

3.5 Planetary literacies for the Anthropocene

Critical literacies and the Anthropocene

In this chapter, we develop the concept of ‘planetary literacies’ and suggest it is useful for thinking through critical literacies for the planet in response to the urgency of children’s concerns about climate change, as expressed in international protests led by Greta Thunberg. We draw on the concept of ‘the Anthropocene’, the proposed new geological age, prompted by human induced changes to the Earth’s biosphere (Crutzen, & Stoermer, 2000). The concept of ‘entanglement’ is central to the age of the Anthropocene, described as ‘a new phase in the history of both humankind and of the Earth, when natural forces and human forces became intertwined, so that the fate of one determines the fate of the other’ (Zalasiewicz, Steffen & Crutzen, 2010, p.2231). Anthropocene scholarship focusses on posthuman and new materialist methodologies that aim to develop ‘new concepts of the human, new figures of life, and new understandings of what counts as thinking’ (Colebrook, 2010, p.15). ‘The Anthropocene’ has acted as a provocation to more sustainably connect nature and culture, economy and ecology, and the natural and human sciences, in order to address species loss, environmental destruction and global warming. Our concept of planetary literacies aims to incorporate new ‘post human’ understandings of subjectivity in which ‘Animals, insects, plants, cells, bacteria, in fact the planet, and the cosmos, are turned into the political arena’ (Braidotti, 2017, p.26). In this sense, we propose that in pushing the boundaries, critical literacies could significantly include new posthuman, and new materialist approaches, to address the urgency of climate change.

Posthuman scholarship and the Anthropocene

Attending to posthuman theories and how they interact with understandings of language, literacy and cultural diversity offers a catalyst for extending current understandings and applications of critical literacy.

Posthuman theory and language

Many contemporary philosophers have contributed to theorizing new planetary literacies for the Anthropocene. They focus on human entanglement in the fate of the planet, seek to de-centre the human being, and are generally referred to as ‘post-human’ or ‘new materialist’. Post-human Anthropocene scholarship has rapidly risen to prominence across all disciplines in response to the imperative to find new ways to bring human and natural systems together in language, thought and action. These approaches seek ways to re-think the human subject as co-constituted with the more-than-human-world. In terms of a potential posthuman approach to critical literacies, language and literacy could be reconceptualized as co-emergent with the world, as evident in young children’s world making play (Hackett & Somerville, 2017; Powell & Somerville, 2019).

Quantum physics philosopher, Karen Barad, one of the most influential of these new posthuman theorists, proposed the concept of intra-action, describing how ‘to be entangled is not simply to be intertwined with another as in the joining of two separate entities, but to lack an independent self-contained existence’ (Barad, 2007, p.x). In this understanding, the individual subject emerges only through the mutual intra-actions of different bodies of matter, each with their own force or agency. A child, for example, is playing at a river, and language emerges as a new planetary literacy in the intra-action of river water, rocks, sticks, bird call, blue sky and child song:

(Water gurgling, birds twittering)
child singing high bird-like sounds
child walks into water with fine stick balancing on stones
flicking stick at water and at stones
wobbles back to stones on island, humming,
sings to rocks, 'that's a daddy (low sing song voice, lifting a rock),
that's a daddy, that's a daddy, that's a bigger daddy (patting a rock each time)
that's a little baby (picking up a small pebble), that's a little baby
got babies cousins dadda (arms wide open in expansive gesture
walks away lifts hands to sky, loud sound to sky
comes back to rock pile singing)
a-gugu a-gugu a-gugu (sing-song to birds trilling)
you're a baby, and I'm a mama kangaroo
I'm a mama kangaroo, you're a baby kangaroo
that's my fire (loudly, pointing to rocks)
that's my fire, baby kangaroo, that's my fire, baby kangaroo
that's my fire, baby kangaroo (Charmain, 3 years at river).

(Somerville and Green, 2013).

Language and cultural diversity

Other theorists propose that languages encode collective knowledge bases in a way that is often non-translatable, but links its speakers to their landscape inextricably. This is true of the many Indigenous languages throughout the world, many of which are in danger of extinction, often impacted by the dual erosion of biological and cultural diversity. More than 250 Indigenous Australian languages, including 800 dialectal varieties, were spoken on the

continent at the time of European settlement in 1788. Only 13 traditional Indigenous languages are still acquired by children (AIATSIS). At least 50 languages are now believed to be extinct, with another 100 facing imminent extinction. There is, however, a national move by Indigenous Australians towards language and cultural revitalization in Country, which recognises the crucial entanglement of language and land. A significant issue for critical literacy is that, ‘Linguistic diversity is, then, our treasury of historically developed knowledge – including knowledge about how to maintain and use sustainably some of the most vulnerable and most biologically diverse environments in the world (Pretty, et al. 2009, p.42).

In the following, we discuss three related topics – new education theorising; global applications; and the sympoietic system - and suggest implications for research and pedagogy throughout.

New educational theorising relevant to planetary literacies: implications for research and education

Globally, new theories are emerging which have important implications for planetary literacies as a form of critical literacy. Canadian Marcelina Piotrowski proposes thinking alongside an ‘elemental Deleuze’ in which ‘subjectification includes the classical elements of air, water, earth, fire’ (2019, p.9). David Rousell (United Kingdom), offers the pedagogical potential of what he calls ‘little justices’, for those interested in ‘thinking-with students’, through animals, rivers, mountains, etc., and exploring the speculative possibilities of life, politics, sociality, and experience beyond the human’ (Rousell 2018, p.13). Greg Mannion (Scotland), suggests ‘assemblage pedagogies’ as emergent in engagement with the world, ‘to create openings that allow for new relations among people and place so that more sustainable

ways of life might emerge’ (2019, p.11). McPhie and Clarke, (Cumbria, UK), highlight the significance of concepts themselves, proposing attention to what a concept is capable of, what a concept can do: ‘We are interested in the type of experiments that allow us, and our learners, to become philosopher physicians, critically playing with the everyday concepts we pick up in literature and our daily lives to literally create new material-conceptual worlds’ Monroe et al. recommend in their review of climate change education, that the task is to seize ‘the learning moment to think about what really and profoundly matters, to collectively envision a better future, and then to become practical visionaries in realizing that future (Monroe et al, 2017, p.17)’.

Global applications of planetary literacies: implications for pedagogy

South Africa is among the developing countries predicted to experience the most severe impacts of the anthropogenic global warming of the Anthropocene. Posthuman and new materialist approaches are envisioned as offering possibilities for a different future in relation to the Anthropocene, requiring opportunities for the child to touch, feel, and smell their environment, and the material world: ‘Environmental education should be all-pervasive; interdisciplinary, integrated into all subject areas, and foundational to all teaching’ (Blyth & Meiring, 2018, pp.112-3). A posthuman approach is proposed to ‘foster wider concerns of ecojustice, ecological thought and life processes, that are relevant to everyday South African urban living, offer[ing] a promise of justice-to-come” (Blyth & Meiring, 2018, pp. 112-3). The widely advocated Ubuntu *ecosophy* is a distinctive Indigenous contribution from South Africa. Ