). They configure what emerges as "the

[30] The authors list what they regard as the texts in the particular literacy event about which they are writing, as including: hand gestures, spoken dialogue, several volumes of a graphic novel, a website, television programs, cards related to the graphic novel, and hand-drawn images.

production of desire" in which their research subject "does not aim to produce texts but to use them, to move with and through them, in the production of intensity" (p. 25).

In this configuration, an assemblage consists of matter (nature) and discourse (culture) which are co-implicated in "complex and shifting arrangements from which the world emerges" (Koro-Ljungberg et al., 2017, p. 815). Literacy events emerge from 'complex and shifting arrangements' in the classroom.

This kind of research involves the arts of noticing (Tsing, 2015; Haraway, 2016; Murris & Kohan, 2020), a method which Haraway describes as follows:

> I often think in terms of little stories or tiny details or tripping over something that opens up into huge worlds, where thread by thread by thread, as you spin from some tiny thing, you are relooping together the worlds that are required for living and dying *here*, with these details. (Haraway, 2016a, p. 257, emphasis in the original)

My research method can be thought of as the undoing of knots (as Haraway puts it, "The world is a knot in motion" [2003, p. 6]) while thinking about and working with assemblages (literacy events), foregrounding first one thread and then another, to see what emerges when data and theory are put to work together.[31]

Concept(s) as method

Jackson and Mazzei (2012) resist the idea that data can speak for itself or that "themes somehow miraculously emerge" from the data (St Pierre, 2014, p. 11), and instead suggest that qualitative researchers use concepts or interpretive theories to guide their enquiries. Taking this further, Lenz Taguchi and St. Pierre (2017) explore the idea of concept as method (see also

[31] When thinking about storying in this way, I am inspired by a quote from Trinh Minh-ha (quoted in Barad, 2014, p. 184): "The thread created moves forward crisscrossed and interlaced by other threads until it breaks with its own linearity; and hence, a story is told mainly to say that there is no story – only a complex, tightly knit tissue of activities and events that have no single explanation, as in life."

Colebrook, 2017)[32], suggesting the researcher working in this way, i.e., using a concept to ground her research, would not necessarily use conventional methods of 'data collection' (e.g., interviewing, observation, questionnaire) or methods of 'data analysis' (e.g., grounded theory analysis, thematic analysis, coding). Instead, they suggest, "the concept would orient her thinking and her practices" (Lenz Taguchi & St. Pierre, 2017, p. 646). Murris builds on this by further defining concepts as "performances" and "boundary-making practices", emphasising that she does not see concepts as "accurate, objective descriptions of a world 'out there,' because nothing in the world sits still" (Murris et al., 2020, p. 92).

This idea of concept as a performance is taken up by Kuby and Rucker (2016) in their development of the concept 'literacy desirings', informed by poststructural and posthumanist theories, to methodologically ground and inform their research of literacy events in a public (i.e. government) school classroom. Their stated goal is to "demonstrate, in a tangible way, how poststructural and posthumanist ideas were embodied in the literacy teaching and learning" in a particular classroom (2016, p. 3). They show their use of theories as methodologies and as pedagogies in the following way, using double arrows "to show the fluid, mutually constitutive relationship" among these three concepts (p. 3):

Figure 1 is an outline of the poststructural and posthumanist concepts Kuby and Rucker put to work as they co-construct theory with data in the context of literacy. I have found these concepts very helpful in my research and refer to them repeatedly as I (re)turn to the pedagogical documentation which, together with theory, form the data for this project.

[32] "...[c]oncepts are intensive and create orientations for thinking. It is in this respect we might begin to think of concepts as methods, precisely because concepts are at once prehuman (emerging from the problems or plane of thinking in which we find ourselves), but that also reconfigure or reorient the plane precisely by being prompted by a problem. Concepts are methods precisely because they emerge from problems rather than questions" (Colebrook, 2017, p. 654).

- **rhizomes and lines of flight**: the unexpected ways of doing literacy; departures from expected literacy practices
- **assemblages of desire**: the social (including humans and nonhumans) of literacy (co)desiring; sometimes collective projects
- **smooth spaces**: the nomadic, supple curricular spaces that foster rhizomatic ways of being and doing literacy; and **striated spaces**: the rigid curricular spaces that restrict innovative literacies
- **absent presence and silences**: a focus not only on what is said or tangible, but also on the ways of being and doing that seem absent but are present
- **becoming**: the shifting identities with materials over time and spaces; processes
- **enacted agency**: agency as a force emerging between people and materials, not residing solely in individuals
- **intra-activity with materials**: the entangled intra-actions of people, materials, writing tools, technologies, time, space, environment, and so forth
- **entanglement**: an idea from quantum physics describing the newness produced when parts come together as a whole; the users of writing artifacts, not simply passive audiences; students creating for others to experience (possible future entanglements)

Figure 1: Theoretical concepts informing literacy desirings (Kuby & Rucker, 2016, p. 3).

Lenz Taguchi (2010) makes a case for the fact that concepts should be thought of as part of the material that make up an enquiry, drawing on Barad (2007) by saying that "[c]oncepts come to matter as '*material articulations of the world*' intra-acting with all other matters and discursive meaning-making" (2010, p. 88, emphasis in the original). She notes that when a researcher focuses on "differences, diffractions, interference and performativity, or on the concepts of Deleuzian striated and smooth space", this produces something very different from "reflecting on representations of the world" (p. 88).

In the next section I will explore the "something very different" that can be produced by conducting research in this way.

Diffraction: when ideas meet[33]

Many scholars of education have found the method of diffraction, as suggested by Haraway (1997) and further developed by Barad (2007), to be a generative method when analysing data within the framework(s) of poststructuralism and posthumanism (including Hultman & Lenz Taguchi, 2010*;* Lenz Taguchi, 2012; Davies, 2014; Ceder, 2015; Murris, 2016a; Kuby & Rucker, 2016; Bozalek & Zembylas, 2016; Giorza, 2018). The plethora of new ideas emerging from the posthumanities, and for our purposes particularly within the field of education, attests to Barad's observation that "[d]iffractive readings bring inventive provocations; they are good to think with" (Barad, 2012, p. 50). In the following section I will explore why an alternative to reflection is needed, what is meant by diffraction and how it is used in research.

The trouble with reflexivity

While the physical occurence of reflection has been used as a common metaphor for thinking (Barad, 2007: 29), and as an essential tool in qualitative research, many posthumanist scholars have grappled with the fact that "reflexivity or reflection invites the illusion of mirroring of essential or fixed positions" (Lenz Taguchi, 2012, p. 268; see also Haraway, 1997). The trouble with this is that reflection is based on the phenomenon of a pattern of light that reflects an actual object or entity, implying that the reflective researcher's task is to "represent what is already there, independent of the researcher's gaze" or indeed to represent an object that can be "pinned down" (Davies, 2014, p. 7).[34] Haraway first expressed her reservations about reflection as a critical practice by observing that "reflexivity, like reflection, only displaces the same elsewhere, setting up worries about copy and original and the search for the authentic and really real" (1997, p. 16). This idea of a research object (and indeed, the researcher as subject) existing as an independent entity is problematised by Barad's (2007) interpretation of quantum physics, which strongly suggests that the starting point of ontology is not an entity,

[33] This phrase is taken from Ceder, 2015, p. 85.

[34] "It suits our current neoliberal governments, in particular, to think of everyone in a community as having measurable and manipulable characteristics, and to this end, to think of any community and its members as entities, or objects, that can be pinned down, categorized, and made predictable" (Davies, 2014, p. 7).

but relationality (Ceder, 2015, p. 65). Representationalism's intractable problem is that it does not take account of the influence the researcher has on the research object, but "holds the world at a distance" (Barad, 2007, p. 87). Or put another way, reflexivity involves the "taken-for-grantedness of the coherent 'I'" (Bozalek & Zembylas, 2016, p. 7; Lenz Taguchi, 2010).

Reflection, or reflexivity, is dependent on the idea of us "being able to truthfully represent a reality" solely by means of language (Lenz Taguchi, 2010, p. 84). A reliance on discursive analysis, Lenz Taguchi argues, is a form of enslavement to language. It excludes "the agency of the material reality that we are unavoidably connected to and constantly intra-acting with if we think in terms of immanence and onto-epistemology" (p. 84). Given this problem, Barad notes the value of Haraway's insight: "[d]iffraction can serve as a useful counterpoint to reflection: both are optical phenomena, but whereas reflection is about mirroring and sameness, diffraction attends to patterns of difference" (2007, p. 29). Davies (2014) explains that diffraction is not simply about reflecting an "image of what is already there" but is in fact "involved in its ongoing production" (2014, p. 2). She contrasts this with the positivist view of research, in which it is regarded as essential that "the research itself must not make a difference, since its findings must reveal what always already exists" (p. 2). She draws on Barad who suggests that the technologies of observation "not only cannot be separated from what is observed, but they will always be intra-acting with (affecting and interfering with) the reality that is observed and experimented with" (Davies, 2014, p. 2).

So, what exactly is diffraction and how does it differ from reflection?

Diffraction as a methodology

Barad describes the phenomenon as follows: "Simply stated, diffraction has to do with the way waves combine when they overlap and the apparent bending and spreading of waves that occurs when waves encounter an obstruction" (2007, p. 74). Diffraction patterns apply to various kinds of waves, including water, sound and light waves (Barad, 2007, p. 74) and in each case it means "to break apart in different directions" (Barad, 2014, p. 168). Significantly, waves are not bounded objects, but disturbances that are "forever becoming" (Murris, 2016a, p. 16).

Barad uses this physical process of diffraction as a methodology which engages affirmatively with difference (Barad, 2014; Bozalek & Zembylas, 2016, p. 5). As Haraway suggests, "[d]iffraction patterns record the history of interaction, interference, reinforcement, difference. Diffraction is about heterogeneous history, not about originals" (1997, p. 273). Bozalek and Zembylas (2016) explain that in a diffraction methodology, "the details of one discipline … are read attentively and with care through another … in order to come to more creative insights" (p. 5). An example of this is how Barad diffractively reads insights from natural and social theories through one another in order to "build an apparatus that is attentive to the nature of specific entanglements" (Barad, 2007, pp. 232–233). For Murris, this approach opens up possibilities to think outside the nature/culture binary in education, to regard children as "neither biologically determined, as Piagetian stage theories suggest, nor as having a socially constructed identity" (2016a, p. 17).[35] The problem with the former position is that it ignores the social while the latter ignores the physical, the biological and the material. Both positions take the nature/culture binary for granted. A diffractive methodology enables Murris to reconfigure children as "bodymindmatter" (Murris, 2016c, p. 293), their thoughts always "materialdiscursively intra-acting with the world" (Murris, 2016a, p. 17).

Barad develops diffraction as a more productive approach than critique, which, following Latour (2004), she regards as "over-rated, over-emphasized, and over-utilized" (as quoted in Dolphijn & van der Tuin, 2012, p. 49) and which can result in an epistemologically damaging process of distancing, othering and putting others down (Barad in Juelskjær & Schwennesen, 2012). A diffractive methodology is about creating "new patterns or ideas" stemming from "entanglement and intra-actions" (Ceder, 2015, p. 74) by engaging in a detailed, attentive and careful reading of different ideas through one another, leading to more generative "inventive provocations" (Dolphijn & van der Tuin, 2012, p. 50). This emphasis on newness is made possible because, unlike reflexivity which "remains caught up in sameness because of its mirroring of fixed positions", diffraction has the advantage of being "specifically attuned to

[35] I explore the nature/culture binary and its implications for education in Chapter 4.

differences and their effects in knowledge-making practices" (Bozalek & Zembylas, 2016, p. 2). Some scholars draw on Deleuze for inspiration for moving away from representation and embracing diffraction as a methodology. For example Dernikos et al. (2019) cite the following as Deleuze's critique of representation and "his move toward the logic of assemblage" (2019, p. 4):

> Representation fails to capture the affirmed world of difference. Representation has only a single centre, a unique and receding perspective, and in consequence a false depth. It mediates everything, but mobilizes and moves nothing. Movement, for its part, implies a plurality of centres, a superposition[36] of perspectives, a tangle of points of view, a coexistence of moments which essentially distort representation. (Deleuze, 1994, pp. 55-56)

Mazzei (2014) argues that "a diffractive strategy takes into account that knowing is never done in isolation, but is always effected by different forces coming together" (p. 743). Ceder (2015) works with this understanding of a diffractive methodology by observing Barad's development of the quantum theoretical implications of diffraction:

> Just like the observable quality of an electron (wave/particle) can only be determined in relation with the apparatus, the same goes for texts and other data in diffractive analysis. The observer and the observed are inseparable; matter and meaning are entangled. (Ceder, 2015, p. 74)

Diffraction can therefore be considered as a methodology that is compatible with a posthuman understanding of entanglement. Knowledge-making is an intra-relational process, or as Barad succinctly puts it, a diffractive methodology is "respectful of the entanglement of ideas and other materials in ways that reflexive methodologies are not" (2007, p. 29). Or in the more

[36] The idea of superposition is often referred to in connection with diffraction, as in, waves moving together/over/within/around each other form a superposition (Barad, 2007; Murris, 2016a).

poetic language of Haraway, it is a "narrative, graphic, psychological, spiritual, and political technology for making consequential meanings" (Haraway 1997, p. 273).

Implications for research

The implications of this methodology for my research are that, while reflexivity assumes an independent subject who is the locus of reflection, in diffraction there is no such distinction as subjects and objects are always already entangled (Bozalek & Zembylas, 2016, p. 6). As Barad notes, "[d]iffraction queers binaries" and the effect of this is the imperative of "a rethinking of the notions of identity and difference" (2014, p. 171). A diffractive methodology resists the goal of finding sameness, the need to categorise; instead, it acknowledges differences and explores how difference comes to matter (Barad, 2007, p. 90). And very significantly in the light of a posthumanist/new materialist orientation, while reflection tends to be at the level of the discursive, diffraction engages a material-discursive intra-active orientation to/with the world.

As I engage with the pedagogical documentation that forms the data for this project, I constantly (re)turn to the idea that the data is comprised of an entanglement that includes myself as researcher and other human (children, teachers, parents) and nonhuman agents (e.g. paper, paints, iPads, phones, cardboard, carpets, homes, classroom, time, as well as discourses concerning literacy, learning and knowledge-making practices). In doing so I am deliberately moving away from critiquing traditional approaches to literacy research towards a (hopefully) more generative, creative, diffractive account in order to join the growing conversation around a posthumanist orientation to literacy (Kuby & Rucker, 2016; Bridges-Rhoads & Van Cleave, 2017; Zapata et al., 2018; Murris & Haynes, 2018; Dernikos et al., 2019; Burnett et al., 2020; Thiel, 2020).

In my enquiry I am particularly inspired by Kuby and Rucker, who, following Jackson and Mazzei (2012) and St. Pierre (2014), found conventional humanist qualitative methodology incommensurable with their posthumanist, poststructural theoretical framework, and adopted a diffractive methodology when analysing data. They describe this methodology, within the

context of their literacy research, as "diffractively seeing with data and looking for events, activities, encounters that evoke transformation and change in all the performative agents—both human and nonhuman" (Kuby & Rucker, 2016, p. 50). This involved actively looking for "events, encounters, activities from Room 203 [their research site] that beckoned our attention", including both official and unofficial projects that could have gone unnoticed as part of the unfolding of literacy desiring (p. 50).

Methodology, as everything else, has ethical consequences. A diffractive methodology, according to Barad, allows the researcher to be responsible (or as posthuman scholars reconfigure this word, response-able) "to the thick tangles of spacetimematterings that are threaded through us, the places and times from which we came but never arrived and never leave" (Barad, 2014, p. 83).[37]

Pedagogical documentation

What follows is an analysis of the role pedagogical documentation plays as an agent in the learning process.

Surveillance, or "listening to children" ?[38]

Applying Foucault's (1977) work on surveillance to schooling in general and the literacy classroom in particular, critical literacy scholar Kerryn Dixon observes that practices of documentation and surveillance have as their goal the production of "an ideal docile subject" (Dixon, 2011, p. 162). This is evident in the dominant discourse of schooling, i.e. developmentalism, which Dahlberg and Moss refer to as a "technology of normalization" (2005, p. 8), in which the prospect of assessment hangs perpetually in the air, informing pedagogical methods and interactions from playschool to matriculation. In such a context, observation is

[37] I discuss the idea of response-ability in Chapter 4.

[38] This heading echoes the title of Bronwyn Davies's 2014 book, *Listening to Children*, in which she explores the idea of emergent listening in contradistinction to 'listening-as-usual' (Davies, 2014, pp. 21–33).

used to measure children's performance against a set of predetermined, expected, predictable achievements (Giorza, 2018, p. 98).

Since the narrative of developmentalism took hold of educational theory and practice, observation and documentation have been employed as normalising or diagnostic strategies in early childhood practices. The adult gaze has long been trained on children to look for deviations from 'normal' universal development.[39] Lenz Taguchi notes that these observation methodologies employed in educational contexts have a direct relationship with the scientific practices of medicine and psychology, and that this psychological–pedagogical pairing has "coded theory and practices in early childhood education since at least the 1950s" (2010, p. 70). She refers to these observational practices as a 'reduction of complexity', the purpose of which is to attempt to "make a complex world more manageable and controllable in order to know what to do with the children in our services" (Lenz Taguchi, 2010, p. 71).

The Reggio Emilia practice of documentation has little in common with this idea of surveillance. Rather, it is an apparatus for supporting and mediating the unpredictable, often messy process of learning. Lenz Taguchi observes that rather than using observation as a normalizing tool, Loris Malaguzzi and his co-teachers reconfigured observation in an education setting by "turn[ing] the tool around for it to speak the voice of the multiplicity of differences of children's strategies and conceptualisations, and without any desire to categorise what it was they heard or seen" (Lenz Taguchi, 2010, p. 72). Dahlberg, Moss and Pence (2007) coined the term 'pedagogical documentation' to describe the "practice of reflection and democracy" (pp. 141–154) for listening to young children as observed in the educational project of Reggio Emilia. The use of the term 'pedagogical' documentation is useful for distinguishing it from other forms of recordkeeping used in educational settings. It is crucial to understand that if documentation is simply a record or recount of what took place, it is not *pedagogical* documentation.

[39] My thinking about the adult gaze has been influenced by Carol Black's essay (nd), "Children, Learning, and the 'Evaluative Gaze' of School", accessible at http://carolblack.org/the-gaze.

Kuby and Rucker explain as follows:

> The focus of pedagogical documentation is not on documenting knowledge or learning goals, but rather on what kind of problem is under way, what questions have been produced, what kinds of materials and tools have been tried out, and what are the potentials for continuing. Pedagogical documentation is not about trying to concretize students' learning, but is an *attempt to understand inquiries and processes*. (Kuby & Rucker, 2016, pp. 50-51, my emphasis)

The focus of pedagogical documentation is on the processes and potentials rather than the products of learning, in contrast with the usual focus of educators on predetermined knowledge or goals to be attained. Olsson emphasises this shift in focus by pointing out that in pedagogical documentation, "there is a great risk of just retelling and nailing down the story of the already obvious" (Olsson, 2009, p. 112). The risk is that we focus on "that which we already know about children and learning and that by doing that we immobilize and close down the event". She urges educators to consider as important, "that which is not immediately obvious" and in this way, the focus is on what is in "the process of coming about" (Olsson, 2009, pp. 112–113).

Kuby and Rucker note that the philosophical foundations and practice of pedagogical documentation aligns well with a poststructural and posthumanist orientation due to the fact that "pedagogical documentation doesn't focus on meaning in a reductionist way, but rather on what intra-actions are *doing* or *producing* [my emphasis]" (2016, p. 51). As noted by Barad, "[m]eaning is not a property of individual words or groups of words but *an ongoing performance of the world* [my emphasis] in its differential dance of intelligibility and unintelligibility" (Barad, 2007, p. 149). Children are part of the world, together with other human and non-human matter, materials and forces such as space, time and educational discourses. A posthumanist perspective of learning includes all these in intra-action with each other, each making themselves intelligible to the other in an ongoing becoming together. This

perspective allows for an enlarging of what literacy is and does, as will be evident in my data analysis in Chapter 5.

The Reggio Emilia philosophical and pedagogical approach, of which pedagogical documentation is a central feature, has been called a "pedagogy of listening" that activates the 'one hundred languages of children' (Lenz Taguchi, 2010, p. 10; Rinaldi, 2006), in contrast to the more restrictive school sanctioned alphabetic literacy practices in traditional schooling. "Listening is a hallmark of the classroom environment in Reggio" (Edwards, 1998; Forman & Fyfe, 1998) because it legitimizes a view of children who can act and think for themselves and whose ideas are worth listening to, and indeed worth documenting (Dahlberg et al., 2007; Rinaldi, 2006). Rinaldi proposes that documentation should be used as a way of "listening … made visible as traces of the learning event" (2006, p. 68) through written notes, photographs, sketches, video footage, audio recordings, and so on of the children at work as well as what the children produce. Documentation acts as a tool for "(g)iving voice to the child as a co-constructor of culture and knowledge … (and) to further challenge children's processes of learning" (Rinaldi cited in Lenz Taguchi, 2013, p. 72). Lenz Taguchi explains, "Without having any specific identity in itself, pedagogical documentation can be understood as a movement or force that creates a space that makes our lived pedagogical practices material" (2010, p. 85). Documentation is sometimes referred to as "visible listening," and is part of the larger process of giving the child a sense of place in the community, a legitimate voice to be made visible and respected (Stremmel, 2012, p. 137). Pedagogical documentation has also been described as a "tool for democratic meaning making" (Stremmel, 2012, p. 138) and a more ethical means of assessing what children know and understand, in contrast to the process of judging and measuring children's work in relation to some pre-determined standard of acceptability.

This practice can be seen as a mechanism for reconfiguring democracy in education. Rather than democracy being about, for example, voting for practices and procedures in the classroom, or what project the class is going to focus on, this idea of "emergent listening" which is so central to pedagogical documentation, produces an environment in which hierarchy is

flattened, and a curriculum emerges from the human and nonhuman intra-actions that make up reality. Kuby and Rucker (2016, p. 54) take inspiration from Deleuze and Guattari by "focusing horizontally on human and nonhumans such as the community and students, spaces (physical, curricular, relational), time, and language". This flattening is essential when enacting a rhizomatic approach to learning, in that "the rhizome shoots out, creating plateaus, instead of vertically, hierarchically like a tree" (p. 54).[40]

This way of listening is about being "open to being affected by the other" (Davis, 2014, p. 32). Davis contrasts this with what she calls 'listening-as-usual' (p. 25) where "we listen in order to fit what we hear into what we already know'" (p. 21). Emergent listening may start out with what is known but it is open to evolving into new ways of knowing and being; it requires "courage to abandon yourself to the conviction that our being is just a small part of a broader knowledge" (Rinaldi, 2006, p. 114).

Noticing the material in a learning phenomenon

Although Reggio Emilia acknowledges the importance of the material by designating the environment as 'the third teacher' (Rinaldi, 2006), learning is regarded as an event occurring between humans interacting with each other and the environment. The agency of the material is below the surface, but not explicitly acknowledged or drawn into the process of knowledge production (Giorza, 2018). Lenz Taguchi expands this limited notion of agency by bringing in the material, observing that "an intra-active pedagogy does not merely deal with the intra- and inter-personal relationships in and between children, children and adults and what is said and done" (the inter-personal being what is usually the object of observation in a sociological configuration of education, due to the largely unquestioned focus on the human subject) "but deliberately notices the *performative agency of the material* [my emphasis] in the intra-actions of learning events" (2010, p. 65). Tsing's concept of the 'arts of noticing' is very relevant here; she proposes looking beyond only the human in order to re-awaken "our ability to notice the divergent, layered, and conjoined projects that make up worlds" (2015, p. 54).

[40] I discuss rhizomatic approaches to learning in more detail in Chapter 2.

A new materialist/posthumanist account does not regard the material as an essentially passive element in a learning experience. Rather, the material is active in "kicking back" (Barad, 2007, p. 215), making itself intelligible within the learning phenomenon. Our listening/noticing must therefore include the materiality of the environment producing and performing in intra-activity with the children as a phenomena of becoming together, or in Haraway's words, a becoming-with (Haraway, 2008). As Vannini observes in his discussion about non-representational research methodologies, "[o]bjects are no mere props for performance but parts and parcel of hybrid assemblages endowed with diffused personhood and relational agency" (2015, p. 5).

Davies (2014) actively works to go beyond 'listening-as-usual' which she believes produces individualised selves "who have an identity that can be grasped through already existing categories'' (p. 34). Her notion of listening is not limited to the human, but includes "the intensities of forces working on us and through us. It listens to changing, emergent thought, and is co-implicated in it, diffracting with it'' (p. 35). For Bridges-Rhoads and van Cleave (2017) this kind of listening makes visible the complex and layered entanglements of lives and moments, and produces a clearer accountability (response-ability) to noticing the many parts of a literacy learning phenomenon. I noticed echoes of this practice when talking about the pedagogy of listening to one of the teachers at the school while doing an intra-view (explained above) for this research project. When talking about how she engaged with the children in her class, she said her approach was to "*always* respond with curiosity". This deliberate approach to practicing the arts of noticing as a pedagogical tool is reminiscent of Haraway's approach as a writer/biologist/feminist: pull on a thread and see what happens. Untangle the sticky knot(s) (Haraway, 2008). Resist assumptions. Respond with humility and curiosity, and allow something new and unforeseen to emerge (Haraway, 2016).

Haraway draws on philosopher, psychologist, animal-human student, and cultural theorist Vinciane Despret's characterisation of her research practices as "going visiting", and says the

following about it in a paragraph which I take up as an invitation and encouragement for anyone embarking on non-representational research:

> She trains her whole being, not just her imagination, in Arendt's words, "to go visiting." Visiting is not an easy practice; it demands the ability to find others actively interesting, even or especially others most people already claim to know all too completely, to ask questions that one's interlocutors truly find interesting, to cultivate the wild virtue of curiosity, to retune one's ability to sense and respond—and to do all this politely! What is this sort of politeness? It sounds more than a little risky. Curiosity always leads its practitioners a bit too far off the path, and that way lie stories. (Haraway 2016, p. 127)

The observer as part of the apparatus

Rinaldi emphasises that the theoretical assumption underpinning the practice of documentation in Reggio Emilia is that there is no objective point of view that can make observation neutral (Rinaldi, 2006, p. 128). It is necessarily selective, partial and contextual (Murris, 2016a, p. 157). Barad, taking up a particular realist position, holds that although observations ("agential cuts") are always partial and depend on the apparatus that measures, they are nevertheless about reality because there is nothing outside of or beyond reality (Barad, 2007). This kind of documentation demands that teachers be 'response-able' for their observations, descriptions, interpretations and analysis. It is not simply about perceiving reality as it is, as much as it is about recognising that reality is co-constructed, and this construction is all the richer when it takes place with the engagement of all interested parties: children, teachers, even the families of the children. "Observation is not an individual action but a reciprocal relationship: an action, a relationship, a process …" (Rinaldi, 2006, p. 100). The interpretation of observations made by the teacher, using various modes of documentation (e.g. photographs, slides, video, written notes, audio recordings, etc) "takes on much greater value when it is made collectively, in the fertile terrain of dialogue and exchange" (Rinaldi, 2006, p. 129). In other words, intra-action.

Barad understands an apparatus used for observation as taking part in a process of "material (re)configurations or discursive practice that produce (and are part of) material phenomena in their becoming" (2007, p. 184). Lenz Taguchi builds on this insight to think about pedagogical documentation as "a material-discursive apparatus" (2010, p. 63). In Lenz Taguchi's reconfiguration, pedagogical documentation is an active agent involved and implicated in the production of new knowledges. This apparatus (notes, photograph, video, and so on) is "not a thing but a doing" (Barad, 2007, p. 183), part of the ongoing performance of the world.

The 'reciprocal relationship' to which Rinaldi refers necessarily underwent fundamental changes during the Covid-19 lockdown, particularly as the change to remote learning happened so abruptly. The teachers from Mamela House touched on this during our intra-view, when talking about the months of lockdown, observing that they intended to return to a more participatory model of pedagogical documentation in which the focus is on the process, rather than the product. From their respective homes during lockdown, the children became accustomed to working on activities which emerged from their Zoom classroom intra-actions, only posting documentation in the form of photographs or videos of the end product. All parties felt that this was a compromise, a dilution of the rich, reciprocal nature of the practice of pedagogical documentation to which they had been accustomed, and all were very excited to return to the classroom and resume their 'becoming-together'.

Having explored the methodology I plan to use in my study, the next chapter is a tracing of different conceptions of literacy and the contributions of a posthumanist orientation to this enquiry.

Chapter 2: Reconfiguring literacy

> *It is the very question of justice-to-come, not the search for a final answer or final solution to that question, that motivates me. The point is to live the questions and to help them flourish.*
>
> – Karen Barad (2012a, p. 8)

Pedagogy is entangled with a multiplicity of theories, narratives, materials, questions, practices, geographies, embedded and embodied in human and more-than-human intra-actions. It is also shaped by the image of the child, and consequently this image is central to any enquiry into early childhood education. I join the growing body of critical early childhood researchers who work to re-imagine childhood and pedagogy beyond developmental theory and practice (e.g. Dahlberg et al., 2007; Olsson, 2009; Lenz Taguchi, 2010; Murris, 2016a, 2016b; Hackett & Somerville, 2017; Murris & Haynes, 2018; Peers, 2018; Giorza, 2018; Kuby & Rucker, 2016a,2016b, 2020a, 2020b; Burnett et al., 2020). In my enquiry, I am drawn to the work of those who "trouble the certainties generated through deficit models of children's literacy" (Burnett et al., 2020, p. 111). I am interested in the creative power realised when literacy scholars "stay with the trouble" as Donna Haraway (2016) invites us, eschewing easy answers to complex questions.[41]

Wrestling with failure

Educator and researcher, Robyn Thompson (2019), notes that twenty five years since the passing of legislation that sought to transform the education system in the post-apartheid era, implementation continues to be uneven and undermined by severe inequality in human, material and financial resources between schools, communities and provincial departments. As

[41] Haraway's use of the word 'trouble' is consistent with its French meaning: 'to stir up,' 'to make cloudy,' 'to disturb' (Haraway, 2016, p. 1).

mentioned in the Introduction, the South African education system is in a state of perpetual crisis and dysfunctionality (Thompson, 2019, p. 14). Students continue to be unsuccessful in achieving the standards set by national and international assessments, such as the international benchmark tests like PIRLS.[42] Much attention has been paid over the years to the serious implications for South African children achieving this very low level of success in the reading literacy assessments in comparison with Western counterparts (e.g. Spaull, 2013; Howie et al., 2017). It should be borne in mind that comparisons with the performance of Western countries is a blunt instrument in that these comparisons do not take into consideration some of the unique challenges experienced by South Africa, such as the fact that South Africa has eleven official languages, and most children are educated in a language other than their home language. The continuing failures of the South African education system to address inequality in spite of massive investment by the state has led to ongoing activity in the field of literacy research and pedagogy, including debates about literacy, discussions about policy changes and the rolling out of large-scale interventions (for example, Spaull & Hoadley, 2017; Abdulatief et al., 2018).

Back to 'basics'

The results of the original 2006 PIRLS assessment were met with the introduction of a more prescriptive, revised curriculum: the Curriculum Assessment Policy Statement, also known as CAPS (Department of Education, 2011). Prescription has taken the form of "highly specified, sequenced and paced guidance regarding the content that should be taught in schools" as well as specific methods of curriculum delivery (Murris & Verbeek, 2014, p. 2). Some scholars perceive this 'back to basics' approach as having been adopted in order to reverse what was

[42] The Progress in International Reading Literacy Study (PIRLS) is an international comparative evaluation of reading literacy of Grade 4 and Grade 5 students. South Africa has participated in three cycles of PIRLS, namely 2006, 2011 and 2016. The latest results have concluded that 78% of South African Grade four learners do not reach the international benchmarks and therefore do not have basic reading skills by the end of the Grade four school year, in contrast to only 4% of learners internationally. South Africa is evaluated as having the lowest score out of sixty countries (Howie et al., 2017).

regarded as a radical 'whole language' approach adopted during South Africa's transition to democracy, which was in turn a reaction to the classroom practices during apartheid, especially in schools in poor communities, which emphasised "technical decoding skills and oral drill sequences in the teaching of reading" (Spaull & Hoadley, 2017, p. 80). However, it can also be argued that the transition to democracy did not, in fact, bring with it a radical whole language approach. Curriculum 2005's focus on outcomes is in tension with the tenets of whole language and while there are certainly aspects of whole language in the curriculum, this is not an approach most South Africa teachers were familiar with, were trained in or implemented in their classrooms. Whatever one's perspective on the historical trajectory, the current situation is a focus on reading isolated words, rather than connected text. In addition, opportunities to handle books, learn vocabulary and engage in writing activities have also been severely constrained (Spaull & Hoadley, 2017, p. 80), often by limited access to resources and insufficient attention paid to literacy instruction during teacher training.[43]

The idea that literacy is largely a decontextualised skill involving decoding (for reading) and encoding (for writing) has once again become the dominant interpretation and practice in South African schools at the Foundation Phase level (Verbeek, 2010). According to Hilary Janks (2010), "… school literacy is seen as a neutral technology and a decontextualized set of skills" (p. 3). Karin Murris, drawing on Larson and Marsh (2014) agrees that,

> [l]ike many governments globally, the dominant assumption in South African policies and practices is that literacy is about learning a set of neutral, value-free discrete skills that can be taught independently of people's experiences and of social, cultural, economic and political contexts. (Murris, 2016a, p. 175)

Many scholars, particularly those with a poststructuralist (such as Janks, 2010; Prinsloo, 2016; McKinney, 2017) or relational materialist orientation (such as Murris, 2016a), have expressed concerns with the implementation and subsequent results of the international standardised

[43] See McKinney, 2017, for an in-depth discussion about the injustices caused by education systems which regard linguistic variation as a problem rather than a resource. She also problematises the idea of 'basic' in 'back to basics' programs (see 2017, p. 65).

tests, and with the call (and indeed, policy in the form of curriculum directives) to adopt a narrow view of literacy with its focus on a 'back to basics' approach.[44]

Urban and Swadener (2016), writing on behalf of the Reconceptualising Early Childhood Education (RECE) movement which gained traction in the 1980s and which drew from a range of critical, feminist, postcolonial, postmodern and Indigenous perspectives, expressed the following concern with the assumptions underlying international standardised testing:

> The dominance of a narrow interpretation of developmental psychology and child development theory privilege particular sets of beliefs or forms of knowledge that typically reflect western or Eurocentric traditions and values. Historically, on a global scale, the privilege of western onto-epistemologies (ways of knowing, doing, and being) have created power for certain groups of people, and continue to oppress others. (Urban & Swadener, 2016 (np), cited in Thompson, 2019, pp. 159-160)

The multilingual nature of South African society, coupled with the relatively mono-lingual approach of many schools and a language policy that is skewed against children whose first language is not English, adds significantly to the complex web of factors which contribute to South Africa's educational failures (McKinney, 2017; Abdulatief et al., 2018). Literacy learning is profoundly influenced by many factors such as poverty, teaching resources, the choice (or imposition) of English as medium of instruction over and above learners' home language, the underdevelopment of African languages in print, and limited reading and writing cultural practices in many African home and community settings (Alexander & Bloch, 2010, p. 4). In a cruel irony, a narrow view of literacy may help to perpetuate the very inequality a 'back to basics' approach is trying to address (Abdulatief et al., 2018). Burnett et al. (2020), in response to the idea of 'closing the gap' with regards to addressing inequality in education, offer the view

[44] The Western Cape Education Department's recent directive compelling teachers of English Home Language in the Foundation Phase, as well as members of school management teams, to undergo training in a commercial phonics programme, is further indication that a 'back to basics' approach focusing on phonics has significant support from the state. (Curriculum GET Minute: DCG 0016/2019, issued by the Western Cape Education Department, titled "Jolly Phonics programme for English Home Language")

that a simplistic analysis of children's perceived underachievement all too often leads to narrow, prescriptive approaches in language and literacy teaching that "fail to provide the rich, meaningful experiences that could do much to foster children's linguistic and literacy repertoires" (2020, p. 113). This is exacerbated by the fact that school literacy often has limited connection to children's life outside of school, which means that "they cannot make use of the rich resources they do have" (Dixon, 2013, p. 276).

Alexander and Bloch refer to the "tug-and-war process" that they believe characterises early literacy progress in South Africa, a process that sees many young children "pulled out of their cultural communities – often leaving their languages behind them – to spend time in places where learning so often does not seem to make sense, nor does it seem to need to make sense" (2010, p. 2).

Giorza argues that, apart from the questions that arise about the validity of standardised tests for local conditions, what is most alarming is the response of policy makers to these results (2018, p. 185). The solution proposed by many scholars and policy makers for low performance in the early grades in reading and numeracy is frequently increased input in formal literacy and numeracy instruction. This seems on the face of it a common sense approach, but as Giorza observes, decades of early education research "shows the importance of open-ended exploratory and experimental play in the negotiation of meaning" (2018, p. 185). She holds that there is a "threshold timespace between not-being and being literate" which is critical, and that this "timespace" should be "guarded fiercely" as "formal instruction creeps into increasingly earlier phases of education" (Giorza, 2018, pp. 183–184).

A receiver of knowledge

South African educator Clare Verbeek (2010) proposes that the problem with early literacy in South Africa cannot be a lack of attention to phonics, as is often suggested. After all, decoding and blending is currently the dominant literacy practice in South African schools, with a focus on isolated words rather than connected text, and the results speak for themselves (Spaull & Hoadley, 2017). Verbeek asserts that the choice and chronology of the so-called 'big five' in

early literacy instruction – phonological awareness, phonics, vocabulary, fluency, and comprehension – is deeply problematic and does not develop learning strategies for word recognition and comprehension (Verbeek, 2010, p. 17). Verbeek has noted that it is remarkable how little attention is paid in South Africa to what it means to read for meaning, the thinking skills involved in making sense of texts and how this should be taught in the Foundation Phase (Verbeek, 2010, p. 120). The narrow focus on decoding skills robs children of the opportunity to learn to read for meaning. Verbeek's conclusion is that "the lack of focus on meaning and on ways of constructing meaning in reading are factors contributing to the poor performance of learners in standardised reading tests such as the large-scale Progress in International Reading Literacy Study (PIRLS)" (2010, p. iv).

Philosopher of education Andrew Davis, in his critique of the strong emphasis on synthetic phonics in the new National Curriculum for England which came into force in 2014, comes to the same conclusion by asserting that phonics alone cannot teach reading. Words do not carry meaning in isolation, and the purpose of reading is to make meaning (Davis, 2013), therefore the focus needs to be on more than words. Posthuman theorists take this further by arguing that meaning is not determined or confined by language alone, but that meaning and matter always go hand in hand. Alaimo and Hekman (2008, p. 6) observe that "[new materialism] accomplishes what the postmoderns failed to do: a deconstruction of the material/discursive dichotomy that retains both elements without privileging either". Barad signifies this rejection of the dichotomy between matter and meaning by referring to the "material-discursive" (Barad, 2007, p. 88), while Murris (and others) collapses this further by removing the hyphen, as in "materialdiscursive" (2016, p. 7). Kuby and Rucker (2016, p. 14) note that scholars put these words together as a way of signalling the mutually constitutive relationship between the two.[45]

Dixon (2013, p. 276) observes that early years education in South Africa includes the strong presence of what Dahlberg and Moss call a 'technico-instrumental' approach (Dahlberg & Moss, 2005, p. 19). This was evident in Verbeek's observation that, in Foundation Phase literacy

[45] I discuss the relationship between matter and meaning in more depth in Chapter 4.

classes, the teacher's role is seen as providing drill and practice, while the learner is seen as a "receiver of knowledge and a doer of drills" (Verbeek, 2010, p. 9).[46]

This narrow focus on decoding letters, letter blends, and the reading of isolated words and non-words (a significant element of the PIRLS test) not only undermines the purpose of reading, which is making meaning, it also limits children to a singular role, that of consumers of text; a passive role (Abdulatief et al., 2018, p. 9). This construction of learners as passive is also noted by Compton-Lilly et al. (2020) in their critique of summative literacy assessments, which they say require teachers to lead, direct, and control children's learning, creating a "washback effect that affects what it is that teachers notice and believe about learners" (2020, p. 381). They write that summative literacy assessments are "systematically used to invoke and respond to universal conceptions of childhood, literacy and language(s)" (Compton-Lilly et al., 2020, p. 386).

Having touched on some of the profoundly complex problems experienced in South Africa in the area of literacy, I will spend the rest of this chapter discussing ideas of child and childhood, including posthuman configurations of the child and how the latter can be helpful in imagining a different pedagogical approach to literacy education. I will briefly outline various theories of literacy, ending off with a discussion of literacy as theorised through and with posthumanism. I take up this enquiry as a matter concerning injustice in education research and practice (Peers, 2018), and do so recognising that while it can be tempting to rush toward what seem to be solutions to our problems, answers can be elusive. Part of the "justice-to-come" proposed by Karen Barad includes letting go of certainties, embracing ambiguity and indeterminacy, and becoming more open to different ways of thinking, being and doing in the world in an effort to do justice to the complex knots we find ourselves in.

[46] In South Africa, the Foundation Phase runs from Grade R (kindergarten) to Grade 3, serving children roughly between the ages of five and nine.

The grand narrative of developmentalism

Teachers in the exemplary Reggio Emilia schools suggest that it is impossible for a culture to exist without an image of children (Rinaldi, 2006). As one of the key questions shaping pedagogy is the image of the child, we must ask: What are these "universal conceptions of childhood" to which Compton-Lilly et al. referred (2020, p. 386), which they believe inform summative literacy assessments and perpetuate educational injustice on children? How do these conceptions affect literacy research and practice?

Children in South Africa are constructed according to the dominant discourses of their society, entangled in legacies of Western philosophical configurations of being (ontology) and knowing (epistemology) (Peers, 2018, p. 9). Over the past 100 years, observational protocols and experiments have been used to judge children's development according to developmental psychological theories (Lenz Taguchi, 2010, p. 7). Dixon notes that in the twentieth century, the clinic and the nursery school became sites where standards and norms were developed through the observation of large numbers of children (Dixon, 2011, p. 152). She cites Rose (1989) in her discussion of the rise of psychology as the means by which children have come to be measured, observing that norms of posture, locomotion, vocabulary, comprehension, conversation, personal habits, initiative, independence and play have now been "deployed in evaluation and diagnosis" (Dixon, 2011, p. 152).

This discourse has offered a 'grand narrative' of progress through universal stages of development, influenced by Piaget, a narrative that has "done much to produce the constructions of young children" (Dahlberg et al., 2007, p. 99). In terms of education, Olsson (2009) describes developmental psychology as positioning the child and setting them on a trajectory of predetermined development, where learning is seen in terms of "transmission and reproductive imitation" (p. 7).

Dahlberg et al. (2007) offer a critique of developmental psychology and its defining role in education, concluding that developmental assessments act as "technolog[ies] of normalization determining how children should be" (2007, pp. 36–37).

> Theories used to describe children's development have a tendency to start functioning as if they were 'true' models of reality, becoming a kind of abstract map spread over the actual territory of children's development and upbringing. Instead of being seen as socially constructed representations of a complex reality, one selected way of how to describe the world, these theories seem to become the territory itself. By drawing and relying on these abstract maps of children's lives, and thus decontextualizing the child, we loose [sic] sight of children and their lives: their concrete experiences, their actual capabilities, their theories, feelings and hopes. (Dahlberg et al., 2007, p. 36)

The authors refer to an "exhaustive and extended process of problematization and deconstruction" experienced by the discipline of developmental psychology (Dahlberg et al., 2007, p. 101). Political scientist Toby Rollo agrees, saying that "scholars working in the fields of child studies, sociology and geography have acknowledged that the developmental model of childhood is little more than a pernicious social construction" (2016, p. 236). However, Dahlberg et al. point out that policy-makers and practitioners in the field of early childhood are often unaware of these critiques and continue to rely on the discipline to provide them with a 'true' account of childhood and a foundation for policy and practice (2007, p. 102). Lenz Taguchi (2010) also notes that after a period of critique during the 1970s and 1980, developmental psychology had a revival in early childhood education in the late 1990s (p. 7). It is regarded as best practice in many parts of the world to issue developmental plans of various kinds to monitor children's cognitive, psychological and social development as well as their physical motor abilities throughout the preschool years and into primary schooling (Lenz Taguchi, 2010, p. 7). Developmental stage theory has taken root so profoundly into "the fabric of early childhood studies", writes MacNaughton (2005, p. 1, cited in Lenz Taguchi, 2010, p. 7), that its "familiarity makes it just seem 'right', 'best' and 'ethical'". Developmental psychology therefore continues to play a powerful role in shaping how we understand childhood and children, and in turn, in shaping pedagogies, including the teaching of reading and writing.

Consequently, the dominant narrative informing the goals and methodologies of childhood education revolves around the normative idea that adults need to aid children in their becoming-adult. From this perspective, education is effectively a one-way street, which sees adults teaching children what they need to know and how they need to act as part of a developmental process (Prout, 2005). Education is future-focused, with the goal of eliminating ('developing') the child in favour of the adult, resulting in little time to be fully immersed in the present (Murris & Reynolds, 2018). This is evidenced by the continuing, relentless forward motion of schooling, with each grade regarded as merely a stepping stone to the next.

A cut too small

Dominant discourses such as these can and should be challenged, and this challenge requires "dislocating, displacing, and dislodging habits including habits of thought" (Holmes et al., 2020, p. 259). Kuby et al. (2019, p. 11) argue that this forward-motion focus on progress is in fact "a cut too small", too exclusionary and based upon unfair hierarchies of who and what counts.[47] This idea draws on Karen Barad's idea of the agential cut, which refers to the fact that the deeply connected way that everything is entangled with everything else means that any act of observation makes a "cut" between what is included and what is excluded in the act of observation. (I (re)turn to this idea of agential cut in Chapter 4.)

> Our focus has been on futures—if children know their letters and sounds, then they can read a book later. If they can write their letters, then later they can write a story. If students are on a particular reading level by the time they finish second grade, then they are ready for third grade and more levels. If students can write an opinion essay now, then they will know how to construct an argument later. These ways of thinking are detached from the current realities

[47] Anna Tsing, through her work in the area of multispecies storytelling (inspired by the work of Donna Haraway) concludes that "progress stories have blinded us" to the "so-much-more out there" (2015, pp. 10, 11).

> and relationships children are already entangled with/in as learners. (Kuby et al., 2019, p. 11).

In many educational theories and practices, children are subject to a distinctively epistemic injustice by virtue of adults excluding, silencing, or discrediting child's capacity as a "knower" (Murris, 2013, p. 245; McKinney, 2017). Epistemic inequality results when the teacher is regarded as the authority of knowledge production, and consequently the learner is positioned as knowledge consumer (Murris, 2013). Biesta notes that in pedagogical spaces, exchanges between the educator (adult) and student (child) are constituted by an assumption that students are passive participants that are educated by the teacher with the main focus on academic qualification and socialization (Biesta, 2006, 2010). Educators assume that they know what children should learn in each grade level. Deleuze writes about the "indignity of speaking for others" that teachers and researchers so often engage in with respect to children (cited in Kuby & Rucker, 2016, p. 30). Toby Rollo (2016, p. 3-4) asserts that, despite shifting conceptions of childhood inferiority, the child has been consistently understood as a subordinate and only partially human being who must be guided into maturity through education. Although the Western idea of progress would take many forms over time (e.g. Christian, cultural, national, and scientific), each one is informed by the same proposition: human beings, as individuals and as a species, progress out of a bestial state into a fully human state through education (Rollo, 2016, p. 5). Childhood therefore tends to be viewed instrumentally, as mere preparation for adulthood.

Figure 2: The Cartesian split in education: child (nature) separated from adult (culture), resulting in epistemic injustice (Murris & Reynolds, 2018).

Developmentalism relies on a deficit model of childhood, the plausibility of which depends on comparing children with adults primarily in terms of adult knowledge (Murris & Reynolds, 2018). Child is segregated and separated from adults physically, but also separated from their own selves. In this way, the education system enacts the Cartesian split of body and mind, nature and culture, with children on the side of body or nature, and adults inhabiting mind or culture (Murris, 2016).

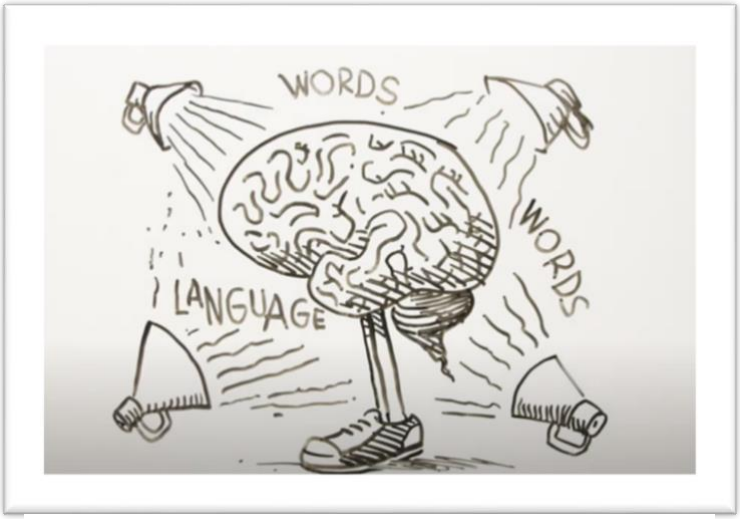

Figure 3: "Brains on sticks" (Murris & Reynolds, 2018).

As Murris explains in the "Posthuman Child Manifesto" (Murris & Reynolds, 2018),[48] the epistemology that this Cartesian dualism has produced is one which privileges the role of language. In this epistemology, knowledge is thought to be conveyed through language, and words therefore do the work of representing the world. Kuby & Rucker (2016, p. 28) citing Lenz Taguchi (2010), observe that in this paradigm, language mirrors or represents an event in the physical world outside of people. Using this configuration, learning is "*about* the world, mediated through language and seldom experiential" (Murris & Reynolds, 2018). Murris offers as an example the routine use of worksheets in which knowledge is communicated through print on a page, and believes that this pedagogy configures children in the classroom as "brains on sticks". Learning through the body, by means of the senses, is marginalised. "Touching, smelling or movement are rarely regarded as means to acquire, communicate or assess knowledge that matters" (Murris & Reynolds, 2018). Dernikos (2020) illustrates this negation of learning through the body in her enquiry into the insistence of silence in a Grade 1 class, and what this produced in and through children. Thompson (2019) observes that another consequence of elevating or favouring language is that nonhuman bodies are marginalised, as well as people who are in the process of becoming literate (p. 24).

This epistemology is contested by the new materialist or posthumanist turn, characterised by Karen Barad's proposal that knowledge is constructed through "direct material engagement with the world" rather than by "standing at a distance and representing" the world (Barad,

[48] https://www.youtube.com/watch?v=ikN-LGhBawQ

2007, p. 49). New materialist scholars frequently refer to philosophers Deleuze and Guattari's conception of knowledge and being as rhizomatic constructions (discussed in more detail towards the end of this chapter). Arndt & Tesar (2020) explain that rhizomatic thinking removes any sense of linearity and focuses instead on relationships and developments emerging from the centre of those relationships (pp. 1234–5). "The child becomes seen as a multiplicity, in relationships with the world and things in the world that have no beginning and no end but that continually shift and change on account of those relationships" (2020, pp 1234–5).

Malaguzzi's poem about the one hundred languages of children, mentioned in the Introduction, is a touchstone for the Reggio Emilia philosophy and practice, and poignantly articulates the fact that while children are resourceful, productive, and creative thinkers and communicators, western standardised education has left them with only one language, the alphabetic language of reading-and-writing. Giorza (2018, p. 185) observes this in the structured and product-oriented training that goes into the teaching of reading and writing currently in South Africa, saying it leaves little room for these 'other' knowledges, taking away the ninety-nine other languages (Malaguzzi, nd), and framing 'child' as ignorant. A 'cut too small' can be interpreted as regarding the child as a bounded, boundaried subject rather than as a phenomenon engaged in "literacy as an affective entanglement of bodies, ideas, texts, thoughts, affects, and so forth" (Dernikos et al., 2019, p. 4).

Murris and Haynes (2018) build on this line of thought by stating that "for posthumanists the concept 'child' is not abstract enough" (p. 13). For them, the concept 'child' is a multiplicity, always in relationship with other humans and other-than-humans, always connected, embedded and embodied, dynamic and active. Rather than referring to a bounded individual, the word 'child' therefore refers to "a complex material-discursive relationality" (p. 13), or in Baradian terms, a phenomenon.[49] Murris uses a neologism, "iii", deliberately using three lower-case "i's" in grey font to indicate a posthumanist way of seeing child, resisting the habit of

[49] I use the word 'phenomenon' here in a Baradian sense: "[t]he primary ontological units are not 'things' but phenomena—dynamic topological reconfigurings/entanglements/relationalities/(re)ar-ticulations of the world" (Barad, 2007, p. 141).

referring to the individual as "I", and explains that this " involves seeing children as dynamic events, processes, rather than individual subjects or objects" (Murris et al, 2020, p. 93).

Thompson (2019) works with a concept of childhood that she describes as "e/mergent", a concept which takes into account how the child is "produced through the fluid and entangled combinations of entities or bodies that participate in classroom events: the material beings, architectures, the video camera, other human beings, time, space, and other bodies" (p. 22).

Murris argues for a posthumanist reconfiguration of child, because current "figurations of child wrongfully position children as lesser beings ontologically" (2016a, p. 131). Much injustice is inflicted on children on the basis of adult claims of what counts as true knowledge, and therefore what is educationally worthwhile (p. 131). Murris theorises this injustice as ontoepistemic injustice (p. 151): A child is not listened to because of its very being a child, and therefore can make no claims to knowledge. Child is therefore "denied ethically, epistemically and ontologically" (151). Jokinen and Murris (2020, p. 54) observe that the replacement of orality by literacy and the printed word rendered "the child (like Indigenous peoples) an outsider to western adult culture".[50]

A posthumanist reconfiguration of child demands a reconfiguration or re-imagining of literacy pedagogy that is much broader than the dominant discourse of developmentalism allows, or even that of the sociology of childhood. A deep and constantly evolving scholarship has been undertaken in the field of posthuman literacies in order to effect that reconfiguration, but before diving into it, what follows is an overview of theoretical frameworks for literacy leading up to the materialist 'turn'.

An engagement with theories of literacy

Drawing from Haraway's idea that " … it matters what stories we tell to tell other stories with; it matters what knots knot knots, what thoughts think thoughts …" (2016, p. 12), I will briefly give

[50] The development of digital literacies may be changing this, as I discuss in Chapter 5.

a flavour of several key theories that have been used to think about literacy over the past century, before turning to a discussion on posthuman or new materialist theories of literacy, which is the orientation I adopt in my research. It is important to note that these theories have not only influenced literacy pedagogy, research methodologies and findings, but have increasingly worked to explore the many ways in which literacy pedagogy is linked to the politics of power and inclusion (Wager & Enriquez, 2020, pp 1064–5), a theme to which I will be (re)turning.

While literacy is commonly understood as the ability to read and write, theorists have been expanding this definition since the early 20th century (Wager & Enriquez, 2020, p. 1064). Burnett et al. (2017, p. 5) note that literacy researchers have challenged the "psychological cognitive accounts of literacy that focus on a closed loop between text and brain", by adding many ways of thinking about "what might count when thinking about literacy/ies". They observe that decades of literacy studies have "extended the gaze to include multiple places and spaces, new media, diverse languages, practices and power structures".

Cognitive, behavioural and constructivist theories of literacy

For much of the 20th century, literacy has been regarded as a cognitive, autonomous skill learned by an individual (a bounded subject), separable from contexts of use and measurable as independent end points (Purcell-Gates et al., 2012, p. 397). This model echoed the factory model of education that was adopted during the industrialization of society (Kennedy, 2006, p. 56), with teachers emphasising rote methods of learning to read, focusing on reading as decoding. During the 20th century, psychologist Jean Piaget's constructivist theory of learning, which regarded learning as an organic, active process in which new knowledge is built on previous knowledge in predictable stages, began to influence pedagogy, including literacy pedagogy. Piaget's profound influence on education is still seen today despite far-ranging critiques (Murris, 2016), and has resulted in a pedagogy that proceeds from the "simple to the complex, from the particular to the general, from the concrete to the abstract and from the empirical to the rational" (Egan & Ling, 2002, p. 94).

Socio-cultural theories of literacy

Influential twentieth century psychologist, Vygotsky, developed a theory which grounded learning in social and cultural contexts, and as a consequence theorists began paying more attention to the contexts outside the classroom in which literacy developed and how these contexts worked with the individual to produce literacy, e.g. the home, the community, grocery store visits, museums, and so on (Wager & Enriquez, 2020, p. 1065). In contrast to Piaget, Vygotsky was intrigued by interpersonal processes, and argued that "higher mental functions" such as reading and writing, perception, attention and reasoning have complex social origins such as social interactions and learning to use specific cultural tools (e.g. reading print). Learning, therefore, cannot be explained purely in terms of biologically determined, "natural" processes (Verbeek, 2010, p. 58). It is interesting to note how strongly the Cartesian binary of nature/culture is evidenced here.

Developing a socio-cultural theory of literacy through detailed ethnographic accounts, Shirley Brice Heath argued that literacy is a social and cultural act that consists of multiple forms of literacy, only some of which are valued in school contexts (Heath, 1983; Wager & Enriquez, 2020, p. 1065). One of the consequences of this is that children from middle to upper-class backgrounds are at a significant advantage at school, in that they are more likely to be frequently exposed to the kinds of literacy practices that are valued in the classroom (Pahl & Roswell, 2005; Verbeek, 2010).

Within a postructuralist paradigm, social anthropologist Brian Street developed a model of literacy as a socially situated practice (Street, 1984). This model is framed by an understanding that literacy practices can never be disinterested or autonomous because they mirror the philosophy of the culture from which they emerge, and in doing so they have a role in upholding power and hegemony. James Gee, a significant theorist in the social practices approach, argued further that different kinds of discourses require different kinds of engagement. Therefore , "[w]e never just read or write 'in general', rather, we always read or write something in some way" (Gee, 2003, p. 28). Each kind of text requires a "culturally and

historically separate way of reading and writing, and, in that sense, a different literacy" (p. 28). This led Gee to the conclusion that rather than speaking of literacy in the singular, we should rather speak of literacies in the plural because "literacy is multiple" (p. 28). Leander and Boldt observe that the social practice theories of literacy developed by Street and Gee have "significantly shaped the ways in which literacy is understood as defined and carried out in social and ideological practices rather than in isolated, individual cognitive skills and abilities" (2013, p. 41). Such theories have been foundational in understanding literacy as "associated with a range of social functions and meanings" (p. 41).

Critical literacies

In his seminal book *Pedagogy of the Oppressed* (1968), Paulo Freire conceived of teaching and learning as political acts of liberation, and suggested an approach to education based on posing problems in order to develop students' critical consciousness. Freire developed adult literacy programs whose purpose was to assist people to learn to read and write by building on the language, experiences and skills of the 'educatees', rather than imposing on them the culture of the 'educators' (Rugut & Osman, 2013, p. 23). Using this framework, literacy learning comes about through "critical dialogue as a reciprocal and participatory process between students and teachers" (Wager & Enriquez, 2020, p. 1065). Hilary Janks, noted critical literacy scholar, observes that Freire was "the first to challenge our assumptions about literacy as simply teaching students the skills necessary for reading and writing". He insisted that critical reflection on the process of reading and writing itself was a political act necessary for adult literacy learners to "regain their sense of themselves as agents who can act to transform the social situations in which they find themselves" (Janks, 2010, p. 13).

New Literacy Studies, multiliteracies and multimodality

New Literacy Studies sought to further broaden the definition of literacy beyond interactions with paper-and-pencil text, to include the way students read the world through images, digital encounters, performance and art (Kuby & Rucker, 2016, p. 12). Literacy is multiple, and

embedded in local contexts. These scholars are also interested in students' identities, and what they bring to the text (New London Group, 1996; Janks, 2010).

The term 'multiliteracies' was coined by a group of educational researchers whose ideas centered on a socially and culturally responsive curriculum with a commitment to social change (New London Group, 1996). The concept refers to multiple worlds connected in multiple ways (Stein & Newfield, 2006, p. 1). It has been used by many scholars to contest the idea of a discrete, universal literacy restricted to monolingual, monocultural and rule-governed standard forms of language (e.g. Gee, 1996; Street, 1995; Pahl & Rowsell, 2005; Janks, 2010; Abdulatief et al., 2018; Prinsloo, 2020). Although the concept 'multiliteracies' has many similarities with Reggio Emilia's 'one hundred languages', this is generally not a connection made by New Literacy Studies scholars, perhaps because of Reggio's strong links with early childhood education.

Multimodality is linked to multiliteracies in that it considers how different modes of representation and communication (e.g., gesture, gaze, image, sound, writing, body posture, music, and so on) "intersect, interrelate, and are interpreted and remixed to make up new meanings by the sign maker or student" (Wager & Enriquez, 2020, p. 1065). Stein and Newfield (2006) explain that the theoretical framework for the field of multimodality and education is multimodal social semiotics, which is interested in how human beings use different kinds (or modes) of communication, such as speech, writing, image, gesture and sound, as resources to represent or make meanings in the social world (p. 2). Teaching and learning are multimodal, in that "they happen mainly through the modes of speech, writing, action, gesture, image and space, all of which work in different ways with different effects, to create multi-layered, communicational ensembles" (2006, p. 2). The authors point out that these ensembles are never neutral, in fact they are "meaning-bearing signs" which are created in particular contexts (2006, p. 2).

Socio-cultural and critical theories of literacy have worked within a poststructural paradigm to greatly expand the definition of literacy beyond simply reading and writing. Far from the

autonomous, singular, alphabetic-based skill of the early 20th century, literacy is recognised as an historically, socially, and culturally situated practice. In Freire's terminology, literacy has been liberated from the idea of simply "reading the word" to more broadly "reading the world" (Freire, 1987). These theories have enabled a recognition that literacy practices are "patterned by social institutions and power relations" and that this has real implications in the world, in that "some literacies are more dominant, visible and influential than others" (Barton, et al., 2000, cited in Pahl & Roswell, 2005, p. 23).

However, in spite of these strides towards a more expansive view of literacy, dominant discourses of education are still heavily influenced by developmentalism and have the effect of ensuring that literacy continues to be measured, evaluated, and benchmarked, and students continue to be leveled, held accountable, and labeled as proficient or struggling if they do not neatly fit into the structures in place (Kuby & Rucker, 2016, p. 33). Wohlwend notes that a skills mastery discourse is shaped by a "mental model of literacy learning as individual skill-based, knowledge acquisition" and that this is done despite "widespread lip service" to the social practice discourse developed by Vygotsky, a discourse which "values scaffolding and emphasizes the need to assess what the child can do with assistance from more experienced cultural others" (Wohlwend, 2017b, pp. 50–51). Standardised assessments reinforce the idea of the child as singular, largely measuring children's literacy according to their abilities to work in isolation.[51]

This narrow view of literacy leaves little room for the multiple ways of reading, writing, and being literate as envisaged by multiliteracies or poststructuralism, and is further impoverished in a context where one language is afforded hegemonic power to subjugate the multilingual

[51] Janks, in a discussion about Foucault's argument that discourse produces truth, suggests the following reason for the continued dominance of the view of literacy as an isolated skill: "For example, under George W. Bush, quantitative psychometric research on literacy was increasingly viewed as the only valid 'scientific' research – it was the research that received government funding and informed government policy. Constructed as the 'true' discourse about literacy, this effectively excluded qualitative research based on ethnographic research methods and a socio-cultural theory of literacy. Here power was used to sustain a particular discourse and to establish its hegemony" (Janks, 2020, p. 50).

resources children bring with them into school. The constant measuring of 'progress' (labeled 'continuous assessment' in the South African curriculum) results in a hollowed out experience in the classroom. This experience echoes Boldt's (2009) observation: "Space for young children to use materials, social relations, and time in the classroom for anything other than predetermined academic outcomes—in other words, the time to play-with ideas, materials, and one another—has largely disappeared in today's classroom" (p. 12).

I now turn to the contributions made to this field of research by posthuman literacies scholarship. As I do so I am cognisant of the fact that posthumanist conceptions of literacy emerge from the rich histories outlined above. These bodies of work influence how posthumanist and 'new' materialist scholars have come to think about language and literacies, and are always entangled with the continuous questioning, rethinking, and stretching of language and literacy education.

Literacy unbound: A posthumanist orientation

Decentering the human

In recent years, scholars working with new materialist and posthuman perspectives have begun to unsettle ways of knowing that are sustained through the kind of policy discourses informed by developmentalism. Burnett et al. (2020) observe that, "constellating around a relational ontology," such work "challenges the individualist view of literacy development upheld by cognitive–psychological research" (p. 113), while also complementing sociocultural orientations by foregrounding the material, embodied and affective dimensions of young children's experiences with/in the world. What then does a posthumanist configuration of child produce regarding literacies pedagogy? In other words, what does a posthumanist orientation look like in a literacy classroom?

In education, there is a humanist tendency to look at the human subject rather than to observe events with their intra-active relationality and entanglements of material and human (Reynolds & Peers, 2018, p. 130). Scholars with a posthumanist orientation move beyond a focus on

linguistics and discourses to non-human organisms, materials and forces such as time and space as active agents with people in the production of knowledge (Kuby, 2019a). This is an acknowledgement that matter matters (Barad, 2007), and accounts for the frequent use of the term 'more-than-human' in posthumanist writing, a term which refers to the entanglements and assemblages of which humans form only a part. For example, as I write this dissertation I am increasingly aware of the fact that my authorial voice is in fact a multiplicity of agents working together, intra-acting to produce this work. As biologist Scott Gilbert points out in Tsing et al.'s book *Arts of Living on A Damaged Planet*, "we have never been individuals" (Tsing et al., 2017, p. M71). "I" am just a part of an ongoing, ever changing phenomenon including my bodymind, the computer on which I type and all its hardware, software and interconnectivity with the world through under-sea cables which form the backbone of the Internet, relationships with others (themselves also phenomena) ranging from family, pets, my desk and chair, the forest which beckons a short distance away, to friends and colleagues around the world, a myriad of texts in all forms, and … and … and. My writing happens in the in-between of these and so many more.

The "post" in posthumanism does not signify "after humans"; humans are a part of posthumanist theory. Rather, the prefix "post" signifies a moving on from defining and producing knowledge through the privileging of the anthropocentric gaze which puts "Man" at the ontological centre and in a position of superiority (Braidotti, 2013). Australian early childhood educators Affrica Taylor and Mindy Blaise (2014) describe an anthropocentric view of the world as one which involves the "normalised fixation upon exclusively human concerns, agency and exceptionalism that is the trademark of humanist knowledge traditions" (p. 377).

Thiel (in Zapata et al., 2018, p. 490) comments on the ethics surrounding a posthumanist orientation, noting that a consideration of the "trans-corporeality of bodies" is especially significant when we think about "what gets to count, who gets to count, and how they are being counted". Transcorporeality involves viewing the human as inseparable from the more-than-human world, but also concerns itself with "the ways difference gets produced onto and through bodies from these entanglements and acknowledgment of such entanglements"

(Zapata et al., 2018, p. 491). Thiel notes that childhood literacy practices are often seen as part of what Alaimo (2010) would call a 'dematerializing network', an attempt to regard bodies as entirely separate from the event. She explains that in literacy practices, this might result in "more-than-human bodies of writing" being ignored or certain materials and practices not being accepted. 'Dematerializing' can also mean ignoring the ways in which human bodies are classed, raced and gendered, "such as the ways they are constructed through perceptions of acceptable/unacceptable materials and practices" (Zapata et al, 2018, p. 491). I understand dematerializing in this context to be a manifestation of the body/mind binary, and this matters because such a binary often locates problems in individuals and tends to "ignore material ramifications of political, social, and economic world making, and thus writing instruction often becomes about how can we fix a body rather than what can bodies do" (Zapata et al., 2018, p. 491).

Posthumanism assumes ontological entanglement. It decenters the human, somewhat flattening the ontological hierarchy that has been assumed in Western philosophy for centuries. Instead of viewing the world from the perspective of humans at the centre, with all other species and materials existing through the gaze and for the purpose of humans, posthumanism insists that humans take their place alongside all other earth-dwellers with whom we share this planet, including nonhuman species and materials, and all are recognised to have (mutual, distributed) agency. Child is not a bounded subject, but is a phenomena formed by intra-actions with other humans and more-than-humans.

Taylor and Pacini-Ketchabaw urge education researchers and practitioners to use the idea of the Anthropocene to "rethink our place in the world" (2015, p. 507) by decentering the human.[52] What this means in practice is doing away with the developmental, child-centred

[52] An era so called due to the impact of humans on the ecology and geology of the earth. This term is contested (Haraway, 2016) and yet serves a useful purpose as a short-hand reminder of the devastation wrought by 'Man' on this planet. Haraway thinks of the Anthropocene as "more a boundary event than an epoch … The Anthropocene marks severe dis-continuities; what comes after will not be like what came before" (2016, p. 100). See Anna Tsing et al.'s (2017) *Arts of Living on a Damaged Planet* for much more analysis of the Anthropocene.

pedagogy which has dominated education for decades, and rather focus on the common worlds shared by humans and "other species, entities and forces" (2015, p. 508).

Barad (2007) uses insights from quantum physics to collapse the binary between ontology and epistemology, suggesting that knowing is a material practice of engagement as part of/with the world as the world is becoming. She explains: "Practices of knowing and being are not isolable; they are mutually implicated. We don't obtain knowledge by standing outside the world; we know because we are of the world. We are part of the world in its differential becoming" (2007, p. 185). Humans don't stand apart from the world and produce knowledge on what they see from a "view from nowhere" (Haraway, 1998, p. 589).[53] Rather, humans are part of the world, constantly intra-acting with time, space and matter, and therefore thinking cannot be separated from becoming or doing. Haraway (2016) describes this idea as follows:

> Becoming-with, not becoming, is the name of the game; becoming-with is how partners are, in Vinciane Despret's terms, rendered capable. Ontologically heterogeneous partners become who and what they are in relational material-semiotic worlding. Natures, cultures, subjects, and objects do not preexist their intertwined worldings. (Haraway, 2016, pp. 12–13)

Two recent examples of this "relational material-semiotic worlding", of materiality and literacies co-constituting each other, is that of the hashtag convention developed by Twitter users, and the widespread use of emojis in digital messaging practices (Merchant, 2017, p. 247). I explore many more examples of this kind of worlding in Chapter 5 when I discuss the data for my study.

As educators and researchers, we need to analyse how the in-between spaces (rather than simply the subject or the object/material) can help us reimagine the literacy practices in a classroom (Reynolds & Peers, 2018, p. 130).

[53] Haraway also refers to this as the "god trick" (1998), which I discuss again in Chapter 4.

Thinking/becoming/doing rhizomatically

As mentioned in Chapter 2, many poststructuralist and posthumanist education researchers have drawn on Deleuze and Guattari's proposal[54] of the rhizome as an alternative model of knowledge construction (e.g. Olsson, 2009; Lenz Taguchi, 2010; Leander & Boldt, 2013; Murris, 2016a; Giorza, 2018; Thompson, 2019; Kuby & Rucker, 2016; Kuby et al., 2020). The traditional Western model of knowledge construction can be understood in terms of tree-like ('arborescent') hierarchical logic in which thinking is organised in terms of a clearly defined genealogical development, evolving vertically as a fixed, upright trunk from a single point of origin (like the oak tree grows from the acorn), and it can be clearly separated from the world around it (Thompson, 2019, p. 195). Thinking in this way encourages clearly defined boundaries between different disciplines (as in school subjects); as well as a linear, step-by-step approach to knowledge production.

Deleuze and Guattari's rhizomatic theory proposes a radically different approach to knowing, learning and being: that these occur in the way that rhizomes sprout, in "multi-directional and unpredictable ways" (Giorza, 2018, p. 76). A rhizome is a flat, horizontal system of roots growing beneath the surface of the ground which doesn't have a centre or fixed boundaries. It is always spreading, sending out new shoots from its nodes (Deleuze & Guattari, 1987). The rhizome ceaselessly makes connections and is always in the process of "becoming" (Giorza, 2018, p. 78). Rhizomes are also about difference: no two connections are the same. Something new is always being produced (Kuby & Rucker, 2016, p. 33).

While the tree or arborescent image depicts knowledge structures that are stable, hierarchical and linear, rhizomatic thinking is like a web in that it has "no beginning or end; it is always in the middle, between things" (Deleuze & Guatarri, 1987, cited in Thompson, 2019, p. 134). Thompson takes up this concept by suggesting that we need to trouble the notion that knowledge acquisition happens in a linear progression. There is no beginning, middle or end to the way new knowledge is created, rather the process is fluid and entangled (p. 138). The image

[54] From *A Thousand Plateaus* (1987).

of the rhizome is one which "foregrounds connectedness to illustrate how new learning processes e/merge" (196).

Giorza (2018) sees Deleuze and Guattari's theory of rhizomatic thinking as having strong resonance with Malaguzzi's 'one hundred languages' in that:

> Difference is a positive phenomenon and does not represent opposition, lack, or the either/or but rather the "and .. and .. and" of multiplicity (Deleuze & Guattari, 1987, p. 25). A concern for identity, essence and definition is replaced with an exploration of difference, variation, relationality and fluidity. Arborescent thought establishes the notion of being and identity, while the rhizome is always in the process of "becoming". (Giorza, 2018, p. 78).

The tree image is deeply embedded in our way of life and has dominated Western thought (Kuby & Rucker, 2016, p. 34). Our education system is a clear example of this, as it is hierarchical and linear, like a tree's root system and structure. This arborescent way of thinking judges the world from a fixed, singular position, or that proceeds only in one, linear direction, and according to Deleuze this image of thought has played a repressive role: it stops us thinking (Deleuze & Parnet, 1987, p. 13 cited in Dahlberg & Moss, 2009, p. xix). Education, then, becomes more of an "apparatus of taming" instead of a place for learning.

Leander & Boldt (2013) urge educators and researchers to consider the rhizomatic structure of literacy, claiming that "[l]iteracy exists in rhizomal relations. Literacy is unbounded. Unless as researchers we begin traveling in the unbounded circles that literacy travels in, we will miss literacy's ability to participate in unruly ways because we only see its properties" (p. 41). They invite us to "consider literacy in 'and . . . and . . . and' relations" (p. 41). Kuby and Rucker take up this invitation and consider the rhizomatic nature of literacies as multiplicities, inter-connected, and spreading in unexpected directions. They explain, "Children (and teachers) are expected 'to be' certain literacy learners in schools", because literacy is done in certain pre-determined ways (Kuby & Rucker, 2016, p. 34). In contrast, "[r]hizomatic principles help us to conceptualize literacy as rhizomatically social—'and . . . and . . . and . . .'—where students,

teacher, and literacy tools are connected, producing new ways of doing and being literacy" (p. 34). The authors suggest that the principle of multiplicity can assist us in conceptualising literacy as "fluid, contextual, porous, and definitely not fixed" (p. 34).

Entangled intra-action

Barad proposes that the term intra-action (which I discuss in Chapter 1) is at the heart of her philosophy, and that it implies that nothing exists outside of complex relational entanglements and that these entanglements are not permanent or exclusive. Giorza notes that this "ontological move reorients the educational project and demands an un-ravelling of well-established and entrenched thoughts and practices" (Giorza, 2018, p. 56).

This idea of agencies emerging through their intra-action enables us to conceptualize alternative ways of thinking about the human subject (Braidotti, 2013, p. 37) as multiple, fluid, and constantly on the move. In the same vein, Barad regards our knowledge making practices as social-material enactments (Barad, 2007, p. 26), grounded in intra-actions involving human and non-human species and forces. Intra-action therefore has profound implications for pedagogy, as it challenges us to stop thinking of students and teachers as separate individuals, but rather as already entangled with each other and the materials and systems which make up their worlds (Kuby et al., 2019, p. 70).

Lenz Taguchi, drawing on Barad (2007), explains:

> Individuals, just as non-humans and things, emerge through, and as a part of, their entangled intra-actions with everything else. Therefore we do not even pre-exist our interactions with the world. We are nothing until we connect to something else, even if it is simply the breathing of oxygen. Every organism is in connection with at least one other organism or matter to be able to live, as a condition of its existence. This is why we do not consider ourselves as an entity in the world, but rather as a consequence of the world. Everything that happens happens from within a mutual co-existence of a

> whole. Hence, what we are, or rather, continuously become, cannot be separated from our process of knowing. (Lenz Taguchi, 2010, p. 41)

Posthumanist scholars use this theory of intra-action to focus on what is produced (or what is in the process of becoming) by the entanglement of human-material intra-actions, rather than focusing on children acting on materials. Kuby and Rucker frame these relationships "using a model of intra-action that is central to quantum physics", and this means that "the individual materials and people are something different when they enfold and entangle together in the in-between-ness. Something new comes from the entanglement of the parts" (2016, pp. 13–14).

This orientation necessarily expands the researcher's focus from people and discourses, to "embrace how materials (space, time, nonhumans) matter in literacy. As educators, we must come to see that learning takes place *in-between* the child and materials/time/space/other people" (Kuby & Rucker, 2016, p. 6). This matters ethically because as Barad notes (2007, p. 235), "[p]articular possibilities for (intra-)acting exist at every moment, and these changing possibilities entail an ethical obligation to intra-act responsibly in the world's becoming, to contest and rework what matters and what is excluded from mattering".

Hackett and Somerville (2017) propose that young children's literacies should be seen "not only as embodied sensory experiences but embedded in and inseparable from their entanglement with the world" (p. 388). Posthuman readings of early literacy, for these authors, engage with the possibility to "shift the narrative, to reconceptualise emergent literacy in ways that reconcile with young children's being in the world" (p. 389).

Kuby and Roswell (2017) make a connection between relational ontology and questions of ethics in an editorial for a special issue for the *Journal of Early Childhood Literacy*. They write: "This is political, ethical and justice oriented. As mothers/researchers/teachers they [the contributors] are consumed with thinking about how materials (books, stickers, level systems) produce their children (and other children) when entangled in schools, systems and pedagogies of levelling children and books" (p. 289).

Posthumanism is rooted in a relational ontology, meaning we earth-dwellers (humans, nonhumans, materials, forces) are all "always already entangled with each other in becoming, in making, in creating realities (the world)" (Kuby & Roswell, 2017, p. 288). A relational ontology acknowledges the impossibility of independent or individual subjectivity, or in Haraway's words, the idea of bounded individualism "in its many flavors in science, politics, and philosophy has finally become unavailable to think with, truly no longer thinkable, technically or any other way" (2016, p. 5).

Burnett et al (2020, p. 127) describe two important contributions they believe the recent insertion of posthumanism into literacy studies has made. First, by explaining "how deficit discourses are themselves sustained through sociomaterial relations"; and second, by exposing "the inadequacy of deficit perspectives by presenting alternative accounts" (p. 127). They suggest that holding together these two perspectives is important for the purposes of engaging in questions of social justice "in ways that acknowledge the complexity and multiplicity of what goes on in educational settings".

Where do these ideas of decentering the human, thinking rhizomatically, and entangled intra-actions, take us in terms of literacy pedagogy?

Literacy desiring

Kuby and Rucker (2016) introduce the term "literacy desiring" to theorise the fluid, sometimes surprising, "unbounded and rhizomatic ways multimodal artefacts or things come into being through intra-actions with humans and nonhumans such as time, space, materials and the environment" (Kuby & Rucker, 2016, p. xv). The concept is based on Deleuze and Guattari's configuration of desire as a positive force, rather than synonymous with a negative lack or need. For Deleuze and Guattari, the "logic of desire is about production –emerging, producing and becoming" (cited in Kuby & Rucker, 2016, p. 36).

In traditional literacy education, children are assigned levels and labels based on what they attain or lack in relation to predetermined benchmarks. However, in a Deleuzian approach to

desire, teachers should "look for what children are chasing after—their interests, what they desire—and take these noticings and children's questions seriously" (Kuby & Rucker, 2016, p. 36; Olsson, 2009).

One example of looking for what children are chasing after is proposed by literacy researcher Jaye Thiel when she encourages teachers to "gaze upon play" as one of many sites "where literacy learning happens" (Thiel, 2015a, p. 46). She urges educators to be responsive to a "wider repertoire of literacy practices", including embodied literacy through the reconstruction of text through movement (pp. 46–47). Thiel goes on to quote Wohlwend, a scholar who has done extensive research on the relationship between play and literacy, as follows, "[W]e tend to look for some print on page when we consider children's literacy products and to discount and overlook the action texts that children play" (Wohlwend, 2013, p. 6 cited in Thiel, 2015a, p. 46). She notes that this can be particularly detrimental for "working-class and working-poor children", who are frequently "required to spend more time in academic literacies than in playful composition". Thiel offers an example of children embodying super-heroes in their play at an after-school centre, as engaging in "brilliant literacy work" and goes on to note that embracing a "vast repertoire of literacies can provide an opportunity to reposition children who are typically marginalized in classrooms" (Thiel, 2015b, p. 46). As mentioned above, the cuts we make as educators matter, and 'cuts too small' when it comes to what is and is not regarded as literacy, can have very detrimental consequences for marginalised students. As suggested in Chapter 2, this is particularly evident in a context such as South Africa where a narrow definition of literacy undermines the rich resources, linguistic and otherwise, that children bring with them to school for the purposes of making meaning (McKinney, 2017; Abdulatief et al., 2018).

Literacy desiring is about what is produced or created *in-between* people, events and materials rather than focusing on an end product. "The literacy desiring we conceptualize is about the present processes of producing – a force, a becoming, a coming together of flows and intensities" (Kuby & Rucker, 2016, p. 315). Traditional literacy practices are about knowledge production by humans, for humans. In contrast, this idea of desire in education means that the

focus is on the new knowledge produced through the intra-actions between human and non-human. Literacy desiring is about the "present, in-the-moment intra-actions (mutually constitutive relationship between humans and nonhumans), often without a clear question, inquiry, or end goal in mind" (Kuby & Rucker, 2016, p. xvii). Giorza (2018, p. 185) sees this idea as a way of challenging the multiliteracies discourse that tends to focus more on the products of pedagogy than on its processes.

The use of the verb 'desiring' rather than the noun, 'desire', works to draw attention to the "intra-actions, movements, and surprises" (Kuby and Rucker, 2016, p. 5) that are produced by students, materials, space and time in a literacy classroom. The present continuous verb is used for the purpose of indicating "something active, verb-like— something students are doing with materials in creating, becoming, and being writers" (Kuby & Rucker, 2016, p. 19). It refers to a process, a doing, rather than a thing. The authors also sometimes make this plural, as in 'literacy desiring(s)' to indicate that rather than referring to something singular, literacy desiring can be an assemblage of students/materials. The use of desiring(s) also points to the fluid, multiple nature of desirings (Kuby & Rucker, 2016, p.19).

An intra-active pedagogical theory deems that both human and nonhuman are entangled as performative agents (Kuby & Rucker, 2016, p. 29). While in traditional literacy education language is privileged, in literacy desiring, language is regarded as being *a part* of literacy, together with materials (including time and space) which are also active agents with humans and language. The material turn to which posthumanist scholars refer does not postulate that language is not important, but that a true(r) understanding of knowledge production must consider the intra-activity of humans and nonhumans. "From this paradigmatic stance, literacy is not confined to alphabetic ways of (re)presenting (written, orally) but also occurs through bodies entangled with materials . . . " (Kuby & Rucker, 2016, pp. 39–40). Literacy desiring is about what happens in the intra-actions in-between "students-with-materials-space-time" (Kuby & Rucker, 2016, p. 5). In Baradian terms, children and materials become phenomena of intra-acting agencies (Giorza, 2018, p. 229).

What does it 'mean' to engage in posthuman literacies? The posthuman child is the child that is not at the center, but always entangled materially *and* discursively with human and more-than-human bodies in a non-hierarchical, 'flattened' ontology (Lenz Taguchi, 2010). This suggests that far from viewing the child as a bounded subject coming to a text, the child is in fact part of a rhizomatic phenomenon that has no beginning and no end. In this storying of literacy, and using the 'hundred languages' as well as the figuration of posthuman child, literacy is part of the entanglement of thinking and working and making and becoming and troubling and togethering.[55]

Dahlberg and Pence (2009), writing about early childhood education, argue that society today puts a "tremendous effort into taming, predicting, preparing, supervising and evaluating learning" (p. xiii). Kuby and Rucker (2016, p. 30) throw out the challenge: Instead of taming and reducing learning to technical discourses and practices, why not imagine how literacy learning can run wild?

[55] "Togethering" is an idea proposed by Tim Ingold (2018, p. 66), for example: "[t]he anthropological field of participant observation is one in which difference draws people together in commoning rather than dividing them in the contraposition of their respective identities. It is a field not of othering but togethering."

Chapter 3: A trip to Reggio Emilia

As I have chosen to focus my enquiry on literacy practices in a Reggio Emilia-inspired, independent school, pedagogy and practices inspired by the Reggio Emilia approach play a significant role in my research. This chapter will give an account of a number of key ideas which are threaded through this work.

Reggio Emilia is a town in Emilia Romagna, a province in the North of Italy. It is known in many countries for its development of an exemplary early childhood education system, often referred to simply as 'the Reggio way'. For several decades, Reggio Emilia preschools have captured the interest of teachers and education researchers around the world, rising to global prominence in the early 1990's when the Diana school of Reggio Emilia was recognised by Newsweek magazine as the best early childhood program in the world (Kantrowitz & Wingert, 1991). A Reggio exhibition has travelled around the world, with thousands of educators and other interested people flocking to see it each year. Annual study groups are also organised from many countries around the world, with delegates spending time in the city of Reggio Emilia, visiting the schools and attending lectures and workshops to learn more about the pedagogy and philosophy behind these municipal schools.

Notwithstanding this global influence, many educators, writers and scholars associated with this approach have resisted the notion that the Reggio Emilia pedagogy can be exported or transferred like a product from one setting to another (e.g. Rinaldi, 2006; Dahlberg & Moss, 2006, p. 7).[56] As Stremmel notes , "[It] is not a method or prescribed curriculum to be copied. It is a socially and culturally embedded philosophical approach, a response to a strong desire for a new vision of democratic education" (2012, p. 134).

[56] This explains why schools refer to themselves 'Reggio Emilia-inspired' rather than, for example, 'a Reggio Emilia school'.

Army tanks, horses and trucks

The Reggio Emilia phenomenon had its beginnings when parents in the Italian town by the same name were searching for educational solutions for their children in the chaotic aftermath of the Second World War (Edwards et al., 2012). Loris Malaguzzi (a young school teacher at the time) heard that in a small village a few miles from the town of Reggio Emilia, people had decided to build a school for young children as part of the reconstruction project. Upon riding out to see what was happening, he found women and men salvaging bricks from bombed out buildings. Malaguzzi describes the unfolding of events in an interview, remarking that " … you have to agree that seeing an army tank, six horses and three trucks generating a school for young children is extraordinary" (Malaguzzi, 2012, p. 35). These had been left by the retreating Germans and funds were raised by the sale of these items. Soon more such schools were opened, all created and run by parents determined to provide their children with an education very different from their own upbringing under fascism.

The philosophical foundations of the Reggio Emilia pedagogy developed from concern about Italy's political role during the Second World War and, in particular, its fascism. From this concern a philosophical practice grew (and continues to grow) that regards schools as places for democratic conversation, critical and creative thinking and caring relationships (Stremmel, 2012, p. 134). Through two decades of problems with funding and other difficulties, these schools were tenaciously defended by the Union of Italian Women and local cooperatives. During the 1960s citizens became increasingly vocal about the need for free, quality child care as women were entering the workforce in growing numbers. After much lobbying, in 1968 a law was passed which enabled municipalities to take responsibility for early childhood education.

These beginnings have grown "into a model of early childhood education that is creative, democratic, inclusive and appropriate to local conditions and history" (Giorza, 2018, p. 89).[57]

An alternative to normativity

Reggio Emilia's contribution to early childhood education plays an important part in my study because it offers an alternative to an increasingly dominant discourse in education and schooling, referred to in the Introduction, and described by Dahlberg and Moss (2005, pp. vi–vii) as inscribed with the values of modernity: the desire for objectivity, universality, certainty and mastery. This dominant discourse is articulated through prescriptive 'best practices' and 'minimum standards' (Moss & Dahlberg, 2008; Nxumalo, 2016, 2019) and the resulting immense pressure brought to bear on children to fit a normative profile.

Dahlberg and Moss highlight the town of Reggio Emilia's continued commitment to reclaiming the school as a public space of central importance to democratic societies, in contrast to the neoliberal framing of education as an individual commodity and the school as a business competing in a market to sell its products (Dahlberg & Moss, 2006, p. 2). The municipality of Reggio Emilia has a legacy of left-wing politics and sees the investment in early childhood as an investment into the 'commons' – as evidenced by spending up to 29% of its entire annual budget on early childhood education (Giorza, 2018, p. 90). Children from all socioeconomic and educational backgrounds attend the programs, and children with disabilities are given first priority for enrolment and fully mainstreamed in the schools, following Italian law (Edwards et al., 2012, pp. 187–188).

While Stremmel (2012) acknowledges the fact that many of the principles underlying the Reggio experience reveal the influence and inspiration of progressive educators and developmental theorists, he points out that the Reggio experience challenges the Piagetian

[57] Note Giorza's use of the word democratic: "The concept of democracy as a pedagogical principle works to enact an egalitarian, participatory, inclusive practice requiring on-going re-negotiation. It does not refer to a centralized system of representation or deliberations towards a fixed majority consensus" (Giorza, 2018, p. 89).

interpretation of the child as a singular scientist, constructing knowledge of the world individually while progressing through a series of developmental stages (2012, pp. 134–135). Piaget's theories influenced the thinking behind the Reggio experience in the sense of taking seriously children's thinking and experience, but Reggio takes it further, emphasising the social aspect of learning. Malaguzzi was inspired by Vygotsky's (1978) idea that learning occurs in social contexts, especially through interactions involving problem solving and open ended investigations. This social constructivism is a good theoretical foundation for an approach that views education as a system of relationships in which children and adults collaborate and negotiate meaning through their experiences.

So while the ideological roots of the Reggio Emilia approach are "fundamentally child centered, progressive, and social constructivist, the approach to curriculum and pedagogical orientation also is 'emancipatory'" (Stremmel, 2012, p, 135). In other words, children are seen from a "social constructionist" perspective as powerful agents who can challenge and transform ideas (and indeed society) through discourse with adults and other children. Dahlberg & Moss (2006, p. 12) and Lenz Taguchi (2010, p. 10) describe the Reggio Emilia school as being a place of "democratic political practice" and as being "built on strong democratic values", respectively. In the remainder of this chapter I will discuss several aspects of the Reggio Emilia philosophy and pedagogical practice as it relates to democracy, including the child as citizen, the negotiated curriculum, the metaphor of the one hundred languages of children, the practice of pedagogical documentation and Malaguzzi's conception of knowledge as a "tangle of spaghetti".

The child as citizen

The central idea at the heart of the Reggio Emilia approach is the image of the child as a capable, resourceful, powerful protagonist in their education (Malaguzzi, 2012; Rinaldi, 2006).[58]

[58] In Chapter 4 I discuss how posthumanism enables us to go beyond seeing children as either incompetent (a deficit image of child) or competent (as in the Reggio philosophy). An understanding of Barad's theory of intra-action helps us to see that children "emerge through, and as a part of, their entangled intra-actions with everything else" (Hultman & Lenz Taguchi, 2012, p. 531).

For Rinaldi, the theories we have about children, and about how they construct knowledge, have significant implications for how we teach and for how schools are structured. The image of the child is "a cultural (and therefore social and political) convention", and one which "makes it possible to recognize (or not) certain qualities and potentials in children, and to construe expectations and contexts that give value to such qualities and potentials or, on the contrary, negate them" (Rinaldi, 2006, p. 83).

Malaguzzi urges educators to view children as producers of knowledge, not merely consumers (2012, p. 55). Dahlberg et al. (2007, p. 131) describe the pedagogues of Reggio Emilia as working with an image of child that is one of "co-constructor of knowledge, identity and culture". The child's search for meaning drives the educational process, and is therefore an indispensable ingredient in the school. Children are competent co-constructors of knowledge, capable of engaging in dialogue and debate, active protagonists together with parents, teachers and their wider community in the quest for learning about the world and their place in it (Rinaldi, 2006). This image of the child as a citizen with rights to participate in society is seen throughout the system of Reggio Emilia preschools.

For Wien, inspired by the Reggio Emilia philosophy and using its ideas and practices as reference points for interpretation in her Canadian context, this idea of capability is extended to teachers and encourages critique of dominant discourses in education: "This image … invites us to consider standardized, prescriptive, canned, and 'teacher-proof' programs inadequate to the creative potential in children and teachers" (Wien, 2008, p. 6).

The configuration of children as citizens in their school experience echoes and is inspired by Dewey's understanding of democracy in education as an "associated mode of living" (Dewey, 1944, p. 87) and is also seen in Biesta's distinction between education *for* democracy (being an education that prepares citizens to participate in democracy as a political system) and education *through* democracy, involving attending to the democratic quality of the school in terms of its internal organization, as well as the learning environment more generally (Biesta,

2006, p. 122). In Reggio Emilia schools the child learns about their role as citizens through inhabiting citizenship in their daily experience at school, rather than learning about citizenship as an abstract representation of a duty they will need to fulfill at a later stage in their life.

Malaguzzi's practice of taking children into their city as part of the educative experience spoke about the desire to break down the artificially constructed walls between schools and the communities they find themselves in. Once a week they "took the school into the city". Loading themselves, the children and their equipment onto a truck, they conducted "school activities and exhibitions in the open air, in the squares, in the public park, under the colonnade of the Municipal Theater" (Malaguzzi quoted in Vecchi, 2002, p. 12). This practice resists what Jickling et al., referencing Sheridan, refer to as the "domestication of education", that is, "taming it, restraining it, confining it, controlling it" (Jickling et al., 2018, p. x). Education, as it is most often encountered in the 21st century is "a world of abstraction and heavily, perhaps even oppressively, mediated experiences". According to the authors, compliance with these norms of indoor study "denies our physicality" (p. x).

The invitation for children to participate in cultural life is a hallmark of Reggio Emilia as a city, and is noticeable to the many visitors who flock there every year. One example of this participation is the remarkable theater curtain at the historical Aristo theatre, designed and produced by young children from the municipal preschools of Reggio Emilia (Vecchi, 2002, p. 8).

The children of Mamela House were encouraged to regard themselves as citizens of the city of Cape Town through weekly field trips exploring different aspects of the city, as well as recycling initiatives, beach clean-ups, and other experiences that took them out of the classroom. Although field trips were suspended for much of the year of my study, the school moved outdoors once or twice a week by conducting 'forest school mornings' at a nearby green belt.

A negotiated curriculum

One of the ways in which citizenship is embodied in a Reggio Emilia school is the practice of *progettazione*, loosely translated as extended iterative project work (Giorza, 2018). Howard Gardner, who developed the theory of multiple intelligences (1983), notes that "long-term engrossing projects, which are carried out in a beautiful, healthy, love-filled setting" are "the principal educational vehicle" of Reggio Emilia schools (Gardener, 2012, p. xiv). In addition to the many other activities which one is accustomed to seeing in preschools, such as spontaneous play with blocks, dramatic play, outdoor play, listening to stories, cooking, housekeeping and dress-up activities, as well as various art activities such as painting and ceramic work, all children in Reggio Emilia preschools are encouraged to be involved in extended projects or investigations throughout their years in the school. Rinaldi (2005, p. 19, cited in Edwards et al., 2012, p. 111) writes that *progettazione* evokes "the idea of a dynamic process, a journey that involves the uncertainty and chance that always arises in relationships with others". Project work has no predefined progression, no outcomes decided before the journey begins. It can grow in many directions. For the teacher, it means "being sensitive to the unpredictable results of children's investigation and research" (p. 112). *Progettazione* are therefore flexible, dynamic, and fluid, involving a continual negotiation between children and adults regarding decisions and choices of what to do and where to go next in terms of the project. Projects have a beginning, but seldom is there a definite path to where they are going (Stremmel, 2012, p. 139).

This practice of the *progettazione*, taken together with documentation (discussed below) results in a negotiated curriculum (Stremmel, 2012, p. 138). Much of the curriculum involves projects or investigations in which the children and adults question, hypothesize, explore, observe, discuss and represent their ideas and understandings, and then revisit these ideas to clarify and refine their thinking (Forman & Fyfe, 2012). Stremmel calls this a 'negotiated curriculum' because it is neither child-centered nor teacher directed. Rather, the curriculum is "child originated and inspired and teacher framed and supported" (Stremmel, 2012, p. 138 quoting Forman & Fyfe, 1998, p. 240).

In Chapter 5 I discuss a project that emerged during the course of my research at Mamela House, that of a monster puppet theatre, which started as a provocation from teachers and developed into something unexpected as the children were given space and time to allow their work to grow in different directions.

Documentation as a democratic practice

I discuss the practice of pedagogical documentation at length in Chapter 1, and will not repeat that discussion here. Suffice it to say that the kind of listening required in an ethically aware pedagogy of encounter is complementary to the idea of posthumanist experimentation (Giorza, 2018, p. 91).

Documentation has also been described as a "tool for democratic meaning making" (Stremmel, 2012, p. 138) and an ethical means of assessing what children know and understand, in contrast to the process of judging and measuring children's work in relation to some standard of acceptability. It is also an essential part of developing a negotiated curriculum, as discussed above.

The one hundred languages of children

…The child has
A hundred languages
(and a hundred hundred more)
But they steal ninety-nine.
The school and the culture
separate the head from the body …
(Malaguzzi, 2012, p. 3)

Murris and Haynes (2020, p. 30) call the 'one hundred languages' "[a] powerful critique of the privileging of the dominant two languages" in education, i.e. reading and writing. They

understand the metaphor to have two applications: firstly, on a physical level, it refers to the introduction of "material-discursive tools for meaning-making in schools, such as visual arts, physical movement, video, digital cameras, augmented realities, and computers" (Murris & Haynes, 2020, p. 30). And secondly, as interpreted by Rinaldi (2006), at a symbolic level the hundred languages are a "metaphor for crediting children and adults with a hundred, a thousand creative and communicative potentials" (p. 175).

This metaphor of 'one hundred languages' acknowledges the multiple and infinite ways that children express their thoughts and hypotheses in making sense of the world of which they form a part. Concomitantly, there are infinite possibilities for educators to conceive children's communication, participation, and intra-action with materials. And perhaps most importantly, this metaphor communicates a responsibility to resist privileging one language at the expense of the others. According to Giorza, "Children tend to recruit from the environment whatever is most eloquent for their purpose and constantly switch between modes and expressive 'languages' (until they are schooled into using the one dominant, acceptable one – the written, verbal language) (2018, p. 92). Reggio Emilia pedagogy therefore deliberately broadens the focus of literacy beyond exclusively reading and writing skills (Dahlberg & Moss, 2010, p. xviii-xix), troubling the still-dominant humanist focus in education on the written word (Murris, 2016a, p. 154).

The concept of one hundred languages is not only a way of crediting children and adults with multiple communicative potentials, "it is a declaration of the equal dignity and importance of all languages, not only writing, reading and counting . . . for the construction of knowledge" (Rinaldi, 2006, p. 175). I enter into this expansion of the ideas of languages and literacies by taking up Kuby and Rucker's concept of literacy desirings, extending the boundaries of literacy to include the intra-actions 'between' human and nonhuman, resulting in assemblages or phenomena which go beyond the human.

As expression in many forms plays such a significant role in the Reggio Emilia philosophy and practice, it has been noted that this approach "has meant experimenting with the encounter between two 'powerful' languages: that of the word, traditionally dominant in schools, and the visual language, closer to the world of art" (Vecchi & Giudici, 2004, p. 145). This dialogue between atelier (loosely translated as an art studio within the classroom) and pedagogy "is bound to extend to relationships with other languages, continuously renewing itself in ongoing and never-concluded research, able to nurture curiosity and elicit new questions" (p. 145).

What about the use of technology as an apparatus for enhancing/creating more languages? Technology is described by Rinaldi as playing a pivotal role in assisting the children in designing and producing the theater curtain described above. I include this quote in full as it speaks to the important role technology plays as one of the 'hundred languages' in my study:

> [Using technology] … The children manipulate the images, reducing them, enlarging them, going inside them to dominate them and, through them, to unleash new graphic and imaginative possibilities. This 'contamination,' viewed as a mixture of knowledge-building paradigms, of epistemologies, of cognitive modes and models, seems to be fostered and enhanced by the use of technologies such as the computer, video, overhead projector, and so on. (Rinaldi, 2002, quoted in Vecchi, 2002, p. 16).

Rinaldi's use of the word 'contamination' when describing the intra-relationality of technology with other visual and discursive languages used by children is echoed in Tsing's concept of "contaminated diversity": that no thing or person is unaffected by the things and people around them. "Contaminated diversity is not only particular and historical, ever changing, but also relational. It has no self-contained units; its units are encounter-based collaborations" (Tsing, 2015, p. 72). I will discuss the use of technology and its application to digital literacy and literacy pedagogy in greater detail in Chapter 5, in my diffractive analysis of the pedagogical documentation produced by the children of Mamela House.

Knowledge as a tangle of spaghetti

The Reggio approach is characterised by a willingness, inspired by Loris Malaguzzi, to be open to new perspectives, to border-cross into many different fields, including but not limited to education, philosophy, architecture, science, literature, and visual communication. This willingness is perhaps best observed in a theory of knowledge articulated by Malaguzzi as 'a tangle of spaghetti' (Dahlberg & Moss, 2006, p. 6). Rinaldi confirms this perspective by saying that "learning does not proceed in a linear way, determined and deterministic, by progressive and predictable stages, but rather is constructed through contemporaneous advances, standstills, and 'retreats' that take many directions" (Rinaldi, 2006, p. 131). Malaguzzi's 'tangle of spaghetti' figuration of knowledge production is similar to the Deleuzian idea of knowledge as rhizomatic, an idea which I explore in Chapter 2.

According to Murris (2016a, p. 171) the spaghetti metaphor challenges the familiar constructionist approach to teaching as mediation, mentoring or modelling. It opens up the possibilities of pedagogical encounters which, rather than regarding the teacher as the knowledge expert who helps the less knowledgeable novice to move one step at a time from known to unknown, foregrounds an alternative intra-active pedagogy whereby teachers make room for a multitude of different ways of thinking and being.

Lenz Taguchi, whose work has done much to make the Reggio Emilia philosophy accessible to educators and scholars around the world, notes that this is a "grass-roots movement" that can be viewed as a "resistance to taken-for-granted and normalising views of development and knowledge production", views which "imply the existence of a single best and most efficient theory of learning and development" (Lenz Taguchi, 2010, p. 10). Bearing this in mind, we now move to the next chapter in which I develop a posthumanist framework for thinking about and extending some of these key tenets of the Reggio approach to the theorypractice of an intra-active pedagogy.

Chapter 4: Expanding the gaze— A posthumanist framework for an intra-active pedagogy

This chapter explores what emerges from a posthuman framework when imagining an intra-active literacy pedagogy in an early primary school environment. This entails moving beyond the humanist philosophy which drives the educational project in western society. In Chapter 5 I will refer back to these ideas in my analysis of the pedagogical documentation which makes up the data for this study.

Queering[59] the nature/culture divide

The traditional, western model of schooling is one in which knowledge is understood to be about the world represented through words, images and concepts (Thompson, 2019, p. 16). Children go to school to learn *about* the world and to learn the sorts of skills, competencies and habits needed for participation in adult human societies. The value of their embodied experience as *part of* the world is not recognised as an important contributor to knowledge production, rather they are seen, and encouraged to see themselves, as observers looking at the world from the advantageous point of view of the human set above and apart from the world. This way of viewing the world is strongly influenced by Descartes' motto, "I think, therefore I am", in which "thinking is a self-contained act of cognition that affirms the 'superiority' of Man, as it evokes order and judgment" (Dernikos et al., 2019, p. 444).

[59] Giorza (2018, p. 33) notes that queering the binaries of nature/culture and human/non-human means upsetting the binaries in a similar way in which transgender subjectivities upset the male/female binary. Barad (2014) uses the term 'queering' in order to disrupt the idea of identity, highlighting the fact that subjectivities are contingent and are a "coming together of opposite qualities within" (Barad, 2014, p. 175).

Lenz Taguchi observes that

> The majority of pedagogical practices deployed in schools are still based on instrumental pre-industrial strategies, which do not take into account providing contexts for creative and experimental learning that incorporate body and material artefacts as a part of learning environments. (Lenz Taguchi, 2011, p. 36)

In a humanist ontology, culture is defined as a uniquely human intervention, one that enacts a transformation of an 'original' and uncontaminated nature. The "Cartesian habit of mind" (Barad, 2007, p. 49) which sees nature as separate to culture, presupposes the discrete and individualised existence of subjects and objects. This ontology (i.e. way of thinking about the nature of things and/or beings that make up the world) has resulted in an epistemology (way of knowing) that relies exclusively on representation and language, as humans make sense of a world separate from themselves.

Physicist/philosopher Karen Barad (2007), drawing on her reading of Neil Bohr's insights into quantum physics which disrupt this nature/culture dichotomy, contests this boundaried and binary way of thinking by stating, "We are not outside observers of the world. Neither are we simply located at particular places in the world; rather we are *part of the world* [emphasis added] in its ongoing intra-activity" (p. 184). At this juncture the reader may wonder, how does quantum physics have any bearing on pedagogy, and specifically, literacy pedagogy?

The insights of quantum physics, argue Barad, are critically important as they upend traditional notions of subjectivity, agency, causality, ethics and knowledge practices, all of which are central to pedagogy. What is true at a micro level, she contends, is true at the macro level (2007, p. 110). Notions of scale are human inventions, as can be seen by the fact that cities are leveled and geopolitical fields remade on a global scale by the splitting of an atom's tiny nucleus, or indeed in the recent dramatic shifts in socio-economic-political realities experienced

as a result of the intra-action of a microscopic coronavirus with human and non-human worlds. Barad therefore asks, "How can anything like an ontological commitment to a line in the sand between 'micro' and 'macro' continue to hold sway on our political imaginaries?" (Barad, 2017, p. 63).

This blurring of the lines 'between' micro and macro suggests that we cannot separate the learner from what is learned – they are co-constitutive (Lenz Taguchi, 2010). We cannot produce knowledge that is 'outside' of us, because we are part of the world and the world is part of us in an endless, intra-active becoming together. If this is true, then "[k]nowing does not come from standing at a distance and representing something, but rather from a *direct material engagement with the world*" (Barad 2007, p. 49, emphasis in the original). Bayne follows Edwards (2010) by "writing against educational orthodoxy which privileges the 'knowing human subject'", observing that thinking with posthumanism enables us to start thinking about education "as an assemblage, an entanglement in which its purpose becomes not one of learning but one of the creative 'gathering' of the human and non-human" (2016, p. 85).

It has been argued that the term 'new materialism', intended to denote an indebtedness to Marxism (Barad in Juelskjær & Schwennesen, 2012, p. 13), as well as a 'new' ontological position in which humans are decentred in a flattened ontology (Lenz Taguchi, 2010), is in fact not new at all (Kuby & Roswell, 2017, p. 285). Ceder (2015, p. 55) draws on a broad range of texts on Indigenous thought[60] when observing that "Indigenous philosophies function as valuable contrasts to humanist/anthropocentric thinking and as an inspiration for posthumanist philosophy", as the human is generally perceived to be part of nature, rather than governing it. Like many adherents of Indigenous philosophies, new materialist scholars "insist on the significance of matter in social and cultural practices" (Koro-Ljungberg et al., 2017, p. 814). Rosiek et al. note that while an ontology that includes non-human agency, as well as a conception of ethics including human and more-than-human relationality, can be found in

[60] Cajete (2000), Tuck and McKenzie (2015), Mika (2012, 2015), Calderon (2008), Taylor (2013), Gannon (2009), and Marsden (2003).

some Indigenous studies literature, there has been "limited dialogue across these literatures about their shared onto-ethical commitments" (2020, p. 332). Barad addresses this by advising against the pitfalls of both falling in love with 'the new', as well as valorizing 'the old', positing that the shift in temporality proposed by her agential realism (to be discussed later in this chapter) "undermines the sense of past, future, and change that supports such categorizations" (2007, fn 29 on p. 452). A recent example of Barad drawing on Indigenous scholarship is her troubling of the western notion of time and the profound implications for the related notions of progress and development. She discusses in detail her assertion that "homogeneous empty time is not a universal conception of time" (Barad, 2017, p. 60),[61] observing that quantum physics "opens up radical spaces for exploring the possibilities for change from inside hegemonic systems of domination" and "might usefully join forces with indigenous and other subjugated knowledge practices" (Barad, 2017, p. 61). Murris and Kohan (2020) use Barad's queering of the western notion of time to trouble how certain views of childhood shape our experience of time in schooling.

Koro-Ljungberg et al. (2017) note that different scholars take up new materialisms in different ways, but that they all disrupt the idea of nature as "merely a backdrop for the humanist adventures of culture" (p. 815). Far from being regarded as 'dumb' and passive "until awakened to meaning by human interest and interpretation", matter (i.e. nature) is regarded as having agency in its relationality with the human (p. 815). Braidotti (2019, pp. 34–35) drawing on Haraway, takes this further by stating that the notion of 'human nature' should be replaced by a 'naturecultures' continuum. Giorza also observes that a new vocabulary is needed for the kinds of languaging that is required by scholars working with new materialism theory, one that can distribute subjectivity and agency between and among active players, both human and

[61] She quotes Daniel Wildcat, drawing on the work of Indigenous philosopher Vine Deloria, in troubling this modernist conception of 'empty' time and history: "It is of critical practical importance that some cultures express history as primarily temporal and others express history as fundamentally spatial in character. Once history-as-time is universalised and human beings are, so to speak, all put on the same clock, it is inevitable that in the big picture of human history *some peoples will be viewed as 'on time,' 'ahead of time,' or 'running late'* [my emphasis]. It makes little difference that the clock hands rotate in circles, for they are thought of and acted on as if they were wheels moving down a single road called progress" (Barad, 2017, p. 60).

nonhuman, material (nature) and discursive (culture). Lenz Taguchi (2010, p. 43) does exactly this when she introduces the idea of a 'flattened ontology', giving the material and the discursive (nature and culture) equal force, and simultaneously decentering the human as the only knowledge-and meaning-making subjects (Giorza, 2018, p. 58).

Ceder notes that the separation of nature/culture, also articulated as a separation of subject/object, has been identified by feminist theorists as something that needs to be resisted in order to oppose the objectification of those who are not perceived as belonging in the centre. Therefore, Ceder observes, "It is common for feminist theorists who realized the connection between separation and objectification to create theories or resistance strategies based on the opposite, such as caring, affect, dialogue, touch, entanglement, and relationality" (2015, p. 59). Todd (2003, cited in Ceder , 2015, p. 70) notes the distinction between learning *about* and learning *from*. To learn about something or someone is to "classify, categorize, and make understandable", whereas to learn from someone or something is to "make him/her/it part of one's world, opening up to difference and personal changing" (Ceder, 2015, p. 70). Some of these themes will emerge in my discussion about an intra-active approach to pedagogy, as well as in Chapter 5 where I analyse some examples of pedagogical documentation.

Before going on to discuss the idea of onto-epistemology (a collapsing of the distinction between ontology and epistemology), and the significant consequences of this idea for early childhood education, what follows is a brief exploration of different ways of viewing ontology.

Ontologies of transcendence and immanence

Transcendence assumes that humans are separated not just from the world and each other (in other words, we are self-contained individuals gazing "out" at the world and at other humans) but our separation extends to some immutable, transcendent other that is above and superior to us. Many people refer to this as God, or as universal and immutable laws, as argued by Plato and in Judeo-Christian theology. By contrast to this transcendent otherness, the world is

considered finite, changeable, a tool in the hands of 'Man'. With this understanding, philosophy considered ontology to be a project of discovery, i.e. discovering what can be classified or categorised as something that exists (May, 2005). This categorization included hierarchy, and since 'Man' was made in God's image (a Christian idea that went largely unchallenged in western philosophy until Darwin published his theory of evolution), human subjectivity comes after God. Lenz Taguchi, drawing on the insights of Todd May in his introduction to Deleuze and Guattari, notes with reference to this ontology, "[t]he human subject transcends the material world, constituting it and giving it form and expression in our language, architecture, art, etc. In terms of epistemology then, the human subject is the seat of knowledge, but ontologically the subject follows in God's wake" (2010, p. 43).

In a transcendent ontology, the role of humans is (a) to stand 'outside' of 'the' world, materially different from the world, and (b) to understand it, discovering the universal laws of the universe. As mentioned in Chapter 2, Haraway refers to this as the god trick, the "view from nowhere", constituting a great separation between humans and the world they found themselves in (Haraway, 1988). This is the Cartesian nature/culture split – Man stands separate from and in a position of ontological superiority towards Nature, leading directly to the split between subject/object.

As described by Giorza (2018, p. 59), when 'Man' claimed the right of dominion over a passive, raw and mute world, it was by virtue of being God's representative, God's image, and "humanity's evolutionary climax". Ursula le Guin observes that monotheistic religions "encourage arrogance" in their "privileging humanity's relationship with the divine" (2017, M16). This theology encourages a perspective in which the world is seen as a resource for 'Man's' exploitation. Giorza notes that the "colonising, conquering, extractive and depleting machinery of modern science and progress" was an outworking of this idea of transcendence (Giorza, 2018, p. 59).

Another significant implication of this ontology is described by Lenz Taguchi:

> By putting ourselves apart from and above the rest of the world as a human 'I', we cannot as easily understand our interdependence with other organisms and matter, which are given a lower status as matter in an ontology of transcendence. (Lenz Taguchi, 2010, p. 57)

Philosophers such as Spinoza, Nietsche and Deleuze have found this Cartesian split too limiting to think with, turning instead to an ontology of immanence. Spinoza formulated the idea of a plane of immanence. God, in this formulation, is not *super*natural, but rather part of the natural world just as the natural world is a part of God.[62] In contradistinction to Descartes' dualist ontology, Spinoza asserts the unifying of mind (culture) and body (nature) on the same level, i.e. no hierarchical separation. In this ontology, the hierarchy of transcendence is flattened (Lenz Taguchi, 2010), with humans and nonhumans being made of the same materiality. Reality is considered the ongoing intra-actions of organisms (human and non-human) and matter.

Braidotti (2019, p. 31) refers to the conceptual foundation for the critical posthumanities as an ontology that "assumes radical immanence". When we appreciate the entangled connections we share with the rest of the world, human and nonhuman, and acknowledge the endless multiplicity of possible futures we have, then we experience immanence (Lenz Taguchi, 2010, p. 15).

Onto-epistemology

Barad's work in quantum physics problematises the notion of the separation between observer and the observed (Barad, 1998, 1999, 2007), as "[w]e are part of that nature we seek to

[62] This leads Spinoza to his once-scandalous formulation "God, or Nature", which both raises nature to the level of the divine, and naturalises divinity (and also explains descriptions of Spinoza as both pantheist and atheist). Claire Colebrook, in her accessible introduction to Deleuze, notes that "Deleuze's commitment to Spinoza's monism is one of the most important aspects of his philosophy, for it allows for a radical programme of demystification: there is no substance or life other than this one expressive life that we live. It is the task of philosophy to overcome the illusions of a God beyond this world" (Colebrook, 2006: 137).

understand" (Barad, 2007, p. 67). This leads her to conclude that knowing cannot be separated from being since they are mutually implicated. She writes that "we don't obtain knowledge by standing outside the world; we know because we are *of* the world. We are *part* [my emphasis] of the world and its differential becoming" (2007, p. 185). Collapsing the distinction between ontology and epistemology, she adopts an onto-epistemology, a philosophical stance in which being and knowing are entangled and co-constitutive. Giorza (2018, p. 51) takes this up by remarking that being, knowing, and thinking are relational and involve simultaneously both material and discursive forces.

Barad's notion of intra-action offers a thoroughly relational account of ontology, which has many implications for pedagogy. For Lenz Taguchi (2010, pp. 49–50), one significant consequence of an onto-epistemological perspective is that there can be no non-contextualised and universal 'best practice' when applied to education. Siegal, in Dernikos et al., 2019 (p. 442) speaks about how the sociocultural and critical theories of the 1980s and 1990s, and more recently those of the new materialist turn, have given researchers the tools to go "beyond the methods fetish over the 'correct' method for teaching reading". Kuby (2019b) referencing Latour's (2004) call for a more productive approach to critique, cautions us to be less concerned about matters of 'fact' when it comes to literacy pedagogy, the so-called 'science of best practice', and more interested in 'matters of concern'. "Matters of fact are about the future, a what if, a possible entanglement", whereas "[p]osthumanism is about the in-the-moment intra-actions (Kuby, 2019b, p. 180). Kuby cites Barad (2013) who writes that "we inherit the future", and goes on to observe, "[t]he ways we teach literacy(ies) now is the future we will inherit" (p. 180).

Lenz Taguchi believes that the emphasis on the discursive in educational research has resulted in "the constitutive force of the material" going unnoticed (2010, p. 13). In contrast, posthumanism's focus is on the "entangled, agentic, in-betweenness of the materials and humans" (Kuby & Rucker, 2016, p. 10). Rather than humans constituting their reality through the force of their agency, Barad (2007) postulates that, "Our knowledge making practices are

social-material enactments that contribute to, and are a part of, the phenomena we describe" (p. 26). I understand this to mean that we humans co-constitute our reality, together-with and part of the world we seek to describe. Matter and meaning, therefore, are entangled. Literacy is larger than alphabetic print.

Plauborg (2018, np), drawing on Barad's notion of onto-epistemology to think about knowledge production, notes that "[o]ur continuous becoming is entangled in our knowledge acquisition and vice versa ... The world is not given once and for all, and nor are we because both we and the world are in continuous motion". This configuration of knowing and being gestures to the fact that we are not in the world as independent, separate individuals, and that we therefore cannot acquire knowledge that is itself independent and separate from its context.

For Lenz Taguchi, an 'ethics of immanence' requires that the teacher should not conceptualise the student, the content or their pedagogy in terms of being bounded individual entities, apart and separated from everything else. Teachers have a responsibility (or response-ability, as will be discussed later in this chapter) to recognise the inter-connections and intra-actions in-between human and non-human organisms, matter and things, in order to do justice to the subjectivities that emerge through the learning events.

Learning from an onto-epistemological perspective, according to Lenz Taguchi, takes place "*right in the middle of things*, in our very living and doing pedagogical practices" and requires teachers to develop a greater awareness, a need to "open ourselves up to what happens right now and in the middle of the thickness of the actual present with all its multiplicities" (2010, p. 61, emphasis in the original). In practice, if we can't separate being from knowing, we need to engage in a listening relationship with children as fleshy units in space and time (Davies, 2014), noticing their intra-actions, what is taking place in-between discursive thought and the materiality of their experiences.

Intra-action

Barad's background in theoretical particle physics and quantum field theory informs her approach to ontology, leading her to proclaim, "Existence is not an individual affair", because there is "no independent, self-contained existence in the world" (2007, ix). "To be entangled", she explains, "is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence" (2007, p. ix).

The usual concept of interaction (one that is central to a social constructivist view of education) relies on the idea of "individual independently existing entities or agents that preexist their acting upon one another" (Barad, 2012a, p. 77). In other words, these are inter-personal relationships between at least two persons or entities that are understood to be clearly and inherently separated from each other (Hultman & Lenz Taguchi, 2010, p. 530). However, Barad argues that developments in quantum physics have 'queered' the metaphysics of individualism, showing that "'individuals do not preexist as such but rather materialize in intra-action" (Barad, 2012a, p. 77). "Intra-action" is a neologism that Barad introduced to social sciences research to explain how individuals (both human and non-human) are co-constituted; they materialise ontologically through both material and discursive relations (Barad, 2007; Hultman & Lenz Taguchi, 2010, p. 530). This concept signals a profound challenge to individualist metaphysics. As noted by Jokinen and Murris (2020, p. 51) it disrupts both the metaphysics of presence and the metaphysics of individualism by expressing mutual relationality: the idea that 'nature' and 'culture' are never 'pure', and never unaffected by each other, because they are always in relation. Barad speaks about "the renormalized self" as "a collectivity, not an individual, in an undoing not only of self/other but human/nonhuman" (Barad, 2017, p. 82). It is also implied that intra-actions are productive in the sense of producing something: something new comes into being and/or something is changed *vis-á-vis* intra-action (Barad in Juelskjær & Schwennesen, 2012) and the intra-activity is always ongoing.

Giorza (2018), drawing on Lenz Taguchi, notes that the habit of always beginning with 'I' is a legacy of a Cartesian ontology of subject/object binaries in which we name the self 'I', and this

self is apart from other selves and things. Descartes' philosophical position "I think therefore I am" unravels as thinking is "distributed among and between, rather than inside one mind" (Giorza, 2018, p. 39). Towards the end of this chapter I discuss some of the linguistic difficulties experienced by scholars when using language the grammar of which is founded upon the very subject/object binary which they are attempting to problematise.

Different scholars have developed novel ways of indicating their understanding of the subject as more than singular. For example, Davies (2014) uses a strikethrough when writing the word 'subject' (as in, ~~subject)~~ to indicate that the individual is not a fixed entity, but is emerging through encounter (2014, p. 3). The use of the strikethrough, she explains, "interferes with the tendency that our language has to invoke entities which it then takes to be real, fixing them in place through ways of speaking – or modes of enunciation". Although the subject does exist, and Davies acknowledges this when speaking of 'child' and 'children', its existence is "more mobile, intra-active and multiple" than our use of language usually suggests (p. 3).

As discussed in Chapter 2, Murris (2016a, 2016c, 2020b) signifies this multiplicity of being by referring to the 'posthuman child' as iii. This jolts the reader into thinking about subjectivity as multiple, as "bodymindmatter" (Murris, 2016c, p. 293) to counter the fact that our linguistic resources (i.e. the use of the word "I") are skewed toward the individualistic self which has the effect of positioning others as Other.

Donna Haraway refers to this same idea when speaking about the relationality of companion species. She sees this relationality as "co-constitutive relationships in which none of the partners pre-exists the relating", and crucially, "the relating is never done once and for all" (2003, p. 12). Haraway also uses the term *sympoiesis* ("making-with") to further elaborate the idea of intra-action: "Nothing makes itself; nothing is really autopoietic or self-organizing" (2016, p. 58). The radical implication of sympoiesis is that "earthlings are Never Alone", we are always "worlding-with, in company" (2016, p. 58). Haraway's distinction between seeing human animals as sympoietic rather than autopoietic systems draws from an environmental studies

thesis by M. Beth Dempster,[63] and this distinction is helpful for working with the idea of relationality and a different conception of subjectivity in educational research. Sympoietic systems are unbounded "complex amorphous entities," have "distributed control" with an "evolution within systems," and are "unpredictable" (Haraway, 2016, p. 176, fn 13). Murris and Haynes note that the ontology of a sympoietic system disrupts the nature/culture binary and reconfigures learning as a "relational materialdiscursive worlding process in-between human and nonhuman bodies" (2018, p. 29). A nonhuman "body" could be something like paint or clay or water or light, indeed anything that participates in exploring ideas and producing knowledge.

Sympoiesis not only displaces autopoiesis, but also enlarges it as a "carrier bag for ongoingness, a yoke for becoming-with" (Haraway, 2016, p.125). In practice this means taking up Barad's notion of intra-action as a way of doing justice "to the connections between the human and more-than-human in space and time that are always already 'there'" , but which are frequently overlooked due to the tendency to focus exclusively on human interactions during a learning event (Reynolds & Peers, 2018, p. 139). This approach includes the nonhuman as actors which feature in a participatory (research) event, for example, the carpet, the chairs, the light, the cameras, the tree outside the window, the moon, gravity and the national curriculum, *ad infinitum*. By including both the discursive as well as the material (across space and time) in observations, a different concept of participation in the classroom emerges.

Reynolds and Peers (2018) remark on Haraway's use of 'relationality' instead of 'relationship', and drawing on Taylor and Giuni (2012), suggest that the word 'relationship' assumes two subjects (as in 'interaction') whereas relationality includes the more-than-human (as in 'intra-action').

This idea of intra-action has proven to be tremendously generative in education research, and particularly in the field of early childhood education, with Giorza (2018, p. 56) noting that this

[63] Dempster, M.B. (1998). "A self-organizing systems perspective on planning for sustainability." [MA thesis, Environmental Studies: University of Waterloo, 1998]

ontological shift "reorients the educational project" and requires an "un-ravelling" of ingrained thoughts and practices. One of the most significant consequences of this new understanding of subjectivity is to decentre the child, "unsettling dominant discourses and practices" that work from an image of child as a "given, coherent, agentic, and knowable subject that moves through specific developmental stages" (Diaz-Diaz & Semenec, 2020, p. viii), as discussed in Chapter 2. This approach demands that researchers attend to "how the child is always already entangled with human and more-than-human others, and how these various entanglements come to matter" (p. viii). In this reconfiguration, pedagogical interventions should be seen as specific intra-actions ('agential cuts') always occurring within a context of relationality (Barad, 2012a, p. 77; Kuby et al., 2019, p. 157).

Inspired by Kuby and Rucker's (2016, 2019, 2020a, 2020b) concept of literacy desirings, I am interested in how people (teachers, children, parents) intra-act with other human and nonhuman bodies such as books, iPads, desks, chairs, carpets, indoor-and outdoor-classrooms, writing materials, bodies of water, trees, arts and crafts materials and so forth to produce "new ways of knowing/be(com)ing/being and literacies" (Kuby & Rucker, 2020b, p. 243). I include dominant as well as non-mainstream discourses about childhood and education in the category "nonhuman bodies", because in an intra-active pedagogy, concepts come to matter as 'material articulations of the world' which intra-act with all other matters and thereby participate in discursive meaning-making (Barad, 2007, p. 139; see also Lenz Taguchi, 2010, p. 88). Concepts therefore form a significant part of the assemblage that constitutes literacy learning.

Hultman and Lenz Taguchi note another shift that this perspective produces when thinking about children, that is, dislodging the idea that a child is either incompetent (i.e. a deficit approach regarding children, foundational to developmental psychology) or competent (as in the Reggio Emilia philosophy). Instead, children, like nonhumans and the materiality of the world, "emerge through, and as a part of, their entangled intra-actions with everything else" (Hultman & Lenz Taguchi, 2012, p. 531).

Building on this idea, Nordstrom writes that the "undecidability" of an individual being constantly on the move, never completed, never whole is not to be understood as a lack or a deficit. Rather, this undecidability "overflows with potentiality generated by ever-shifting relationships" (2018, p. 217). Haraway (2016) refers to this as 'ongoingness', and Barad alludes to the same dynamic in her statement that "identities are not given, but performed" (Barad, 2011, p. 140).

Lenz Taguchi builds on this theory of intra-action to propose an intra-active pedagogy. This pedagogy shifts our attention from focusing on the intra-personal (i.e. the psychological and cognitive theories that regard learning as a process occurring 'inside' the student) and inter-personal (between two or more bounded human subjects) "to give explicit attention to the intra-active relationship between all living organisms and the material environment: things and artefacts, spaces and places that we occupy and use in our daily practices" (2010, p. 10).

Agential realism

In keeping with the theory of intra-action, Barad resists a human-centred concept of agency. She argues instead that agency is an enactment emerging through the complex intra-actions of humans and non-human matter, temporality, and space. Therefore, the human does not act on matter, but rather humans and nonhumans together are agential actors in the world as it continuously comes into being (Barad, 2003, 2007, 2012a).

Barad's agential realism, which has been taken up by new materialist researchers, explains how "knowing is an entanglement in and with the world, in which choices and 'cuts' are made, each of which make a difference (and produce subjectivities) and that those differences matter in far reaching ways" (Giorza, 2018, p. 81). A posthuman configuration of being is therefore of "multiple subjectivities made material through particular relationalities and intra-actions where the material and the discursive are mutually co-constitutive" (p. 81).

The 'realist' aspect of this philosophical framework refers to a "move 'back' to realism and against interpretation and reflection" (Giorza, 2018, p. 71), a move which is key to the ontology of immanence that is foundational to Barad's agential realism and the relational ontology of Deleuze and Guattari. Barad makes the notion of intra-action the heart of her agential realist philosophy, saying that "agency is not an attribute but the ongoing reconfigurings of the world. The universe is agential intra-activity in its becoming" (Barad, 2007, p. 141). The mutual implicatedness of the material and the discursive is an important feature of this 'agential intra-activity', referred to by Giorza as the "equal and inter-connected knowledge-producing power of the material and the discursive" (2018, p. 140).

> Discursive practices and material phenomena do not stand in a relationship of externality to one another; rather, the material and the discursive are mutually implicated in the dynamics of intra-activity. But nor are they reducible to one another. The relationship between the material and the discursive is one of mutual entailment. Neither is articulated/articulable in the absence of the other; matter and meaning are mutually articulated. Neither discursive practices nor material phenomena are ontologically or epistemologically prior. Neither can be explained in terms of the other. Neither has privileged status in determining the other. (Barad 2003, p. 822).

This relationality of the material with the discursive is frequently denoted by Baradian scholars (e.g. Lenz Taguchi, Kuby, Ceder, Giorza, Murris, Murris and Haynes) through the use of hyphenation, as in 'material-discursive', or placing the two words together, as in 'materialdiscursive'. This implies that neither the material nor the discursive exist in pure form: they are irreducibly entangled. Plauborg (2018, np) draws on Bennett when she observes that in relation to learning, the human and nonhuman, the material and the discursive, are agentive; together, they are vital players threaded into and making constitutive differences to human learning processes. Kuby et al. (2019, p. 157) refer to these actors as "transindividual", in other words, they never remain 'pure' or unaffected by the other. Significantly, posthumanism is not about doing away with the self—the human definitely does exist—but, as articulated by Kuby et

al., "the crux is to re-think how relationality (intra-actions) brings subjectivity into existence ontologically" (2019, p. 157). In this configuration, human and nonhuman bodies do not stand in "a relationship of externality to each other" (Barad, 2007, p. 152). Agency therefore does not belong to humans alone who act upon the nonhuman, but to entanglements of human and nonhuman bodies.[64]

A key aspect of agential realism concerns the significance of phenomena as the primary ontological unit, rather than independent objects with inherent boundaries and properties (Barad, 2007, p. 139). For Barad a phenomenon is "a specific intra-action of an 'object' and the 'measuring agencies'", always bearing in mind that the object and the measuring agencies "emerge from, rather than precede, the intra-action that produces them" (2007, p. 128). When thinking about scientific research undertaken in a laboratory, Barad notes that the apparatus that produces data also produces values and meanings (Barad in Juelskjaer & Schwennesen, 2012, p. 15). This has application to all research, in that the research instruments themselves (e.g. interviews, questionnaires, observations, experiments) play a significant role in producing and shaping the data. This takes us back to ethics, as Barad observes, "This is an ethico-onto-epistemological issue. Ethical considerations can't take place after the facts are settled, after the research is done. This is the wrong temporality. Values and facts are cooked together as part of one brew" (Barad in Juelskjaer & Schwennesen, 2012, pp. 15–16).

The idea of apparatus (and for the purposes of my thesis, pedagogical documentation is the relevant apparatus) plays a significant role in an agential realist account of the world. In quantum physics, it is understood that the measuring apparatus is constitutive of the

[64] Bayne (2016, p. 85) cites Hayles (2006) as developing the notion of the 'cognisphere' as a way of rethinking the humanistic privileging of agency and autonomy in education. Hayles proposes seeing the cognisphere as a huge, global 'pyramid of data flows', of which human awareness can only ever encompass a tiny fraction. In this light, Hayles proposes that posthumanism is concerned with "transforming untrammeled free will into a recognition that agency is always relational and distributed", and thereby "correcting an over-emphasis on consciousness to a more accurate view of cognition as embodied throughout human flesh and extended into the social and technological environment" (Hayles, 2006, pp. 160–161).

phenomenon which it measures. In other words, "Apparatuses are not passive observing instruments; on the contrary, they are productive of (and part of) phenomena" (Barad, 2007, p. 142) leading to the conclusion that the apparatus is an inseparable part of the observed phenomenon (Barad, 2014, p. 180). With this in mind, as educators we should be asking, what do the measuring apparatuses in 'a classroom' produce?[65] [66]

Barad speaks about matter as "not a thing, but a doing" (2007, p. 18, 336), referring to the coming-into-being of phenomena through intra-action. This 'doing' is a kind of performance, also referred to as performativity, in that "matter is substance in its intra-active becoming" (p. 336). This is an active process involving human and more-than-human agential partnerships:

> What is at issue is that specific material practices, that is, specific dynamic material configurings of the world, causally produce specific material phenomena, as part of the ongoing differential performance of the world. Phenomena are not the mere result of human laboratory contrivances or human concepts. Phenomena are specific material performances of the world. (Barad, 2007, p. 335)

Performance as becoming

In an article exploring the application of agential realism to the field of social work, Webb (2020, p. 5) notes that in social work practice the practitioner is "literally enacting phenomenon and not merely reflecting on or observing them". I would take this a step further to say that the practitioner (in our case, the teacher and/or the child), as well as the notion we refer to as learning (or knowledge production), are coming into being through their intra-actions with a myriad of materialdiscursive forces at play, most of which are invisible to humans and which are operating 'below' the surface of everyday pedagogical practice. Forces such as dominant

[65] In Chapter 1 I suggest that the use of a singular noun when speaking of a research 'site' or 'classroom' does not do justice to the multiplicity of forces at work at any given moment in every place, hence the use of inverted commas to gesture towards this complexity.

[66] Compton-Lilly et al. (2020) discuss a variety of summative and formative assessments, and how these contribute to particular views of childhood and literacy.

discourses, notions of success and what matters, state policies, architectural practices and the design of the 'learning environment', bodily needs and functions such as hunger, fatigue and all manner of chemical and hormonal entanglements with/'in' the body, the materials in the classroom and how they are put to work to co-constitute experience, global and local market forces irreducibly entangled in patterns of injustice and inequity, hauntings of histories threaded through the past(s), present(s) and future(s), bio-geo-politics (one thread of which is embodied as the coronavirus in this time of Covid-19), techno-scientific inventions and the late-capitalistic products that emerge from and through them, the kinds of experiences these products make (im)possible, companion and other species and their ongoing relationality with everything, and … and … and. This kind of list goes "all the way down" (Haraway, 2003, p. 12).[67]

Tracing some of the threads in the kind of entanglement described above is a knowledge practice that attempts to do justice to some of the dynamic ongoingness of the world, and this is what I interpret Barad to mean when she speaks about agential realism. A more accurate understanding of the world can only be attempted when one is open to the multiplicity and indeterminacy of human and nonhuman agencies. As mentioned in the Introduction of this work, Haraway refers to this kind of knowledge practice as "going visiting" (Haraway, 2016), while Tsing employs the "arts of noticing" to see "the divergent, layered, and conjoined projects that make up worlds" (Tsing, 2015, pp. 17–25). These include paying careful attention to conditions of inequality and injustice (Haraway, 2016; Burnett et al., 2020).

Webb (2020) makes the point that this kind of knowledge practice is a rejection of representational discourse, and is an "ontological insistence on the weight of material practices and a relational ontology that transverses boundaries such as objectivity and subjectivity" (p. 3). A performative understanding of pedagogy, for example, would take account of the fact that

[67] Note that the fact that the apparatus is unbounded "does not imply that everything and anything matter equally" (Barad, 2007, fn 30 on p. 452). I interpret this to mean that decisions have to be made regarding the weight accorded to different factors contributing to the phenomenon.

knowing does not come from reflecting, or standing at a distance and observing 'objectively', but from material engagement with the world. Teachers should view all encounters as involving an entanglement of actors/agents fundamentally involved in networks of human and nonhuman phenomena. As noted in Chapter 2, Giorza suggests that this is even more crucial to acknowledge in the pre-literate years, as "... there is a threshold timespace between not-being and being literate in which matter matters inordinately (2018, p. 184).

Lenz Taguchi proposes that learning does not merely take place 'inside' the child but is "the phenomena that are produced in the intra-activity taking place inbetween the child, its body, its discursive inscriptions, the discursive conditions in the space of learning, the materials available, the time–space relations in a specific room of situated organisms", and in this configuration, "people are only one such material organism among others" (2010, p. 36).

In Plauborg's application of Barad's agential realist theory to learning, she posits that in the same way that materiality and discursivity are not merely passive components in learning, neither are time and space. "Space does not just 'provide the venue' for something to occur. Temporality and spatiality are also agentic; they do 'something' to the things we learn … and thus become creative forces of learning" (2018, np). Thus Barad speaks about "spacetimemattering" as an entangled phenomenon, rather than as discrete forces to be considered separately (2007, p. 179).

Thompson (2019), who takes inspiration from Lenz Taguchi's writings to propose an intra-active approach to the teaching of comprehension in a South African classroom, uses the concept of agential realism to theorise this approach. She rejects the focus on the discursive that is dominant in western education, drawing on the insights of Barad as she recognises that "material objects are performative agents and entangled they actively work on bodies to make them behave in specific ways" (2019, p. 38). Thinking about the differences that are produced by, for example, moving an activity onto the carpet rather than having children sit in chairs, she notes that rather than thinking about chairs or desks as being performative agents on their own

(as this would assume a traditional kind of linear causality) she sees these material objects (in their presence *and* in their absence) as working together with her voice, her silences, her body, her spur of the moment decisions and the teaching of literacies. All these materialdiscurive phenomena are working together, and in their "togethering" can be considered performative agents. In Chapter 5 I discuss the performative role of the arrangements of children's bodies sitting close to one another on the carpet, and how this becomes part of the knowledge-making assemblage.

The intra-active pedagogy proposed by Lenz Taguchi conceptualizes all these performative agents as making each other intelligible to one another – "busy learning to know one another" (2010, p. 40) – and thus transforming and changing each other in this process. She regards learning events as "events of a materialised embodied reality" (p. 40), elaborating as follows:

> Learning events are taking place just as much and simultaneously between your hands handling material things as they do in your thinking body/mind, handling concepts, notions and emotions. In such an understanding we go beyond the taken-for-granted ways of thinking of the binary divides of subject/object, theory/practice, intellect/body and discourse/matter, in order to make matter matter.[68] (Lenz Taguchi, 2010, p. 40)

Drawing on Barad (1999, 2007) and Alaimo and Hekman (2008), she concludes that "this makes knowing just as much a matter of the body and the material as it is a matter of understanding and thinking through discourse/language"(p. 40) and notes that this has significant consequences for teaching and learning. One of these consequences is a dissolving of the boundaries 'between' disciplines. For example, Sylvia Kind, artist and educator, speaks to the importance of intra-disciplinarity in her teaching practice by highlighting the arts as "central to learning, not as an addition to curriculum and not as a separate area in the room. The work of

[68] Murris articulates the collapse of the theory/practice divide by referring to the experience of riding a bicycle: "[t]heory and practice are like two pedals on the same bike" (Murris et al., 2020, p. 91).

the Atelierista involves thinking about the artistic processes as processes of making sense, of figuring things out, and as ways of knowing" (in Diaz-Diaz & Seneca, 2020, p. 76).[69]

Another consequence of thinking with an agential realist conception of pedagogy, as noted by Thompson (2019, p. 39), is a disruption of the usual focus on individualised learning in modern education. When knowledge production is understood to be a performance of entangled human and more-than-human bodies and forces in their materialdiscurive becoming, the notion of an individual self on an individual learning path becomes difficult to think with (Haraway, 2016).[70] Along these lines, Braidotti (2019, p. 33) observes that "[k]nowledge-production … is always multiple and collective."

Making cuts

What does the role of power play in an agential realist account of the world, and of literacy pedagogy? Barad holds that the deeply connected way in which everything is entangled with everything else means that any act of observation makes a "cut" between what is included and excluded from consideration in the observation. Since nothing is intrinsically separate from anything else, separations are provisionally enacted so that one can study or explore something long enough to gain knowledge about it. Leander and Boldt urge us to be aware of the cuts we make, by asking ourselves, "Where do we look—where do we address our attention, our gaze?" (2013, p. 27). This view of knowledge-making provides a framework for thinking about how discourses and habits of thought can make some things visible and other things easier to ignore or to never see. Agential realism is therefore useful for feminist analysis, which is grounded in the analysis of power differentials.

Ceder (2015), writing about relationality in education, makes a connection between Barad's and Harraway's conceptions of knowledge production. Since agential realism does not use a

[69] An Atelierista is a staff member in a Reggio school, a practitioner with an arts background who works alongside the teachers.

[70] It is this insight that makes self-directed education, discussed in the Introduction, untenable.

predetermined cut between the observer and the observed, he argues, the agential cut becomes very important in order to situate knowledge and be able to talk about objectivity. Accordingly, Barad's agential cuts and Haraway's situated knowledges are closely related (2015, p. 67).

As discussed in Chapter 2 with specific reference to literacies, every time a cut is made (a decision to focus attention on a certain intra-action), certain knowledge and possibilities are included and others are excluded. Power is therefore enacted in the agential cuts that humans, apparatuses ("agencies of observation") and more-than-humans produce (Kuby et al., 2019, p. 3). For example, in the literacy classroom, adopting certain approaches to the teaching of reading and writing is an agential cut. As Kuby et al. explain regarding the adoption of the 'writer's workshop' model when teaching writing, this specific agential cut "brings together people, materials, time, and space in specific ways. It makes certain happenings possible and not others. Power and agency are produced through the relations enacted through cuts" (Kuby, et al, 2019, p. 3). One of the contributions of posthuman theories to the field of literacies pedagogy is to "shine light on the institutionalized, habituated cuts that we have made as a field" and the many consequences of those cuts, including "how in many cases those cuts have been too small, particularly for poor, minority, and immigrant children" (Kuby et al., 2019, p. 3). Lenz Taguchi advises teachers that thinking in terms of agentially negotiated cuts is about adopting a much wider scope in pedagogical practices. She recommends that

> We soften, widen and expand our gaze and inter-connecting bodies with all of its senses, in relation to the whole of our pedagogical environments where the material objects, furnishing and architecture of the room is included. We change our focus from the perspective of the inter-personal – that which happens only in-between people – to the intra-actions between different organisms and matters. (Lenz Taguchi, 2010, p. 74)

Significantly, the knowledge that is produced from these agential cuts is understood by Barad as 'particular material articulations of the world' (Barad, 2007, p. 139). What is created when an

agential cut is made, i.e the observer observing the child, is a phenomenon. This phenomenon is what emerges from the intra-activities taking place between the child, the 'apparatus' of knowing and the observer in their entangled state of being (Lenz Taguchi, 2010, p. 73).

In an attempt to conceptualise an agential realist account of learning, Plauborg (2018) suggests that "learning is an emergent and open phenomenon without a beginning or end" (2018, np). This relates to Deleuze and Guattari's conception of the rhizome, in that knowledge has no beginning or end, everything is always in the middle, or in-between. Plauborg goes on to draw on Barad's conception of agential cuts as boundary-making practices while thinking about the acquisition model of learning, and concludes that learning is in fact not about "acquiring something that is outside us, above us or beyond us" (2018, np). Learning, according to Plauborg, should rather be understood with reference to "reconfigurations in the intra-active movements that are boundary-making practices, as they simultaneously open, enable and cut off". Plauborg concludes that these reconfigurations (in the process of learning) do not lead to separability and individuation; rather, it is the acquisition of something we already were and are a part of (2018, np).

Giorza posits that Barad's agential realism should influence the way we view 'child' and 'learning' in that "[l]earning can be conceptualised as a disturbance that troubles the world". New relationships, understandings and meanings set new things in motion (2018, p. 68). As discussed in Chapter 1, diffraction is a methodology that works with disturbances and difference in a way that is both positive and generative.

Again, why is this significant? According to Barad the point is not merely that knowledge practices have material consequences but that "practices of knowing are specific material engagements that participate in (re)configuring the world. Which practices we enact matter – in both senses of the word" (2007, p. 91). Knowledge-making is therefore not "simply about making facts but about making worlds" (p. 91).

Worlding

Taylor (in Diaz-Diaz & Semenec, 2020, p. 216) notes that Latour originally came up with the term 'common worlds', a concept that generated the Common Worlds Collective.[71] Perhaps inspired by this idea of common worlds, Barad (2007) and Haraway (2008) refer to 'worlding', a notion that contests the subject/object binary of Cartesian epistemology and also moves beyond Haraway's earlier concept of 'situated knowledges' (Giorza, 2018, p. 63). The idea of worlding "pushes past the human-centric limits of 'society'" (Taylor in Taylor et al., 2020, p. 216) and helps us understand that children grow up in an indivisible common world, living and dying (to use Haraway's poignant expression) in-between and together with myriad creatures and forces, not simply in a society made up of humans. Taylor goes on to observe that she sees the word 'common' as a verb, rather than as a noun or adjective – "as the act of commoning or bringing together" (p. 216). Commoning is the opposite of individualisation and privatisation – it is a "collective agentic process" (p. 217), and can be used as a kind of shorthand for resisting the idea that we can ever act alone. It therefore seeks to do justice to the intra-activity between the human and more-than-human, and proposes that children's lives should be understood as situated within "the real, messy, imperfect, and undivided natural and cultural worlds they (and we) inherit and inhabit" (Taylor & Pacini-Ketchabaw, 2017, p. 132). For Haraway, life is "a risky game of worlding and storying; it is staying with the trouble" (Haraway, 2016, p. 13), and similarly for Tsing et al., worlding is "theorizing and storytelling" that is grounded in "the historical materialities of meetings between humans and non-humans" (2017, M23).

As mentioned above, knowledge production according to Braidotti (2019, p. 33) is always "multiple and collective", with the subjects involved in this process constituting "a relational

[71] As described on their website, http://commonworlds.net/about-the-collective/: "The notion of common worlds is an inclusive, more than human notion. It helps us to avoid the divisive distinction that is often drawn between human societies and natural environments. By re-situating our lives within indivisible common worlds, our research focuses upon the ways in which our past, present and future lives are entangled with those of other beings, non-living entities, technologies, elements, discourses, forces, landforms."

community", or indeed, a common world. Drawing on Deleuze and Guatarri (1987) and her own work (Braidotti, 1994), she defines this community as

> a nomadic, transversal 'assemblage' that involves non-human actors and technological media. Material, mediated posthuman subjects constitute a materially embodied and embedded community, a 'people', bonded by affirmative ethics. (Braidotti, 2019, pp. 32–33)

Crucially, human knowers are not at the centre, or indeed the purpose, of the world worlding (Giorza, 2018, p. 64). What this means for education is that learning is a phenomenon, a phenomenon that includes human (including children) and non-human bodies, space, time, discourses and concepts, all working together, constantly on the move, always in the process of changing and becoming. Taylor and Pacini-Ketchabaw (2015) describe this as learning emerging "from the relations taking place between all the actors – human and more-than-human alike" (2015, p. 508). Haraway makes the point that "ontologically heterogeneous partners become who and what they are in relational material-semiotic worlding. Natures, cultures, subjects, and objects do not pre-exist their intertwined worldings" (2016, pp. 12–13).

Giorza (2018, p. 64) draws on these ideas to develop the concept learning-as-worlding, stating that this allows her to work with a posthuman concept of becoming that disrupts the "inherited and deeply embedded tropes of nature and natural, inside and outside space, organic and non-organic" that operate in schooling spaces. Working with ideas of the world's becoming and worlding enables a moving away from foregrounding human action "in its own plane of existence".

In Barad's agential realism account, she does not regard agency as a property or characteristic: "Agency is not held, it is not a property of persons or things; rather, agency is an enactment, a matter of possibilities for reconfiguring entanglements" (Barad in Dolphijn & van der Tuin,

2012, p. 54).[72] This is very different from the liberal humanist conception of agency as a choice emanating from a bounded individual and acting on an object.

Worlding with Covid-19

The arrival of Covid-19 and its effects on the world are an example of worlding experienced at the time of writing this dissertation (some of which I wrote during one of the most restrictive lockdowns experienced globally). It very soon became clear that the current pandemic is not just, or even mainly, a health crisis, in spite of it being characterised as such by government representatives in the early stages.[73] In the words of Sayed and Singh, writing at a time when schools and universities across the country remained closed, and South Africans were reeling from increased hunger and economic vulnerability, "... it is a crisis of inequality and neoliberalism, a crisis of disaster capitalism and decades of austerity programmes and sustained attacks on fragile public systems and services provided by the state" (2020, p. 21). The intersectional stressors of living with inequality, racism, classism, marginalisation or being 'othered' are, in the context of vulnerabilities to Covid-19, increasingly understood to "act at a cellular level even in the presence of adequate medical care" (Baldwin-Ragaven, 2020, p. 34, cited in Black, Spreen & Vally, 2020, p. 48). The pandemic is a naturalcultural phenomenon, highlighting the critical importance of taking account of the agential entanglements of intra-acting human and non-human practices.

The coronavirus emerged as a phenomenon through intra-actions with human and more-than-human entanglements, and in exercising its agency, made a difference in the doings and becomings of the world and its inhabitants. The school closures experienced in most countries, with profoundly different consequences and effects on children, families and communities depending on their socio-economic and political vulnerabilities, were just one of the far-

[72] Further on in this interview (Dolphijn & van der Tuin, 2012, pp. 55–56) Barad engages in a brief discussion of a paper by Chris Wilbert called "Profit, Plague and Poultry: The Intra-active Worlds of Highly Pathogenic Avian Flu" (Wilbert, 2006), on the bio-geo-politics of flu pandemics. This is an example of worlding that is highly relevant in the context of Covid-19.

[73] "For us as a sector [education], the coronavirus is mainly a health problem, then a social, economic and political problem." – Angie Motshekga, Minister of Basic Education, South Africa (SABC News, 2020: 1:43).

reaching consequences of this worlding. Another consequence was the disruption of research methods in education, as classrooms went online or temporarily disbanded. We are implicated in an "always becoming relational ontology" (Peers, 2018, p. 33), becoming-with the virus, engaging in a "non-optional" (Haraway, 2016) ongoing worlding which is unpredictable in its entangled becoming. As mentioned in Chapter 1, this study is an assemblage, with Covid-19 playing a role as one of its co-constitutive agents, and in the following chapter I explore some of the documentation produced by children and their teachers as they experienced the sticky knots (Haraway, 2008) of worlding with the virus.

Ethico-onto-epistemology

Western philosophical tradition regards epistemology, ontology and ethics as entirely separate fields, but this premise depends on specific ways of understanding. Barad breaks down this dualistic way of thinking by introducing the neologism "ethico-onto-epistemology", explaining that we need to develop an appreciation of the intertwining of ethics, knowing, and being. Specific practices of mattering have ethical consequences because they necessarily exclude other kinds of mattering, and therefore onto-epistemological practices are always in turn ethico-onto-epistemological:

> … [s]ince each intra-action matters, since the possibilities for what the world may become call out in the pause that precedes each breath before a moment comes into being and the world is remade again, because the becoming of the world is a deeply ethical matter. (Barad, 2007, p. 185)

For Barad, questions of ethics and of justice are "always already threaded through the very fabric of the world" (Barad in Dolphijn & Tuin, 2012, p. 69). They are not an additional concern or a separate field of knowledge of philosophy. "Being is threaded through with mattering. Epistemology, ontology, and ethics are inseparable. Matters of fact, matters of concern, and matters of care are shot through with one another" (Barad in Dolphijn and Tuin, 2012, p. 69).

Davies observes that ethics, as Barad defines it, is a matter of "questioning what is being made to matter and how that mattering affects what it is possible to do and to think" (2014, p. 10). Ethics thus emerges in the intra-active encounters in which knowing (epistemology), being (ontology), and doing (ethics) are inextricably entangled. So while modernist ethics judge the individual, pronouncing them moral or immoral, innocent or guilty, Giorza notes that a postmodernist ethics "looks for the ethical relationships, the connections of response-ability that produce the ethical subject in particular timespacematterings" (2018, p. 270). Davies (2009) expresses this by drawing on Deleuze: "[e]thics no longer rests so much on individualized decision-making subjects, but on the ongoing openness of each to the other, and the recognition each bestows on the other, moment-by-moment" (p. 28). Indeed, for Barad, ethics are not restricted to humans with a moral conscience, they are the effect of being entangled in relations of co-responsibility (Giorza, 2018, p. 82).

The implications of an ethico-ontoepistemology as an "always already implicated knowing-in-being" (Giorza, 2019, p. 114) for what happens in learning, for what we notice in a pedagogical context and for how and what knowledge is produced, are profound. This way of being in the world invites us to become more aware of our connections and therefore enlarges our capacity to respond and become increasingly "response-able" (Haraway, 1997; Barad, 2007). The impact of our being in the world requires our accountability for "marks on bodies" (Barad, 2003, p. 817; 2007, p. 394). For Murris (2016c, p. 292), the ethical consequences of a viewpoint such as critical posthumanism in which nothing is regarded as standing 'outside', 'above', or taking a privileged transcendental position, is to "profoundly democratise relationships within the one species (e.g. young/old, black/white, male/female) and between humans and other earth dwellers" (p. 292). This has a decolonising effect, in that diversity and complexity are recognised, otherness is respected, and different knowledges are acknowledged.

In a recent interview, Jayne Osgood describes some of the differences that have emerged in her everyday life as a result of working with an understanding of ethico-onto-epistemology:

> The way you live your life is not the same, you can't look at anything—a piece of glitter, a Lego brick, noodles, anything—your whole world becomes diffractive… you know it's the "and and and…". The world of which you are part then becomes so complex but you also realize—and it's Barad's stuff about the smallest cuts matter—that every single tiny thing that you do is deeply ethical and deeply political and therefore you have a response-ability to recognize the gravity of it—I guess it's Haraway's concepts of worlding, world-making—and so then when you start to live life in that mode then research becomes so much more important, significant, affecting and affective. ...Haraway's more liveable worlds start to materialize through the everyday. (Osgood in Osgood et al., 2020, pp. 50–51)

In their analysis of a posthumanist orientation to literacies, Zapata et al. consider a rethinking of the teaching of writing to be a matter of ethics (2018, p. 479). This is because a posthuman way of thinking about language and literacy "animates the complexities of teaching and learning as intricate and dynamic relationships that emerge under particular conditions of possibility" (p. 479). New texts, new ideas, new motivations, new identities and so on are produced in a writing classroom as "bodies, paper, languages, pencil, digital media, and desires work in concert". The authors point out that through this perspective, one is able to "enter into an analytic gaze focused on the in-the-moment realities of students, teachers, sensations, materials, cultures, languages, and other semiotic materials coming to be together". They argue that this is an ethical orientation that "relocates the teaching of writing on the intradependence of human-nonhuman-life" which can be achieved by "attending to the entanglements of writing and its multiple productions", rather than a focus on human actions alone (p. 479).

Response-ability

Ethics are often proposed as lists of rules, says Donna Haraway, with what is good and bad known in advance, "a kind of sorting of the good from the bad and a series of principled actions

that must be taken as if they can in some sense be listed as responsibilities" (Haraway, 2019).[74] She suggests that a more fruitful way to think about ethics is as an enquiry, as an "ongoing practice of cultivating the capacities to respond". She proposes that the word 'response-ability' is a kind of "orthographic provocation" to understand capacities rather than rules, and the strengthening of each other's capacities to respond. This capacity to respond needs to be cultivated in teachers and learners, so that we don't look away from the impact our being and doing has on the world, including selves and others, human and non-human (Haraway, 2016, p. 35).

This configuration of response-ability can also be seen in Deleuze's assertion that ethics is about "not being unworthy of what happens to us" (Deleuze, 1968, cited in Thiele, 2016). This has been interpreted as moving the ethical discourse from one focused on the right conduct (assumed as given), towards one that "exposes itself to the real precariousness and ambiguity of each and every of our practices" (Thiele, 2016, np). Haraway (2016, p. 38) draws on Tsing when proposing ethics as a "commitment to living and dying with response-ability in unexpected company". Haraway has long advocated for response-ability as the best chance for "cultivating conditions for ongoingness" as we work for "more livable worlds" (Haraway, 2003, 2016).

If we accept that pedagogical practices are a mixture of material-discursive phenomena actualised as habits of thinking and doing, Lenz Taguchi (2010) asks, what are the implications for practice, or differently put, the response-abilities of teachers? She proposes that we need to make ourselves much more aware of, as well as find ways to make use of, "the complexities, differences and diversities of the material-discursive contexts we inhabit. We need to critically analyse what taken-for-granted habits of thought and action the materialdiscursive intra-actions construct in our pedagogical spaces" (2010, pp. 49–50). Enlarging and expanding what we notice and how we incorporate these collected experiences in our pedagogy will make it

[74] This quote is from an interview with Haraway, recorded as a podcast on 8 May 2019, accessed from https://www.thedigradio.com/podcast/cyborg-revolution-with-donna-haraway/ in July 2020.

easier for us to do justice to the differences and multiplicities among children, students, contents, matter and environments that intra-act with each other. Barad explains this as "listening for the response of the other and an obligation to be responsive to the other, who is not entirely separate from what we call the self" (Barad in Dolphijn & Tuin, 2012, p. 50).

> We (but not only "we humans") are always already responsible to the others with whom or which we are entangled, not through conscious intent but through the various ontological entanglements that materiality entails. What is on the other side of the agential cut is not separate from us – agential separability is not individuation. Ethics is therefore not about right response to a radically exterior/ized other, but about responsibility and accountability for the lively relationalities of becoming of which we are a part. (Barad, 2007, p. 393)

A note on 'materialdiscurve wordplay'

Much has been said by scholars working within the posthumanist framework about the frustrating constraints of language when trying to write about ideas which try to push our thinking and doing beyond the bounds of language and discourse (e.g. Kuby & Rucker, 2016, pp. 3–4; Giorza, 2018, p. 86; Hackett, et al., 2020, p. 7; Affrica Taylor in Diaz-Diaz & Seneca, 2020, p. 212). Barad reminds us that Nietzsche warned against the propensity to "take grammar too seriously" by granting the structure of language the power to "shape or determine our understanding of the world, believing that the subject-and-predicate structure of language reflects a prior ontological reality of substance and attribute" (2007, p. 133). She calls this a "continuing seductive habit of mind worth questioning" (p. 133).

Taylor (2020, p. 212) observes that modern English grammar seems to be structured around the "humanist premise that agency can only be exercised by human beings" and this has the effect of perpetually "nudging you back into the familiar pattern of child subject does something to non-human object". She admits that it is difficult "not to slip back into human-centric

accountings from time to time" and suggests that at least part of the problem is that "the grammar ... leads us back there" (p. 212).

Creative solutions have been employed to overcome or at least gesture towards these difficulties, including the use of images (e.g. Blaise & Pacini-Ketchabaw, 2019, pp. 109–120), poetry (e.g. Osgood & Robinson, 2019, pp. 184–196), a focus on the significance of sound (Dernikos, 2020), movement (Olssen, 2009) and the use of various marks on the page such as hyphens, brackets, and the joining of words. Giorza (2018) invites us to think of these marks as more than punctuation, as in fact exercising agency. For example, hyphens link words that are intra-active:

> 'becoming-with' is an important term that is different from 'becoming with'. The 'becoming' is because of the state of being 'with'. What is implied is that there is both difference within and difference between. The meeting of the differences between creates the possibility for becoming different with and within. (Giorza, 2018, p. 86)

For some authors, the forward slash (/) is used to express or enact a binary, for example in the writings of Lenz Taguchi when she refers to "theory/practice and discourse/matter" (Lenz Taguchi, 2010, p. 20). Words can be joined with a hyphen to indicate the undoing of a binary and the presence of an intra-active co-constituting ontology, as in "material-discursive" (Barad, 2007, p. 146).

In contrast, Murris and Haynes (2020) elaborate their use of the forward slash by explaining the idea that knowledge is neither 'embodied,' nor 'disembodied,' but is 'dis/embodied': "The '/' indicates the relational ontology that underpins the way we understand sympoietic pedagogies as always disrupting or queering the 'cutting into two', the 'dichotomies', and binary logic of the Cartesian cuts of humanist knowledge production" (Murris & Haynes, 2020, p. 28). This refers to what Barad calls a "cutting-together apart in one move" (Barad, 2014) and in so doing,

"more complex relational elements are given credit as playing their own part in knowledge production" (Murris & Haynes, 2020, p. 28).[75]

Plauborg (2018, np) explains her use of 'dis/continuity' with reference to Barad, by saying that the slash shows a fundamentally different conception of temporality. Due to the fact that Barad eliminates the dichotomy between continuity and discontinuity, they "cannot be understood as separate, but as intra-acting processes simultaneously entangled in the past and the future" (Plauborg, 2018, np).

Giorza (2018) notes that brackets add a 'both-and' action so that for example, '(re)producing' is both producing *and* reproducing (as in Lenz Taguchi, 2010, p. 25) and '(im)possibility' is both possible *and* impossible (see Lenz Taguchi, 2010, p. 136). Barad creates compound words by eliminating the space between two or more words, such as "spacetimemattering" (2007, p. 179) and "SpaceTime" (2010, p. 249) so that their entanglement is self-evident in the language used.

Haraway has made mention of her preference for using gerunds rather than nouns and verbs, referencing her creative use of language as follows: "Reality is an active verb, and the nouns all seem to be gerunds with more appendages than an octopus" (Haraway, 2003, p. 6). One example of her wordplay is the word "tentacularity" which she uses as a reference towards intra-activity and life lived along lines, rather than at points or in separate spheres (2016, p. 32).

Kuby and Gutshall Rucker (2016) coined the term *literacy desirings* which I have adopted as a reconfiguration of literacies for the purposes of this study, to express the "intra-actions, movements, and surprises that students and materials produce *while* creating rather than their end products" (p. 5, emphasis in the original). This term, as a construct of adjective and gerund,

[75] See European Graduate School Videos (2019, August 13) for a lecture in which Barad explains her use of "poetics" such as the forward slash (/).

allows them to express the intra-active and process-oriented aspect of a literacy event (Barreiro, 2020, p. 97).

(In)conclusion, Kuby and Rucker (2016) articulate their attempt to embody poststructural and posthumanist ideas in the way they write, saying that they use hyphens, ellipses, and slashes "as a way to show the in-between-ness and becoming expressed in poststructural and posthumanist theories" (2016, pp. 3–4). They acknowledge that at times this kind of writing does not feel comfortable, for neither writer nor reader, but that it can be seen as an invitation to inquire into what "the theory/writing is producing in/for you".

With this framework supporting a fundamentally different way of understanding pedagogy, let us move into the contact zones of children-teachers-materials-technology-naturecultures-discourses-companion species-earthdwellers- and … and … and, living and dying together, staying with the trouble and co-creating worlds in and through literacy learning.

Chapter 5: Storying with monsters and dragons

My inquiry into the teaching and learning of literacy at Mamela House quickly took shape as a rich entanglement of humans with nonhuman bodies. Digital technologies, particularly smartphones, tablets, laptop computers and various applications on/in these devices, and many more nonhuman materials played an active role as actors and agents in the complex literacy learning-and-worlding assemblages captured on Class Dojo by the children, teachers and parents during the period I engaged with them for the purposes of this study. As a researcher, I was implicated as an integral part of that entanglement as I (re)turned to the school's documentation during and after the Covid-19 lockdown in 2020 (discussed in Chapter 1), and engaged in a process of diffractively analysing the pedagogical documentation through the theories of poststructuralism and posthumanism.

Human-tech cyborg: Becoming together

The rapid advance of digital technology over the past two decades has been met with diverse reactions by educators and parents of young children, from enthusiasm for new opportunities and modalities to a "persistent suspicion of their possible negative effects" (Merchant, 2017, p. 248). Recent studies have found evidence of positive implications of children's digital play, including beneficial impacts on knowledge, skills, creativity and family relationships (e.g. Marsh et al., 2020), but fears around excessive use and inappropriate content (however that is defined), as well as concerns around privacy, are important factors in this complex issue. Merchant observes that these reactions are intensified when thinking about young children and what these technologies do for, with, and to them. Erstad et al. (2020) note that inequitable access to the latest technologies within and across societies means that, in addition to the concerns mentioned above, "variable distribution of digital technologies risks worsening issues of child equity on a global scale" (2020, p. 4).

Due to the Covid-19 lockdown, children with access to digital technology (which included all the children in this study) found their schooling experience abruptly moving online. This created an interesting situation for parents at the school who had up until this moment restricted their children's access to digital technology, even though the use of digital media has been a characteristic of Reggio Emilia preschools since personal computers became popularised in the 1980s (discussed further towards the end of this chapter). The teachers at Mamela House observed that when the class moved to remote schooling, it was immediately apparent which children had been allowed more access than others in the "before-Covid" era, as they knew their way around the devices and were much more at ease with the affordances of the technology. They noted that while many children had previously used digital technology mostly for what was considered entertainment (watching videos, playing games), by the end of lockdown all children in their care had come to regard these devices as multi-faceted and multi-purpose, as means of communication, play, work, learning, sharing, experimentation, being-together with friends, family and school community, all melded together. Relationality with technology has become an integral part of what it means to be human in the 21st century, even for young children.

Marsh et al. (2020) conducted a large-scale research project in 2019/2020, the purpose of which was to investigate the relationship between children, play and technology in two countries (South Africa and the United Kingdom). They found that in South Africa, "the concept of race and ethnicity", with its historical roots in the Population Registration Act No. 30 of 1950, introduced during the apartheid period, "continues to be central in defining access to resources, infrastructure and general wealth distribution" (Marsh et al., 2020, p. 8). Children's access to technology in this country is significantly correlated to their economic status (p. 11), which in turn is significantly correlated to their ethnicity (p. 10). The digital divide between those with ready access to technology and those without such access is deepening every year. This situation was brought into sharp relief during the Covid-19 school closures, with privileged (usually White) children, being able to continue their schooling remotely throughout the lockdown period, while children with fewer resources (usually Black and Coloured children),

found their efforts to do so severely compromised by a lack of technological devices such as laptops and tablets, or data for connectivity, or both.

Dixon and Janks (2019), when writing about children and technology in South Africa, note that most of the research in early childhood that is concerned with children's relationality with digital technologies (e.g. Burnett, 2010, 2015; Harwood, 2017; Flewitt et al., 2015) is situated in the political North (p. 88).[76] While the children in my study, like the child Dixon and Janks write about in their article, have privileged access to digital technologies at home and are comfortable with both old and new technologies, it is important to remember that this is not the case for a significant majority of children in South Africa.

Digital literacy

Recognising our algorithmic condition (van der Tuin, 2019) is an acknowledgement that as much as humans have produced technology, these tools are active not only in assisting us in the production and creation of things-in-the-world, but they co-produce and co-create *us* as we intra-act with them in an ongoing dance of making ourselves intelligible to the other (Barad, 2007). It has become impossible to separate subject and object in the dizzying twisting and turning of our sympoetica (Haraway, 2016).[77] As observed by Baynes in her posthumanist analysis of digital technology and research design, "Human subjectivity does not emerge from an essentialist position of rational autonomy, but is rather an effect of the systems, networks and ecologies within which it is located" (Baynes, 2016, p. 94). These technologies make us as much as we make them. This perspective is the part-and-parcel of the mangle of literacy pedagogy in a digital age, as children encounter and engage with screens as part of their worlding from a young age.[78]

[76]See Prinsloo, 2005, Marsh et al., 2020, and Dixon, 2020 for more about South African primary school children and their experiences with technology.

[77] By using the word 'sympoetica' I am playing with Haraway's extensive use of the term "sympoetic" (meaning 'becoming-with') in her 2016 book, *Staying with the Trouble*, derived originally from Beth Dempster's 1988 thesis.

[78] I introduce the term 'mangle', borrowed from Pickering (2002), in Chapter 1.

David Kennedy, philosopher of childhood, reflects on the transformations brought to bear on literacy in the digital age:

> Traditional cultures are associated with an oral information environment, and modern ones with literacy. The new information environment may be thought of as a dialectical reconstruction of the two in a third form that integrates orality and literacy—the medieval and the modern—in new ways. The new information environment is constructed on digital code, like the literate, but is *instantaneous, personalized, spontaneous, and interactive* [my emphasis] like the oral. (…) It does not so much erode the personal boundaries of the modern middle-class subject as virtualize them, so that they can interpenetrate in new ways. A new sort of play with boundaries presents itself as a possibility. (Kennedy, 2006, p. 107)

The "instantaneous, personalized, spontaneous, and interactive" nature of digital engagement means that children who are learning to read and write today in their worlding with technological devices such as iPads, smartphones and laptop computers, are doing so in a fundamentally different manner to the way in which their teachers, and their teachers before them (stretching back to the beginnings of alphabetic literacy) became literate.

Karen Wohlwend, who has written extensively on play and literacy, urges educators to think beyond print-intensive reading/writing activities to "envision playful and digital early childhood curricula that support participatory literacies in converging media – popular media, digital media and social media – that make up modern cultural repertoires for communicating and living" (2017, p. 62). The media she describes become active agents in the literacy desirings of children, and should be respected and drawn in as significant co-creators in the intra-active doing of literacies.

Figure 4: Children-tablets-smartphones-paper-pencil-monster assemblages.

An ethico-onto-epistemological orientation towards literacy recognises that this becoming-together-with technology is not innocent or without tangled threads and knots (Haraway, 2016). These devices did not become part of the learning assemblage from nowhere. Many users of technological devices such as tablets and smartphones remain unaware of the tangled threads of injustice around their provenance, even if the injustices around access are easier to

see.[79] Burnett et al., (2020) observe that when we frame children's use of digital technological devices in a binary way (e.g. as positive, in terms of their many educational affordances, or negative, as instruments poised to harm children), other ways of thinking about them recede into the background. We forget that the use of these devices are inextricable from their production and distribution. They point out that "introducing mobiles into classrooms involves school children in the circuit of invisible digital labour that underpins emerging economies – submitting individuals to infringements of privacy, recasting them as producers of information for data mining and targeted advertising" (Burnett et al., 2020, p. 120). The economic and environmental effects of the increased usage of iPads in classrooms have received relatively little attention, and "somehow young children's interactions with digital devices are held apart from all of this" (p. 121). The authors urge us to "trac[e] the iPads in an alternate direction" into the world of device and app design, "the invisible workings of pieces of technology, from the codes they rely on to the connections and circuitry that they depend upon – and eventually to the mineral extraction and labour conditions involved in their production" (Burnett et al., 2020, p. 121).

Our interest in children's use of technologies can focus our attention on just the human, while a posthumanist orientation involves 'looking in a different direction', the result being that "other forms of inequity and exploitation come into view – human as well as more-than-human" (p. 121), and the relational entanglement that is produced by their intra-action.

Child-iPad phenomenon

Barreiro (2020), in her article about rethinking causality through children's literacies, points out that "the child-pencil phenomenon is not the same as the child-iPad phenomenon" (p. 92). Different 'objects' (children, iPads, pencils) emerge from each intra-action, "perhaps slowly and imperceptibly, but changing nevertheless" (p. 92). The point here is that the pencil affects the

[79] This is particularly poignant given that Black Lives Matter protests which became a global phenomenon during the 2020 Covid-19 lockdown, drove a focus on issues around social justice, White privilege and the devastating effects of social inequality around the globe. Despite the growing urgency of calls for social justice and equality, we are nowhere near untangling these knots, particularly as neoliberal societies in the grip of late-stage capitalism.

child in a different way than the iPad, making some things possible and others impossible, some things accessible and others inaccessible. The relationality of the human and the non-human results in different assemblages. This, says Barreiro, can be understood in terms of Barad's notion of "the mutual constitution of entangled agencies" (Barad, 2007, p. 33). Thus, depending on the nature of the intra-action, different worlds or worldings emerge.

For example, after posting several videos he had created onto Class Dojo, one child realised that his teacher and classmates found the speed of the movements of the visual images in his videos disorientating. The general blurriness of the video he made of himself giving a review of Roald Dahl's book, *The Twits,* might not have been intended by the film-making child: in his narration he informs the viewers that he is holding the book upside down to indicate that the characters are intentionally upside down on the cover, but perhaps in his excitement in sharing the drama of the book, he vigorously and repeatedly moved the book up and down. (The photo alongside is a screenshot of the video uploaded onto Class Dojo by the child.) In later book reviews and other videos, the images are clearer, as if he is making an effort to address the perspective of the viewer and the affordances of the recording device in the making of his video. In this event the iPad-Class Dojo-child-book-hands-voice-teacher-peers-book review assemblage creates the learning experience, each element (and many others beyond our view) working together to co-create a different knowledge-making event than would have been possible if the child had presented his book review in the classroom without mediating it through a screen. In this way the literacy event is inextricably entangled with the material.

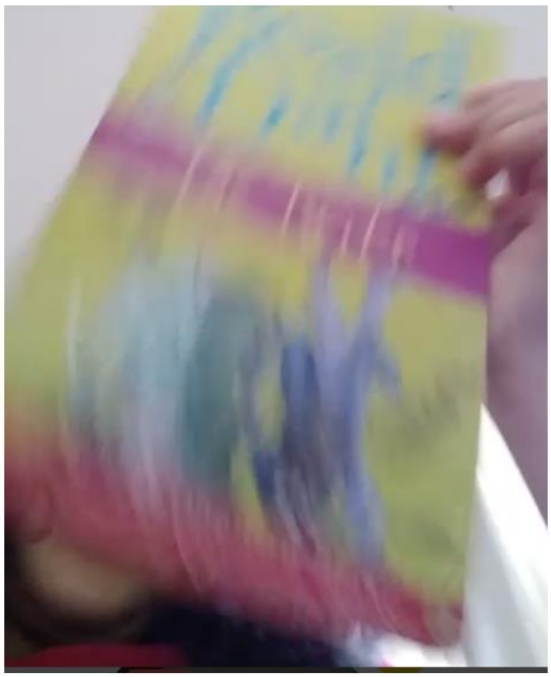

Figure 5: Discovering the affordances of book-reviewing by video.

Kuby and Rucker (2020, p. 248) highlight a similar incident when they noticed in their research documentation that children's movements when making a video seemed to indicate that they were unaware of the zoom function on the camera on the iPad they were using to record a video of a classmate reading a picture book aloud (the video was intended for younger children's enjoyment). The children (holding the iPad) moved closer to the reading-child instead of using their fingers on the iPad screen to zoom in to get the desired effect. The insight the authors drew from this event was that "children need time to play-with digital tools – to understand their multiple affordances and constraints with other bodies – just like they do with art supplies…" (Kuby & Rucker, 2020b, p. 248). Literacy desiring is honoured and enabled when the child is given the time and space to experiment, 'fool around', and become-with other bodies. This kind of freedom was afforded to children at Mamela House, as children were encouraged to make choices, experiment and 'play outside the lines' with materials.

In their earlier work, Kuby and Rucker (2016) note the following about technology's agency in the literacy assemblage:

> Technology in these projects was not (solely) the end product, but integral to the processes/desirings. Even though students were familiar with a variety of apps on the iPad, they found that making a video with future users/viewers in mind was harder than it looked. Students realized that the silent presence of the videographer, although usually unnoticed, was intra-acting with the iPad, space, materials, and bodies of the actors. (Kuby & Rucker, 2016, p. 110)

In the case of the child doing a book review of *The Twits*, it was the silent presence of the viewers of the video which intra-acted with the other human and nonhuman actors and together, created this particular literacy assemblage.

A storying assemblage

Figure 6: Storying with whiteboard-markers-duster-voice-hands . . .

In another event, a video was made by a family member as they came upon their child working at a desk in their home during the Covid-19 lockdown, creating/playing-with/storying with a whiteboard, whiteboard marker, duster, voice, hands, and vigorous yet careful movements involving each of these. The child indicates their awareness of the camera by gazing directly 'into' it for a moment, and so the camera becomes folded-into the literacy-desiring. The white board-marker-duster assemblage enables the child to draw and erase and (re)draw, revising her illustration as the storying unfolds. The freedom afforded by the white board, marker and duster, so different from marks on paper made with pencil and especially pen, enables the story to meander, grow, develop, circle back, change direction. Within the confines of this video (a screenshot of which is reproduced alongside), it is not possible to see if there was a 'point' or 'purpose' to this activity, or if it was related to a larger project the class was involved in. It

seems to have no purpose other than to be part of an assemblage of storytelling. This is newness emerging, literacy unbounded.

But is this, in fact, literacy? In the words of Kuby and Rucker (2016), "Can children create-with-materials as a way to write?" (p. 188) or is an alphabetic component always needed as an end product in order for it to count as literacy? The focus in a Reggio Emilia approach is on developing the 'hundred languages' of children, and this focus insists on broadening the definition of literacy beyond what Kuby and Rucker refer to as "school-sanctioned literacy" (2016, p. 65). In his poem which inspires this broadened view of literacy, Malaguzzi asserts that "the child has a hundred languages (and a hundred, hundred, hundred more)" but that the dominant school system "steal[s] the ninety-nine", confining the child to alphabetic reading and writing (see Chapter 3 for a discussion on the 'hundred languages').

When considering the dominance of discourses around writing in school, and the privileging of alphabetic print over drawing, Zapata et al. (2018) observe that schooling "positions children who want to engage with visual storytelling as *not-yet writers*" [my emphasis] (p. 479) and argue for engaging with posthuman scholarship to "explore and cultivate more inclusive orientations for literacies". This is an attempt at resisting the excessive power language has been granted in determining what is real (Barad, 2007, p. 133) and the "deep mistrust of matter, figuring it as mute, passive, immutable" which has resulted (Murris, 2016, p. 165). The world of adults is regarded as one which is dominated by thinking, and more specifically, thinking with and through the tool of literacy. It follows that children who are pre-literate are excluded from this adult world, this "fully human" world (Murris, 2016a, p. 165).[80]

Whether in the 'classroom' or at home or anywhere (in)between, the intra-action of bodies, paper, whiteboards or blackboards, languages, pencil, markers, digital media, and desires produce new realities (new texts, new ideas, new motivations, new identities). As Murris notes,

[80] David Kennedy (1989, cited in Murris, 2016a) writes about the configuration of child as historical Fool, as living on the margins of the adult world which favours language, literacy and the kind of Cartesian rationality which splits the world into subject and object.

"knowledge production and expression merge and draw on all of child's materialdiscursive languages" and in so doing, disrupt "the ontoepistemic injustice routinely done to children" (2016a, p. 166). This posthumanist perspective on language and literacies focuses on the "in-the-moment realities of students, teachers, sensations, materials, cultures, languages, and other semiotic materials coming to be together" (Zapata et al, 2018, p. 479), or what Springgay would call the "speculative middle" (2019).[81] Zapata et al (2018) resist the binary labeling of events as "simply one or the other—traditional writing or nontraditional writing" (p. 481). Rather they propose a larger perspective that recognises "a multiplicity and convergence of many possibilities" resulting in an account of "writing and writers as shifting, changing, and becoming more than they once were" (p. 481).

As mentioned previously (in Chapter 4), the authors regard this as an ethical orientation to the teaching of writing (or literacy more broadly) due to its attending to "the entanglements of writing and its multiple productions" (Zapata et al. 2018, p. 479). This resists the powerful currents of humanism that constantly pull us toward a focus on human pursuits alone (Kuby, Spector, & Thiel, 2019).

"My favourite thing": Becoming-with a literacy app

The following vignette describes a practice combining digital literacy with a traditional phonics progression through an application used by the children during and after lockdown.

During my intra-view[82] with the class teacher at Mamela House, I asked her to elaborate on the school's approach to working with children who were perceived to be struggling with literacy. Her response was as follows:

[81] I introduce Springgay's idea of the "speculative middle" in Chapter 1.

[82] See Chapter 1 for a discussion of how I have reconfigured the traditional interview as an intra-view. (This intra-view was conducted over Zoom's video-conferencing technology during lockdown, on 22 July 2020.)

> While we don't believe children are broken and need to be fixed, we do recognise that some children have barriers, or 'special rights' in the Reggio parlance, for example eyesight problems, dyslexia, or dyspraxia affecting fine motor skills. You do a dis-service if you don't acknowledge those things. Children experience social anxiety when they compare themselves with their peers and find themselves lacking. You do need to support children. So it's about striking a balance, finding learning support that goes with our approach. We regard this as extra practice rather than as "fixing".

So, while the focus at Mamela House is on listening to and developing the 'hundred languages' of children rather than exclusively prioritising alphabetic literacy, the school operates within (or perhaps on the margins of) a larger social and educational system which is focused on norms and standards, as discussed in Chapter 2. As communicated with me during the intra-view, some parents would approach teachers with concerns about their child's progress (or what they perceived to be lack of progress), while others resisted what they perceived to be a pressure from the dominant educational system to label children as having special needs if they didn't progress on the timeline imposed by the national curriculum. Responding to these conflicting perspectives was difficult, but the teachers felt it was beneficial to openly address these concerns and in particular to ask the child if they felt they would like or needed extra practice in a particular area, as they realised children were feeling these pressures themselves (for example, engaging with cousins or neighbours who could read faster or earlier than them). Rather than addressing this issue by assigning the child to a literacy support therapist for 'intervention' and 'remediation' (terms reflecting the medical/psychological model of dominant educational discourse), the school characterises its approach as one of "Let's give this muscle a bit more exercise to make it stronger".[83] After experimenting with various different kinds of 'exercise' they found that a systematic approach of working through phonics was helpful for children perceived to be struggling in this area. Using the children's enjoyment and engagement with digital technology, as well as the fact that all teaching had moved online

[83] From the 22 July 2020 intra-view, as above.

during the period of my study, they asked the children to try out a phonics application called Lalio, spending a few minutes each day working through tasks.

The Lalilo website describes the application as providing students with "adaptive exercises in phonics, word recognition, and comprehension."[84] This program uses artificial intelligence (AI) to become acquainted with the particular child using the technology, and adapts itself accordingly. Child, device, software, artificial intelligence, iterative knowledge construction, and discourses around learning to read are entangled together to become a learning phenomenon. The app is iterative and adaptable: the more the child uses it, the more it becomes acquainted with the child, evaluating and adjusting itself according to its perception of their strengths and weaknesses in terms of phonics instruction and usage. This is an example of worlding[85] together; child and material co-constituting each other in a learning phenomenon. The literacy learning phenomenon is "negotiated and emergent via the effects of a 'mangled' human and machinic agency" (Bayne, 2016, p. 96). This app and many others like it provide differentiated instruction based on the "inputs" received by children, the differentiation based on child learning the machine (which includes the device and the app working together), and machine learning the child. This is the algorithmic condition, a child-app-literacy discourse (phonics)-device assemblage at work. This complex assemblage needs to be recognised as a feature of education in the 21st century.

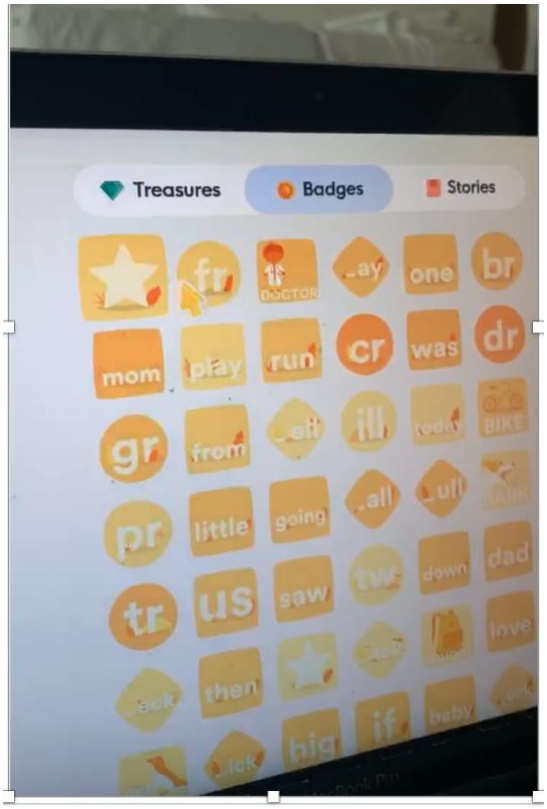

Figure 7: Screenshot of child's laptop showing the badges they have earned by working through certain elements of the Lalilo program.

[84] This is from the website: https://lalilo.com

[85] The idea of worlding is discussed in depth in Chapter 4.

The teacher observed that while some children didn't enjoy this application, others "love Lalilo and will happily spend far more time on it; they become competitive and buy into the 'gamification' of learning; competing with themselves to master the skill and get to the next level."[86]

During the period of research for this study, the teacher became so persuaded by the power of applications like Lalilo to provide instruction and educational assistance to children that she started a non-profit organisation, the goal of which was to make apps like Lalilo for literacy, and Khan Academy for mathematics, available to children from under-resourced schools during and beyond the Covid-19 lockdown, with the goal of reducing some of the inequality in educational provision and outcomes in South Africa.[87]

One particular child uploaded a video onto Class Dojo of themselves working through different elements of the app, explaining how the program works and that their "favourite thing" is: getting a badge (for 'mastering' certain phonemes and sight words) and moving on to the next level.[88]

Worlding with digital books

The Lalio program includes leveled readers. These digital books are part of the 'gamification' that characterises this program, in that the higher the level a child reaches in the phonics program, the more linguistically complex the books which are made available to them. The value of leveled readers has been contested from a posthumanist orientation by Bridges-Rhoads and Van Cleave (2017), in which the refrain " . . . leveled books are killing me . . . " is repeated between vignettes, with the authors exploring the impact of leveled readers on their

[86] From the 22 July 2020 intra-view, as above.

[87] More information about this initiative can be found at https://mindjoy.com.

[88] These concepts of 'mastering' something and 'moving on to the next level' are ostensibly at odds with the Reggio approach. I discuss this below, adopting the Deleuzian terms of smooth and striated spaces.

own children's experiences of reading in kindergarten and first grade, and the effect this had on the authors as mothers and early literacy scholars:

> The leveled books are killing me. My son comes home from school making statements like, ''I'm a K.'' He shows me the little round sticker on the back of his book—the one that marks the level of the book and apparently him as well. ''I'm a K.'' The other day, he accidentally picked up a J at school because he looked in the ''wrong'' box. He didn't want to read it. He's past that; he's a K. I can't help worrying and wondering about this little sticker, in this literacy learning assemblage. (Bridges-Rhoads & Van Cleave, 2017, p. 297.)

They assert that "the notion of entanglement demands letting go of familiar distinctions and given understandings of causality and ontological separability" (2017, p. 309 fn 7) and that these familiar categorisations frame the use of leveled texts in many elementary classrooms (measuring both text readability and readers' abilities, which translate into levels).[89] Bridges-Rhoades and Van Cleave observe that their adventures in posthumanism have extended their "desire for a less convenient vocabulary by focusing not on reader, text or context but on the entire literacy learning assemblage" (2017, p. 309 fn 8).

Kuby and Roswell, commenting on the above quote by Bridges-Rhoads and Van Cleave, note that "this is political, ethical and justice oriented". They observe that these authors, as mothers/researchers/teachers, are "thinking about how materials (books, stickers, level systems) produce their children (and other children)" through their entanglement in "schools, systems and pedagogies of levelling children and books".

[89]Barad's definition of entanglement may be helpful at this juncture: ''To be entangled is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence . . . thereby making it impossible to differentiate in any absolute sense between creation and renewal, beginning and returning, continuity and discontinuity, here and there, past and future'' (2007, p. ix).

Of course, leveled readers can be a useful entry point for children into the world of reading, and are, in my experience, particularly helpful when regarded as one part of a much larger, more complex literacy assemblage.

Speaking of complex literacy assemblages, it is interesting to note that this particular phonics application is American, and an American voice 'comes through' the screen to narrate the book. While this digital book (see screenshot alongside) is about reindeer, animals not found on the African continent where this particular child is located, the next book (which the child also shows us, the viewers, further on in this video) is titled "All about Elephants". The American voice confidently narrates to the South African child a story about African animals not found in the Americas – a complex worlding that left me feeling disorientated by the many geo-bio-socio-economic and political threads in this clip, making up a knot not easily disentangled.

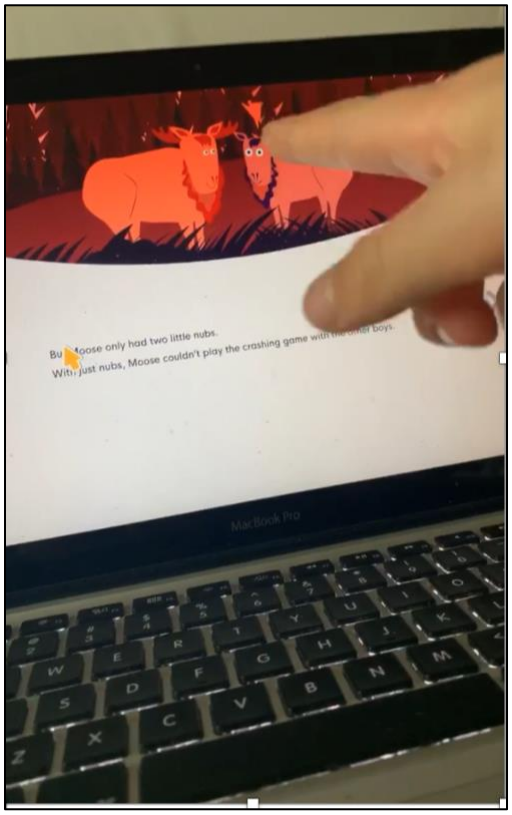

Figure 8: Finger/cursor pointing at digital book.

Children from Mamela House were unable to access the books in their classroom library during lockdown. Like so many other experiences over this period, this aspect of school life moved online, with books being made available to the children through the school's subscription to Oxford Owls, an application which hosts hundreds of leveled readers published by the Oxford University Press, in digital format. These books were narrated in a British accent, underscoring the fact that children living in the 21st century are global citizens.[90]

[90]During the Covid-19 lockdown and its aftermath, local non-profit organisation Nal'ibali (isiXhosa for "here's the story", see https://www.nalibali.org), a national South African reading-for-enjoyment campaign, made hundreds of stories available as audiobooks and digital books during this period of lockdown, on their website and through mediums such as the radio and Whatsapp, at zero data cost.

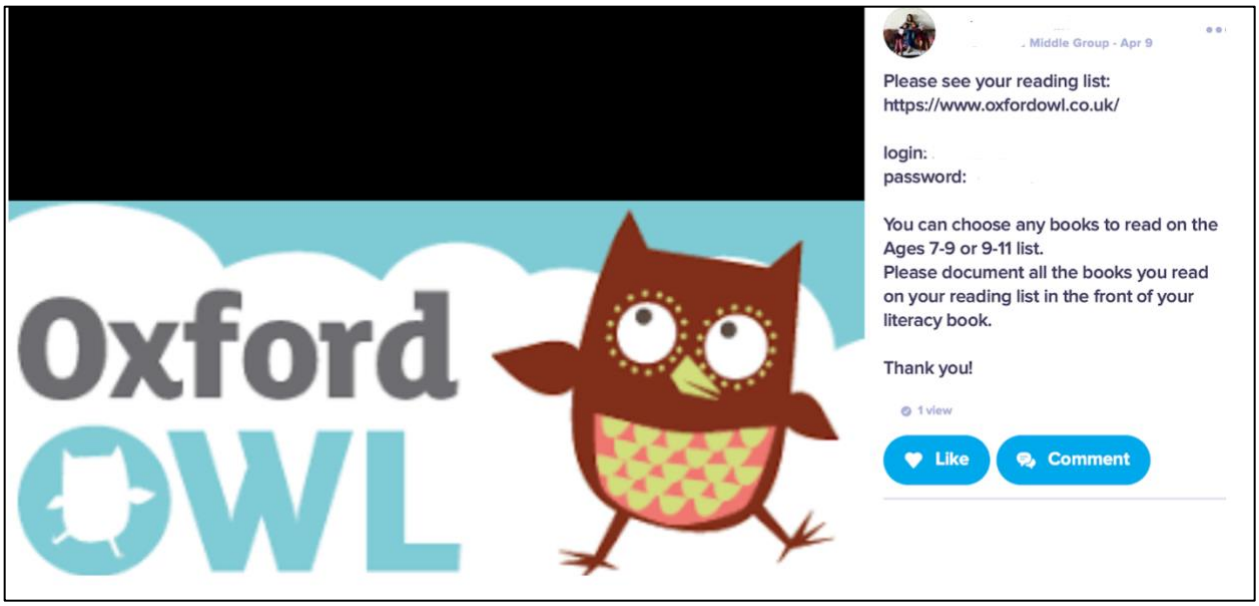

Figure 9: Screenshot of the instruction on Class Dojo from the class teacher regarding using the Oxford Owl reading program.

According to the teachers (as discussed in the intra-view) many of the children regarded these digital books as an extension of when screen time was regarded as being just for entertainment. Some parents noted (in their responses to the questionnaire I circulated) that their children enjoyed the online classroom experience, including associated activities like reading digital books, far more when using an iPad than a laptop, perhaps because of the immediate responsiveness experienced through the iPad's touchscreen.

Digital technology and the literacies associated with it are increasingly part of the assemblage of literacy, although the distribution of devices and data is deeply unequal and mostly occurs along intersecting lines of race and class in South Africa (Marsh et al., 2020). Recognising our algorithmic condition (van der Tuin, 2019) is an acknowledgement that as much as humans have produced technology, these tools are active not only in assisting us in the production and creation of things-in-the-world, but they co-produce and co-create *us* as we intra-act with them. Children encounter and engage with digital technology as part of their literacy desiring and worlding from an increasingly young age, and a growing body of scholarship is focusing on the digital literacy practices and experiences of children. For example, Wohlwend explores

"three models of literacy learning in iPad play" (2017, pp 50–60) and more recently, Routledge published a handbook devoted to digital literacies in early childhood (Erstad et al, 2020). In this handbook, Erstad et al. make reference to a qualitative study by Kucirkova, Messer, Critten and Harwood (2014) in which they note "the embodied nature of children's engagement with touchscreens and the children's profound affective response to the digital books" (2020, p. 290). Another study showed that children's reading in the digital age is "much more eclectic, fast-moving and multi-layered" (Sefton-Green, et al., 2016, cited in Erstad et al, 2020, p. 290) than reading on paper. This is an area which warrants much more inquiry.

No matter the findings of these kinds of inquiries, the intra-action of human and digital worlds cannot be ignored. This entanglement needs to be part of the story with which we tell the story of literacy (Haraway, 2016).[91]

Striated and smooth spaces in the literacy classroom

Deleuze and Guattari (1987) introduced the idea of 'striated' and 'smooth' spaces when analysing the structures of human thinking and action. The highly structured configuration of the city is used to describe the striated space, where "[t]he streets and houses force our bodies to move in certain directions and follow streets and staircases the way they have been planned, structured and built" (Lenz Taguchi, 2010, p. 77). Springgay (2018) elaborates striated space as "coded, captured, commodified, and limited. This is the space of institutions, capitalism, the state, education, White supremacy and settler colonialism" (p. 58). In contrast, smooth space is described by reference to the desert or the sea, in which space is largely unstructured, and "almost any direction or path can be taken or travelled" (Lenz Taguchi, 2010, p. 77). Springgay refers to this as "space of innovation, experimentation, and resistance" (2018, p. 58). In a pedagogical space, the space is striated when activities are planned and performed in specific ways, using certain materials, at certain times of the day, or when an observation protocol

[91] "[i]t matters what stories we tell to tell other stories with …" (Haraway 2016, p. 12).

structures what a teacher asks the child, what answers and actions are regarded as being acceptable, and so on.

Kuby and Rucker (2016) found the concepts of smooth and striated spaces to be “especially helpful in flattening the human and nonhuman intra-actions” as they thought about creating a rhizomatic learning environment (p. 54). These concepts were helpful in creating awareness of how “students de- and re-territorialized the striated curricular spaces and how the striated spaces provided avenues for smooth spaces to take flight” (p. 54).

Giorza (2018) draws on Lenz Taguchi when she observes that the distinction between smooth and striated spaces should not be seen as a fixed binary. Striated spaces are not always to be understood as bad, in fact, in the early childhood context “striated spaces are often safe spaces where there are routines in place and regular practices” (2018, p. 79). These structured, ordering assemblages “can create conditions for smoother spaces to develop alongside” (p. 79) and provide avenues for lines of flight. Lenz Taguchi elaborates by emphasising that all spaces are “a mixture of and constantly shifting between the more or less smooth and striated in the flow of the events taking place” (2010, p. 78). She goes on to note that the striated space “can be understood as being a familiar, safe and ordered space” (2010, p. 82). Even though the striated quality of some activities or spaces limit the possibilities for newness in some way, “it might condition and make possible a smoother space where change can emerge” (p. 82).

The teachers at Mamela House gave children freedom to explore ideas and materials, within a context of structure, explaining in the intra-view that “a good question for literacy is something that’s open-ended and has room for interpretation or variants in the way it can be answered”. However, “You don’t want the activities to be completely open-ended, this can cause anxiety … But if you give [the children] options, choices … you can choose whatever medium you can work in. It’s constrained, but there’s also choice”.

The Lalilo app can be regarded as a striated space, as it requires the child to follow a predictable, set path (learning letter-sound associations, sight words, reading levelled readers, doing matching activities, and so on). While certain children did not enjoy this structure, other children engaged with intensity, becoming-with the app as they became acquainted with it and it became acquainted with them, moving through the levels and perhaps experiencing a sense of achievement as they did so. The pedagogical documentation indicates that these same children started reading chapter books during this period of lockdown, perhaps indicating that the striated experience of engaging in a phonics app opened up a smooth space, a line of flight which took them into the world of more independent reading. Could this striated space have played a role in opening up the world of reading for these particular children?

'Monstrous' literacy

In the following data story[92], the teachers set up invitations around exploring what different words do in a sentence. This potentially rather abstract invitation led to entanglements with paper, scissors, clay, adjectives, monsters, chapter-book characters, puppets and theatre, cardboard, film-making, furniture, script-writing, tickets, stapler, and … and … and.

The idea of the 'adjective monster' came from children's lively interest in monsters during the months when I was conducting my study. This interest seemed to be inspired by the enormously popular books and movies in the "How to Train your Dragon" series by Cressida Cowell. Dragon-characters from this series came up repeatedly in the pedagogical documentation, and in the intra-views, teachers mentioned several times how these characters had stimulated the imaginations of several children in the class and led to many rich encounters. As mentioned, Karen Wohlwend has written extensively on the importance of engaging young children's interest in popular media, digital media and social media, and including these as active participants in the intra-active phenomenon of literacy (e.g. Wohlwend 2017a, 2017b; Wohlwend & Thiel, 2019; Wohlwend et al., 2013; Wohlwend et al.,

[92] The term "data story" comes from Thiel, 2020.

2017). In this class, the children's interest in monsters/dragons was engaged as one of the agents of literacy desiring, in this case turning what could have been a traditional literacy activity into a series of shape-shifting events, changing and growing rhizomatically in its becoming-with the children.

In my analysis of these literacy events using poststructural and posthumanist theories, I am cognisant of Lenz Taguchi's observation that "an intra-active pedagogy can never be about planning exactly what kinds of learning processes will take place, or what kinds of learning will be achieved" (2010, p. 60). In this case, the invitation to learn about language structure grew and developed in unexpected directions, creating a rich literacy phenomena comprising complex entanglements of human, materials, time and space.

The adjective 'monster'[93]

The adjective monster was a project undertaken once lockdown rules had relaxed sufficiently to allow children back into the classroom for a few days a week. In this project, children planned and then made a monster, with the idea that they would use describing words to describe their monster. Jordy (a pseudonym) started by constructing a 2D monster using paper, a whiteboard

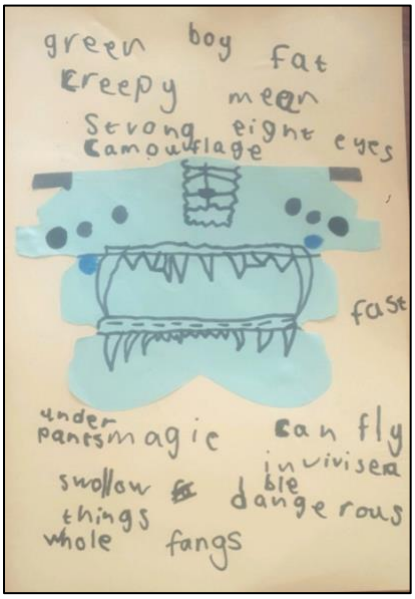

Figure 10: Jordy's monster.

[93] Among hundreds of photos and videos that made up the pedagogical documentation over the period of my study, this project involving monsters caught my attention as I had been reading about different ways that scholars had put to work Latour's 2012 article, titled "Love your monsters: Why we must care for our technologies as we do our children". Kuby et al. (2019) use this idea of monsters in relation to literacy, elaborating different ways in which good intentions as regards literacy pedagogy can and have produced unintended consequences, which they configure as 'monsters'. For example, reading programs built on reward systems which were intended to create readers, "also created non-readers and not-quite readers. These often very publicized and highly visible reward programs discouraged children from sitting with texts, pondering over words and ideas and illustrations, or reading the same text twice. Many children opted for shorter texts rather than tackle longer reads. And children who did take more time to read were faced with embarrassment when they hadn't read as many books as quickly as their peers and were often labeled 'struggling readers' as their progress was made public in hallways for others to see" (Kuby et al., 2019, p. 57). Another example of a literacy monster is national standards and standardised testing. The authors urge us, the "literacy community" (p. 178) to identify, map and care for the monsters we have created.

marker, scissors and glue; turned this into a 3D creation; then enlivened his monster further by creating a puppet theatre. This led to a curiosity around script writing, an excitement around movies and movie making, and included making a poster about a movie.

After a lesson about adjectives the children decided to make adjective monsters. Jordy drew the outline of his monster onto blue paper, cut it out with scissors and pasted it onto a blank piece of paper. He then added details to his monster, most noticeably several eyes and two layers of sharp, pointy teeth. He wrote describing words around the monster, including descriptions of what the monster can do, such as "swallow things whole" and "can fly" (while these phrases are not adjectives, they are descriptions of the active possibilities of the monster's body, and certainly as, if not more, descriptive than the more static "green" and "mean" describing words). Directly under the monster's feet are written the words, "under pants magic", a reference to the popular Captain Underpants series of books. The 2D nature of this monster, its flatness on the page, did not sufficiently capture the monsterliness that the children wanted to communicate, and together they decided to create 3D monsters with clay, a malleable material that could more accurately embody their thinking.

Following Lenz Taguchi (2010, pp. 58–59), the photo below shows "discursively thinking hands" moulding the clay; the hands are engaging with the idea of a monster as they mould and manipulate the clay. But the clay "kicks back" (Barad, 2007, p. 215), exerting its own moulding force on hands and manipulating the students' discursive thinking. "The clay with its plasticity and three-dimensional agentic qualities makes itself intelligible *as clay* [my emphasis] to the students, with its specific qualities and potentialities" (Lenz Taguchi, 2010, p. 59). The clay works both "with and against" the student's ideas, conforming to or resisting their ideas in what Lenz Taguchi refers to as "a very intimate and borderless mutual relationship" (p. 59). The

agentic qualities of every lump of clay produces something different for each child, materialising the idea of what an 'adjective monster' might become for and with each child.

Figure 11: Material-discursive becoming-together: The clay works both 'with and against' the student's ideas.

Did the students develop an emotional affection towards their clay creations? It is difficult to know from this photo. But we know that children frequently form an emotional connection with things they make (and which in turn, make them, turning them into care-takers as well as makers). Lenz Taguchi observes that "[l]earning thus often involves emotions, affections, lust, desire and imagination that we do not usually acknowledge. By making ourselves aware of these aspects of learning we can also transgress the divides between mind/body and thinking/feeling" (2010, p. 59). The children are in a process of becoming-with the clay (Haraway, 2008), a kind of embodied thinking that relies on the discursive action of the hands, involving so much more than just language in this literacy activity. I understand this as Barad's notion of knowing and thinking as material practices of intra-acting (2007, p. 90). Our response-ability as humans in the Anthropocene is to acknowledge the co-constitutive nature of the intra-relationality between human and materiality, and the fact that this intra-relationality

makes us more-than-human assemblages. One powerful way of doing this is to celebrate the material-discursive in an intra-active pedagogy.

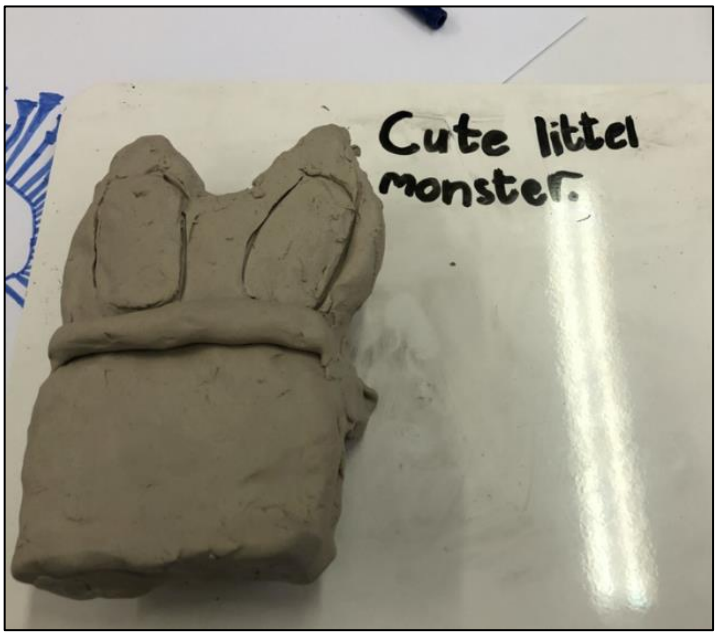

Figure 12: Embodiment (clay, words, concepts, feelings).

The engagement of material practices such as this making of the adjective monster is one that encourages newness, which in turn enriches and creates more connections, resulting in a more memorable and meaningful experience. In this case, after materialising the adjective monster in 3D format with clay, Jordy's literacy desirings were still not satisfied – he wanted to continue working with the monster and further extend the expression of its monsterliness. What emerges is something that Leander and Boldt refer to as a 'production of desire' (2013, p. 25).

Performing monsters

The next documentation shows Jordy at work, making a puppet theatre. His desire to enliven and embody his monster and to enable it to engage in performance, drove him to seek out different materials, experimenting with them to see what they produce. A new assemblage is emerging: child-stapler-cardboard box-fabric-monster-curtain-theatre. The concepts of theatre and performance are also material in this assemblage, contributing to and enlivening the entanglement. Pedagogical documentation such as this photo is an apparatus that enables us to

see that concepts (in this case, the concepts of monster, theatre and even literacy) come to matter as "material articulations of the world" (Barad, 2007, p.139).

Again, can this be described as a literacy event? Kuby and Rucker's interpretation of literacy desiring which is not restricted to "whether one uses alphabetic writing or not", but rather engages the question of "how I (the author) can best communicate, teach, enjoy what I want others to know and/or experience" (2016, p. 190). They urge literacy educators to provide space, time and a variety of materials for children to explore the following questions: "What new realities can I create? What modes and materials are best for that? What am I interested in playing-with-in-the-moment? What do I want to experiment with?" and by doing so, to allow something new to come into being (p. 190). The focus is always on the process (the becoming-with) rather than the product. Fabric, cardboard and a stapler have different affordances to that of clay. They make some things possible, and other things impossible. They require something different from the child, and they 'kick back' in different ways. Their agentic qualities contribute to the becoming-with that is being documented. They have 'a say' in what becomes.

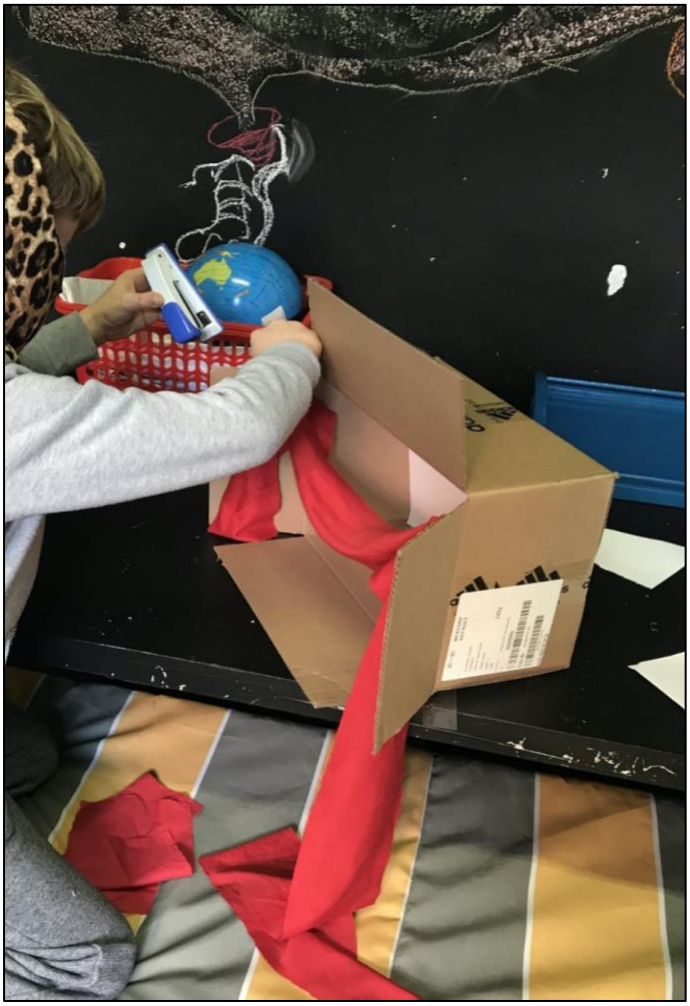

Figure 13: The focus is on the process (the becoming-with) rather than the product.

Jordy's desire to embody his monster leads him to draw the monster again and paste it onto double-sided cardboard in order for it to participate in a monster/puppet theatre. Did he draw

Figure 14: The child is both absent and present, part of a larger materialdiscursive assemblage.

the other monster/puppets, or were these drawn by other children? The documentation does not make this clear. The desire to make the monster move, to enliven it, and to have it perform seems to be a significant part of this literacy desiring. But how to make these puppet-monsters move "by themselves"? In order to make the child's hand invisible so that the monster appears to be moving itself, some mechanism is required to form a link between the liveliness of the child (who is absent and present at the same time) and the embodied adjective monster. The solution is documented in the photograph: Kebab sticks have been inserted into the top of the now double-sided cardboard-monster creations, and these presumably stick out through the "roof" of the theatre, enabling the absent/present child to play the role of puppet master. But is the child really the master? Or is the child simply part of a larger material-discursive assemblage, each part making itself intelligible to the others?[94]

[94] In my data analysis, I found Kuby and Rucker's comparative analysis of one vignette, adopting first a sociocultural and then a posthumanist reading of the data, extremely helpful (Kuby & Rucker, 2016, pp. 7–14). Applying this approach, a sociocultural reading of this event (the adjective 'monster' and its various iterations) would focus on the human doing something to the material – in other words, the material would be regarded as a passive participant, with the human the active agent using the material in order to create and communicate knowledge. From this perspective humans create their reality (ontology) through the use of mediating social and cultural tools, with language being privileged as the universal tool. Vygotsky (1978) exemplifies this approach when writing that "[p]lay thought is separated from objects and action arises from ideas rather than from things" (p. 97). In his example of a child playing with a piece of wood, and that piece of wood becoming a stick-horse for the child, the sociocultural focus is what the child, through their ideas, does to the stick – not "the child being-with-the-stick,

So compelling was Jordy's literacy desiring that it swept through the rest of the class. Over the course of the next several weeks, this led to further embodied monster-creations.

How to tame your monster/dragon

As mentioned above, characters and themes from the popular "How to Train your Dragon" book series by Cressida Cowell (which became the basis for a series of movies), emerged frequently in the documentation. Wohlwend, writing about popular media and its role in early literacy, observes that early literacy is frequently "over-simplified as a set of skills for beginning reading", and that this is "an approach which overlooks the ways that children play their way into cultures" (2017a, p. 62). She suggests that children access and use popular media as "rich literary repertoires of characters and storylines" (p. 62) and that these 'participatory literacies' are ways of "interpreting, making, sharing and belonging in increasingly globally and digitally mediated cultures" (p. 62). This certainly seemed to be the case in the documentation from Mamela House, as dragons, monsters, heroes and heroines showed up repeatedly through drawings, videos, posters, scripts and constructions. In the screenshot below, taken from a video uploaded onto Class Dojo, Anna (a pseudonym) holds up a construction made up of cardboard boxes, tubes, and various other materials held together with tape.

an intra-active-moment-with-the-stick, the entangled becoming, a force, what was produced in the moment, or the ways the stick speaks to/with the child" (Kuby & Rucker, 2016, p. 11). So while Kress (1997) would say that children "act transformatively" on materials (1997, p. 33, as cited in Kuby & Rucker, 2016) a posthumanist orientation places the focus on the human ⟷ material entangled together, rather than on children acting on materials. The focus is on what is produced in and through this entanglement.

Figure 15: Screenshot from a video, showing child/boxes/crinkly paper/masking tape/Toothless/movement, a more-than-human assemblage of literacy desiring in action.

The video starts with Anna facing the camera, in a room which looks like her kitchen at home (this video was uploaded during the Covid-19 lockdown). There is a large box-like construction on the table in front of her. With her hand touching different parts of the construction, her voice names different parts: black cardboard face, cardboard tube sticking out, crinkly paper on each side. More crinkly paper at the back, attached with long strips of masking tape. "This is the face," Anna tells us, "here's the wings and here's the tail and the controller. And now I'll show you how to fly. It's Toothless."

Toothless is a dragon, one of the main characters in the book series mentioned above, the first one of many, in fact, who is tamed and who becomes an integral part of the more-than-human entanglements that make up this particular world.

Hands grasp the object, arms lift it up, crinkly paper settles on top of child's head. Legs walk slowly, deliberately around the table, then pick up speed, the box lifted higher. Anna's head has disappeared under the crinkly paper, child is submerged within the puppet as they move together. The more-than-human box/child becomes Toothless the dragon, flying around the kitchen. The dragon dips and rises, dips and rises, animated, enlivened, a literacy desiring in

action. The force of the "becoming-together" of child, materials, concept, time and space makes me catch my breath as I watch it on my screen.

But, however affecting this vignette may be, is it not a stretch to call this literacy? Indeed, it is just that. Remembering Barad's assertion that knowing, being, becoming, and doing are co-constituted (Barad, 2007), I am convinced of the "importance of humbly *continuing* to question, rethink, and stretch language and literacy education" (Zapata et al, 2018, p. 479, my emphasis). This is a continuation of the work in the field of multi-modalities and New Literacy Studies, a continuation that insists on acknowledging the agency of the material. While some may struggle to name this event as literacy, rather seeing it as being "off-task, not writing, and being silly" (Kuby & Rucker, 2016, p. 188), Kuby and Rucker frame this kind of activity as essential for "becoming-writers" (p. 188). They note that the children in Rucker's classroom, with whom they conducted a long-term study which resulted in their work on literacy desirings, produced a significant amount of alphabetic writing. But crucially, they produced this writing as and when they felt it was necessary for assisting their efforts to communicate ideas, either for the enjoyment of others or simply for their own pleasure.

Remembering Deleuze and Guatarri's description of knowledge production as rhizomatic, it is important to recognise that this event of child becoming-with Toothless the dragon does not have a beginning or an end, but is always already in the 'speculative middle' (Springgay, 2019), as is everything else that was 'captured' in the documentation over the course of this year. Anna's literacy desiring does not end when she steps out of the assemblage and places the construction onto the table. The memory of making and becoming a dragon/monster, of flying around the room, is now a part of her, and in the sense of timespacemattering, always will be.[95] This reminds me of Leander and Boldt's provocation, "What might we make of the invitation to consider literacy in "and . . . and . . . and" relations?" (2013, p. 41).

[95] I am inspired by Barad's configuration of memory: "'Past' and 'future' are iteratively reconfigured and enfolded through the world's ongoing intra-activity [….] Memory– the pattern of sedimented enfoldings of iterative intra-activity – is written into the fabric of the world. The world 'holds' the memory of all traces; or rather, the world is its memory (enfolded materialisation)." (Barad, 2010, p. 261).

Drawing others in

As the children of Mamela House continued to be inspired by the "How to Train your Dragon" world, they decided to work on posters which would act as advertisements, drawing in other people to experience the wonder that was part of their literacy desiring this year.

The photo below, taken by the teacher after children had returned to school after lockdown had ended, shows children at work on their posters. In the photo we see more literacy assemblages: soft carpet, bodies bent over, eyes close to paper/floor, screens participating, contributing, worlding together, pencils sorted by colour to be used communally (instead of pencil bags with labelled stationary to be owned and used individually). Materials, bodies, concepts, screens and many other agents are at work here, co-constructing knowledge.

Figure 16: Affordances of working on the carpet: Hands-screens-carpet-pencils-markers worlding-together.

This is an example of a "more flexible space" as discussed by Giorza (2018, pp 176–177). This arrangement of working on the floor differs from most South African Grade 1 and 2 classrooms, and that of more formal education in general, where most work is done at desks. In schools which have sufficient resources to furnish Foundation Phase classrooms with carpets, such carpets are almost always cut-outs and are at the front of the classroom, typically used during read-aloud time. As can be seen in Figure 16, there are many affordances of working on the floor, for example: children can sit and

move in multiple ways, compared to the rigid desk and chair arrangements in formal classroom environments (Dixon, 2011). Working on the floor, children can face each other, see each other's work, and engage in collaborative working-together (thereby resisting the individualistic and competitive discourse labelled as "copying"). [96]

The differences between the classroom conditions experienced by children at Mamela House and those of children in government schools became even more pronounced during the period after lockdown in 2020. The cartoon below depicts the kind of arrangements which were enforced in an attempt to slow the spread of Covid-19 infections at government schools, in particular social distancing. As a result, children were confined to their desks for most of the day. Working together with classmates on a carpet became an even more rare experience during these times.

[96] See Giorza, 2018, p. 168 (describing this kind of discourse in a pre-school): "Looking at one's peers' work while in production is sometimes discouraged as there is concern about 'copying' and also peer products may be seen as 'not ideal' (or 'wrong') responses to the task and therefore better not dwelt upon."

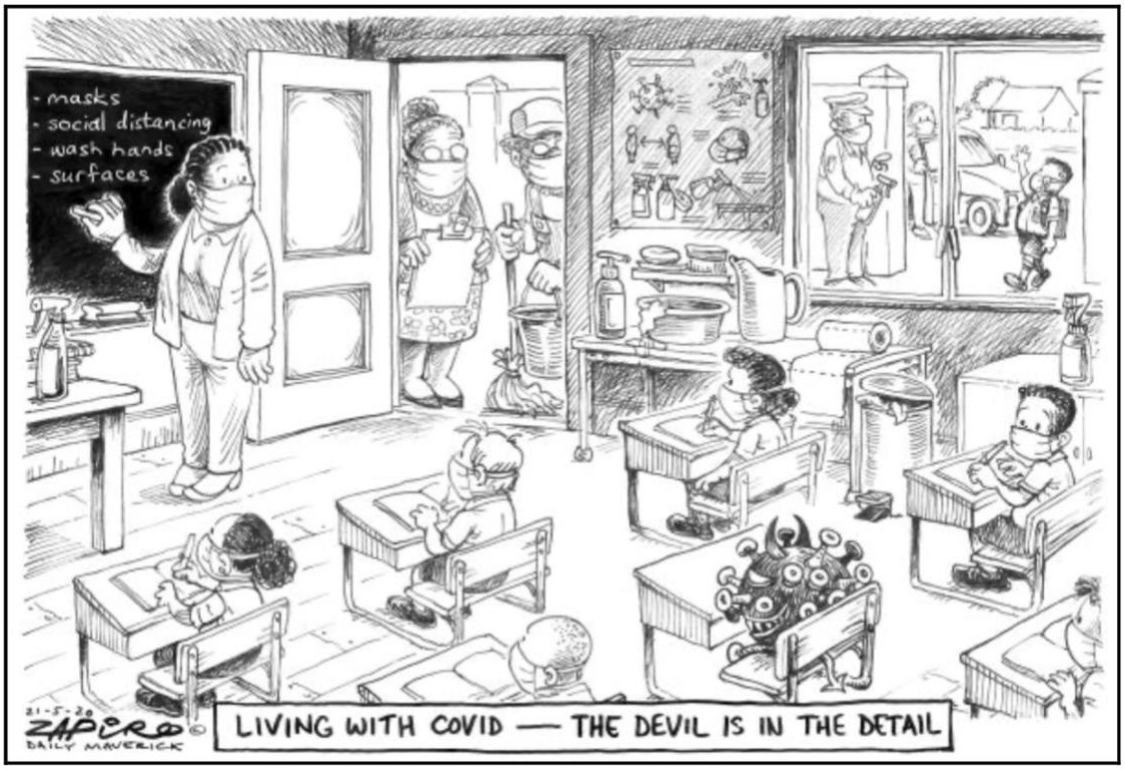

Figure 17: Social distancing and other measures to prevent Covid-19 infections at schools.

"A day in the life"

Provoked by the children's interest in stories in general and movies in particular, the children were invited to make a list of as many verbs as they could about their daily life at home, and then turn this into a video. One of the children, Harry, uploaded a "speeded up" video of a day in their life. The video is 2 minutes, 13 seconds long, and shows the child performing routine events of their everyday life at home, from "wake up" to "sleep". Flashcards of the verbs are literally flashed, at high speed, as the child shows us what they do in a typical day at home (as seen in Figure 17).

Figure 18: Screenshot from Harry's 'Day in the Life' video.

Watching this video, I was struck by the more-than-human assemblages that make up this performance, and the richness produced by invitation-camera-technology-child-parent-furniture-fabric-nonhuman companions-paper- markers and many agentive others entangled together. The dizzying pace of the moving images on my screen are a performative encounter of being and becoming, with literacies emerging through place, time and mattering (be)coming together with human and nonhuman companions in intimate intra-activity (Giorza, 2018, p. 179).

This particular child's interest in making videos was encouraged and granted space in the literacy classroom, resulting in an expansion of his digital literacy possibilities, as well as those of the other children in the class as they watched his video and started making their own. It is interesting to note that the use of digital media has been a characteristic of Reggio Emilia preschools since personal computers became popularised in the 1980s, with teachers "frequently invit[ing] the children to discuss which medium would have the best affordance to express what they want to express" (Forman, 2012, pp. 350– 351). This early adoption of technology in Reggio preschools is an outworking of the belief that children should be allowed to express themselves in the 'hundred languages', which increasingly includes the digital, rather than being limited to the paper-and-pencil alphabetic language.

This chapter has been an exploration of what was produced by/in/with the children of Mamela House through a diffractive analysis of their pedagogical documentation. I analysed the 'data'

by diffracting images and events through a posthumanist account of literacy, expanding the boundaries to understand literacy as a phenomenon which includes human and nonhuman in an entangled, intra-acting becoming-together.

Implications, desirings, and justice-to-come

My research journey started with a desire to imagine a different approach to early literacy from that which I was encountering as a teacher in mainstream schools. This involved troubling the taken-for-granted discourse of normative development and standardisation in education and enquiring into the possibilities and implications of following a different path in literacy pedagogy. I was drawn to the democratic nature of the Reggio Emilia approach and the flattened ontology of the posthumanist orientation and what these could offer to children and diffracted these through one another to see what emerged.

As a researcher I was challenged by restricted access to the research 'site' as a result of Covid-19 regulations and had to reimagine a methodology which did not involve the kinds of direct access I had initially planned on. Instead of spending time creating data with/in the school community, I was limited to engaging with pedagogical documentation placed online by children, parents and teachers. I was restricted in my ability to document affect, gesture, movement and other aspects that work together in a posthumanist orientation to co-create literacy events or becomings. However, posthumanist and poststructural concepts such as intra-action, entanglement, assemblage and distributed agency worked together to produce a rich diffraction with data. In addition, the online nature of the pedagogical documentation led to my engagement with practices around digital literacies, which was an unexpected 'line of flight'.

Barad's assertion that knowing, being, becoming and doing are co-constituted (Barad, 2007) fundamentally reorients the education project as we have come to know it. It recognises that agency is distributed among humans and nonhumans, including materials, concepts, discourses, and forces such as space and time (Lenz Taguchi, 2010). Subjectivity emerges from the intra-action of all these materialdiscursive phenomena, is always on the move, always changing, impossible to pin down. Learning and knowledge production, therefore, cannot simply involve

learning *about* the world through words, as this assumes distance 'between' the learner and what they are learning, thereby reinforcing the subject/object binary. Instead, learning is being *with/in* the world, part of the world in its differential becoming (Barad, 2007), noticing the threads in the sticky knots we find ourselves in, and becoming-together with other humans and nonhumans (Haraway, 2016).

Two key elements of the Reggio Emilia philosophy and pedagogy which work synergistically with a posthumanist orientation to literacy and which I have explored throughout this project is the idea of the 'one hundred languages' of children, allowing an expansion beyond the focus on alphabetic paper-and-print activities in school-sanctioned literacy, as well as the practice of pedagogical documentation, which involves the school as a community (including human and nonhuman) learning or becoming together, and allowing for the emergence of a negotiated curriculum.

What are the implications of the intra-active pedagogy that emerge from this diffraction?

When learning, including literacies, is regarded as rhizomatic (fluid, vital, growing in unexpected directions, always connected) and as happening in the middle, (in)between the relationality of humans and nonhumans, we have to abandon the notion of 'best practice', pre-planned, pre-packaged, one-size-fits-all literacy instruction. Rhizomatic learning celebrates literacies as multiple (not restricted to reading and writing, and definitely not restricted to one language), inter-connected, and spreading in unexpected directions. Diversity and difference are no longer regarded as deficits but are celebrated, complexity is acknowledged, and different knowledges are recognised. This requires an inter-disciplinary pedagogical approach which acknowledges and works together with the interconnectedness of all things and the idea of 'child' as simply one aspect of the phenomenon of learning.

In traditional literacy education, children are assigned levels and labels based on what they attain or lack in relation to predetermined benchmarks. As an alternative, I have adopted Kuby

and Rucker's concept of literacy desiring, based on a Deleuzian approach to desire, to "look for what children are chasing after—their interests, what they desire—and take these noticings and children's questions seriously" as a way of cultivating more inclusive orientations for literacies (Kuby & Rucker, 2016, p. 36). This involves looking for what is produced when children are given the time and space to experiment, 'fool around' with materials, and become-with other bodies. Instead of regarding the child as a bounded subject coming to a text, the child is in fact part of a rhizomatic phenomenon that has no beginning and no end. In this reconfiguration of literacy, and diffracting with the 'hundred languages', literacy is part of the entanglement of thinking and working and making and becoming and troubling and togethering.

This way of 'doing literacies' disrupts the focus on learning as an individual pursuit (as in the cognitive model) or as an inter-personal endeavour (as in the sociological model). Learning and doing literacies happens as an assemblage, it is a phenomenon that includes human and nonhuman bodies, space, time, discourses and concepts, all working and becoming together. This reconfiguration requires a change in assessment practices from standardised assessments which reinforce the idea of the child as singular, and largely measure children's literacy according to their abilities to work in isolation. When child is regarded as a phenomenon, and also as part of the phenomenon of learning and literacy, this necessitates a "move away from identity and judging children on their individual autonomous achievements" as determined by "standardised benchmarks that are external from the learning process itself" (Jokinen & Murris, 2020, p. 63).

Using Barad's idea of the agential cut, Kuby and Rucker refer to these kinds of assessments as "a cut too small", a practice which perpetuates the ontoepistemological injustice of the nature/culture, child/adult, student/teacher binaries, and their associated deficit narratives, which form the foundation of our education system (Murris, 2016a). Pedagogical documentation offers a more ethical means of assessing (or more accurately, noticing) what

children are in the process of learning/doing/becoming, as I hope I have demonstrated in Chapter 5.

These findings are by no means restricted to middle class, White children who nevertheless formed the majority at the research 'site' for this project. In fact, research shows that "cut[s] too small" work to perpetuate ontoepistemological injustices with particularly cruel effect on children who come from less well-resourced backgrounds and whose home language is not the dominant language of the educational system in which they find themselves (Thiel, 2015a, 2015b; McKinney, 2017; Abdualtief et al., 2018; Kuby et al., 2019; Burnett et al., 2020; Dernikos, 2020). In South Africa, where deep inequalities define the lived experience of its citizens, these children are largely poor and Black. Decades after the official end of apartheid, the majority of children in this country are disenfranchised by the very education system upon which so much hope was (and continues to be) placed. As discussed in the Introduction, it is a devastating irony that a narrow view of literacy serves to perpetuate the very inequality a 'back to basics' approach is trying to address (Abdulatief et al., 2018). An oversimplified, reductive analysis of young children's perceived underachievement has led to a narrow, prescriptive approach in language policy and literacy teaching, an approach which "fail[s] to provide the rich, meaningful experiences that could do much to foster children's linguistic and literacy repertoires" (Burnett et al., 2020, p. 113). This situation is made worse by the fact that school literacy often has limited connection to children's lives outside of school, which means that "they cannot make use of the rich resources they do have" (Dixon, 2013, p. 276, see also Alexander & Bloch, 2010).

The ontoepistemological principles on which the intra-active pedagogy is built can be applied to South African government school contexts, as has been demonstrated by Giorza's award-winning doctoral thesis, the setting of which was a preschool in one of the poorest areas in Johannesburg (Giorza, 2018). This requires changes in teacher education involving a move away from goal-oriented, one-size-fits-all approaches to literacy instruction, to one which takes account of children's literacy desirings, making room for an emergent, intra-active curriculum. A possible avenue for further research could be a Reggio Emilia-inspired intervention in a local

government school, in which an intra-active pedagogy is adopted for the purposes of developing an emergent, negotiated literacy curriculum in a multi-lingual setting.

More research is also needed regarding the harms of a developmentalist, mediated approach, and in South Africa's context this includes the detrimental effects of *Anglonormativity*, which McKinney describes as "the expectation that children will be and should be proficient in English, and are deficient, even deviant, if they are not" (2017, p. 80). Language and literacy policy makers need to be informed about the educational advantages of enabling children to engage in rich literacy desirings, bringing with them all their linguistic and other ('hundred language') resources. These steps are urgently required in order to make the justice-to-come of which Barad speaks, a reality (Barad, 2010).

Widening and deepening our gaze to include the intra-activity of human and nonhuman (including discourses, concepts and the material) is a powerful way of increasing our response-ability, that is, cultivating our capacities to respond (Haraway, 2016). Enlarging and expanding what we notice and how we incorporate these collected experiences in our pedagogy will help us move towards doing justice to the differences and multiplicities among children, teachers, contents, matter and environments that intra-act with each other.

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Appendix

Ethics forms and information sheets

LETTER TO THE PRINCIPAL

17 July 2020

Dear [...]

Research project: Alternative approaches to literacy

My name is Lynn Chambers and I am an M.Ed student in the School of Education at the University of Cape Town.

I am doing research on alternative approaches to literacy, with a specific focus on literacy teaching and learning in a Reggio Emilia-inspired environment. The title of my study is 'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school'. The reference to "posthuman" refers to thinking about education in new ways that includes the environment and the materiality of experiences as part of our meaning-making process. This has great resonance with the Reggio Emilia approach and I will be using it as my conceptual framework.

The reason why I have chosen to work with your school is because I have been interested in your approach since the inception of the school, particularly as it offers an alternative pedagogy to that of mainstream education in South Africa.

My research involves an investigation into how children are "doing literacy" at your school, and how this differs from mainstream literacy pedagogies. Due to Covid-19 restrictions I will not be able to conduct classroom observations as originally planned. Instead, I would like to use the documentation which is available on the Class Dojo website (for the Middle Group) and any other documentation that the class teacher feels would be relevant.

I have already been in touch with the class teacher and she has expressed her interest and willingness to participate in this research study. I plan to do an hour long semi-structured interview on Zoom after school hours with the class teacher to find out more about her literacy approach, as well as another session where we will go through the documentation I will be using. I also plan to send parents a short questionnaire regarding their expectations around

literacy and their child's experience in this regard, including their experience of schooling during lockdown.

Please let me know if Afrikaans, isiXhosa or other languages are spoken at home by any of the parents and/or children who will potentially be participating in this study and I will provide information and consent forms translated into those languages.

I will not use documentation by, or images of, children who choose not to participate in the study, or whose parents do not give them permission to participate. Your name and identity, and that of the children and the school, will be kept confidential at all times and in all academic writing about the study. Pseudonyms will be used, and no identifiable descriptors will be present in the writing. Your individual privacy will be maintained in all published and written data resulting from the study.

All research data will be kept safely stored and password protected. You will not be advantaged or disadvantaged in any way. Your participation is voluntary, so you can withdraw your permission at any time during this project without any penalty. There are no foreseeable risks in participating and you will not be paid for this study.

You are welcome to ask any questions regarding this research by telephone or email. My contact details are below.

Yours sincerely,

Lynn Chambers

INFORMATION SHEET FOR TEACHER

20 July 2020

Dear […]

Research project: Alternative approaches to literacy

My name is Lynn Chambers and I am an M.Ed student in the School of Education at the University of Cape Town.

I am doing research on alternative approaches to literacy, with a specific focus on literacy teaching and learning in a Reggio Emilia-inspired environment. The title of my study is **'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school**'. The reference to "posthuman" refers to thinking about education in new ways that includes the environment and the materiality of experiences as part of our meaning-making process. This has great resonance with the Reggio Emilia approach and I will be using it as my conceptual framework.

The reason why I have chosen to work with your school is because I have been interested in your approach since the inception of the school, particularly as it offers an alternative pedagogy to that of mainstream education in South Africa.

My research involves an investigation into how children are "doing literacy" at your school, and how this differs from mainstream literacy pedagogies. Due to Covid-19 restrictions I will not be able to conduct classroom observations as originally planned. Instead, I plan to use the documentation which is available on the Class Dojo website (for the Middle Group) as posted between 1 February and 1 September 2020 and any other documentation that you feel would be relevant. I would also like to do an hour long semi-structured interview with you on Zoom to find out more about your literacy approach, as well as a session where we will go through the documentation I will be using. During that session I would appreciate it if you could provide context or any other relevant information regarding the photos and/or videos I plan to use in

my research. I also plan to send parents a short questionnaire regarding their expectations around literacy and their child's experience in this regard, including their experience of schooling during lockdown.

Your name and identity, and that of the children and the school, will be kept confidential at all times and in all academic writing about the study. Pseudonyms will be used, and no identifiable descriptors will be used in the writing. Your individual privacy will be maintained in all published and written data resulting from the study.

All research data will be kept safely stored and password protected. You will not be advantaged or disadvantaged in any way. Your participation is voluntary, so you can withdraw your permission at any time during this project without any penalty. There are no foreseeable risks in participating and you will not be paid for this study.

Please fill in the consent form attached to indicate your consent for the research. You are welcome to ask any questions regarding this research by telephone or email. My contact details are below.

Yours sincerely,

Lynn Chambers

CONSENT FORM: TEACHER

Please fill in and return the consent form below and indicate your willingness to participate in my voluntary research project called **'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school**'. If filling out electronically, please insert your recognised electronic signature at the end, as well as typing out your name. Once completed, kindly convert this document to a PDF and send to me at [redacted].

Many thanks!

Kind regards,
Lynn Chambers

I, (name) _____

Permission to use video footage

I give/do not give* my consent for video footage uploaded on my class's Class Dojo website between 1 February and 1 September 2020 to be used for the purposes of this research project.

[ ] I know that I can withdraw my permission at any time without repercussions.

[ ] I know that the recordings will be kept safely and password protected.

Permission to be interviewed

I give/do not give* my consent to be interviewed.

I give/do not give* my consent to have the interview recorded.

[ ] I know that I don't have to answer all the questions and that I may withdraw from the study at any time and that I will not be advantaged or disadvantaged in any way.

[ ] I am aware that the researcher will keep all information confidential in all academic writing.

[ ] I am aware that my interview will be kept safely and password protected.

Permission for the use of still photographs

I give/do not give* my consent for still photographs uploaded onto my class's Class Dojo website as posted between 1 February and 1 September 2020 to be used for this study.

[ ] I know that the photos and digital data will be used for this study only.

[ ] I know that the photos and digital data will be kept safely and password protected.

[ ] Pseudonyms will be used and children will not be able to be identified in the images.

Option to withdraw

[ ] I know that I may withdraw from the study at any time and will not be advantaged or disadvantaged in any way.

All data to be destroyed on completion of project if it has not been processed and used in the final report

[ ] I know that all data, in written form, images or video, that has not been used in the final report and presentations will be destroyed and therefore not be used for any other purpose or without permission.

Teacher's Signature: _____ Date: _____

NAME:

ADDRESS:

TEL NUMBER:

*Please delete as appropriate

Appendix

INFORMATION SHEET FOR PARENTS/GUARDIANS

20 July 2020

Dear Parent or Guardian

'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school'

My name is Lynn Chambers and I am an M.Ed student in the School of Education at the University of Cape Town.

I am doing research on alternative approaches to literacy, with a specific focus on literacy teaching and learning in a Reggio Emilia-inspired environment. The title of my study is **'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school**'. The reference to "posthuman" refers to thinking about education in new ways that includes the environment and the materiality of experiences as part of our meaning-making process. This has great resonance with the Reggio Emilia approach and I will be using it as my conceptual framework.

The reason why I have chosen to work with your child's school is because I have been interested in your school's approach since its inception, particularly as it offers an alternative pedagogy to that of mainstream education in South Africa. As a literacy specialist my particular interest is in how children learn to read and write in a Reggio Emilia-inspired environment.

My research involves an investigation into how children are "doing literacy" at your school, and how this differs from mainstream literacy pedagogies. Due to Covid-19 restrictions I will not be able to conduct classroom observations as originally planned. Instead, I plan to use the documentation which is available on the Class Dojo website (for the Middle Group) as posted between 1 February and 1 September 2020 and any other documentation that the class teacher feels would be relevant. I also plan to send parents a short questionnaire regarding their expectations around literacy and their child's experience in this regard, including their experience of schooling during lockdown.

I hope you will give your consent for the use of documentation published on the Class Dojo website. Your child will not be advantaged or disadvantaged in any way. There are no foreseeable risks in participating and your child will not be paid for this study. This study is not about testing your child or reporting on his or her performance.

Your child's name and identity will be kept confidential at all times and in all academic writing about the study. Pseudonyms will be used, and no identifiable descriptors will be used in the writing. His/her individual privacy will be maintained in all published and written data resulting from the study.

All research data will be kept safely stored and password protected.

You are welcome to ask any questions regarding this research by telephone or email. My contact details are below.

Thank you very much for your help.

Yours sincerely,

Lynn Chambers

CONSENT FORM for PARENTS

Please fill in and return the consent form below and indicate your willingness to have your child's activities included in my voluntary research project called **'Posthuman Literacy Practices in a Reggio Emilia-inspired South African school**'. If filling out electronically, please insert your recognised electronic signature at the end, as well as typing out your name. Once completed, kindly convert this document to a PDF and send to me at [redacted].

Many thanks!

Kind regards,
Lynn Chambers

I, _____ the parent of _____,

Permission to use video footage uploaded on my child's Class Dojo website as posted between 1 February and 1 September 2020

Give/do not give* my consent for use of video footage from my child's Class Dojo website as posted between 1 February and 1 September 2020 for the research study.

[ ] I know that the recordings will be kept safely and password protected.

Permission for the use of images of school work including artwork and constructions

Give/do not give* my consent for the use of the following documents:

[ ] Images of school work including artwork and constructions.

[ ] I know that images of my child's artworks and constructions will be used for this study only.

[ ] I know that photographs and scans of artworks and constructions will be kept safely and password protected.

[ ] I know that art work and constructions will not be removed from the school site.

Permission for the use of still photographs

Give/do not give* my consent for still photographs of my child uploaded onto the Class Dojo website as posted between 1 February and 1 September 2020 to be used for this study.

[ ] I know that the photos and digital data will be used for this study only.

[ ] I know that my child's face will be obscured on any photos used in the study.

[ ] I know that the photos and digital data will be kept safely and password protected.

Permission for the use of responses to questionnaire

[ ] I know that my responses to a questionnaire may be used for the purposes of the study.

[ ] I know that my name will be kept confidential and my privacy protected.

Option to withdraw

[ ] I know that I and/or my child may withdraw from the study at any time and that neither I nor my child will be advantaged or disadvantaged in any way.

All data to be destroyed on completion of project if it has not been processed and used in the final report

[ ] I know that all data, in written form, images or video, that has not been used in the final report and presentations will be destroyed and therefore not be used for any other purpose or without permission.

Parent Signature: _____ Date: _____

NAME:

ADDRESS:

TEL NUMBER:

* please delete as appropriate

QUESTIONNAIRE for PARENTS

Please answer the following questions in as much detail as you are able. All responses are anonymous. Once you are done, please convert the file to a PDF and send to me at: [redacted]. If you have any questions, please don't hesitate to contact me at the above email address or on my mobile: [redacted].

Many thanks,

Lynn Chambers

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1. What factors drew you to this school for your child's education?

2. What were your expectations with regard to literacy teaching and learning at the school? (Broadly defined, literacy is the multi-modal communication of thoughts, ideas and feelings; narrowly defined, it is alphabet-based reading and writing skills.)

3. In what way(s) have these expectations been met, or not met?

4. Please describe what role the pedagogical documentation (uploaded onto Class Dojo; or in any other format e.g. photos, or videos, or notes by the class teacher) plays in your child's learning. In what way(s) does it add to (or detract from) your child's learning,? What role does it play in your experience as a parent involved in your child's learning?

5. Please describe your child's lockdown experience with reference to schooling.

Many thanks for your participation, it is much appreciated!

LEARNER CONSENT FORM

(Lynn will send the explanation below as a video clip to be shown to the children.[97] The consent forms will be filled in by the children and sent back to Lynn by email.)

Explanation to read to the children:

Hello everyone. My name is Lynn Chambers. I am a student at the University of Cape Town because I want to learn about how children like you learn in your school – the kinds of activities you do at school, the things you use to help you learn, the games you play, the conversations you have about what you are finding out when you explore things inside and outside the classroom. I was hoping to join you to see what happens when you "do school" together but because of Covid-19, I can't come to your school at the moment. Instead, I would like to use some of the photos and videos of your work that are posted on Class Dojo this year.

Children/learner consent form

Explanation about the smiley face, neutral face and the frown images to be used as indication of consent, withholding of consent or the desire for more information:

Can you please give a tick at the smile if you are happy for me to use photos and videos posted on your Class Dojo for the research I'm going to write, or a tick at the frown if you don't want your work to be part of the research? There is also the option of ticking a neutral face which will show me that you would like to find out more about this. If you do not want to be part of the research then that is your choice and I won't be sad or upset with you. Everyone is allowed to make their own choices in school as long as our choices don't harm us or our friends. If you don't want to be in my research then that is your choice.

If you agree to be part of the research I will use some of the photographs and videos on Class Dojo to help me tell my story about what you do at your school. If you don't want me to use the photographs or videos, you can tell me by ticking the sad face. I will show you all the photographs and videos I want to use and you can decide before I use them if you are happy for me to use them, or if you would like to talk further about this. This is also your choice and I want you to choose whether or not I can use these photos and videos.

97 https://youtu.be/iCvs4zpym2w

Child's Consent Form

I give / do not give my consent for being involved in Lynn's research,

or I would like to find out more.

Name		
		

Questions for Semi-structured Interview with Grade 1 teacher

22 July 2020

1. How do you approach the teaching of literacies in your classroom? How is this different from mainstream approaches?
2. Do you have children in your class who speak languages other than English at home? How do you approach multilingualism and the teaching of literacy in your class?
3. Do you ever get the comment that children are not learning to read and write in the way their parents expect or the way they're "supposed" to?
4. Is it difficult to strike a balance between the CAPS curriculum directives, the expectations of parents, and the Reggio Emilia approach? For example, how do you deal with the unexpected in your classroom, e.g. requests by children to work on a problem they're thinking about, or when something doesn't turn out the way you and/or the children you expected or planned?
5. What are some of the challenges you've experienced with regard to literacy practices in your classroom? What has been your approach to dealing with those challenges, and has this changed anything in your classroom?
6. Do you have examples from your classroom that illustrate why you feel it is important to teach in this way, or that excite you about the possibilities of teaching in this way? Can you think of children for whom this approach works particularly well?
7. [Researcher explains *literacy desiring*, and asks: Does this way of thinking resonate with you? Then follow up with questions.] How do the materials you provide your students limit and/or open possibilities for literacy desiring(s)? What about time or space limiting or enabling literacy desiring?
8. What role does pedagogical documentation play in your teaching?
9. Do you feel that you were sufficiently prepared through your teacher-training for teaching in this way? How were you trained to teach literacy? Has your training helped you or hindered you in teaching literacy in this way? What would your advice be to teacher training institutions?

10. As an independent school, you have more freedom to pursue pedagogies which are alternative to the mainstream. Do you have any thoughts on whether this approach could be relevant for government schools in South Africa, and how this could work in a range of socio-economic contexts?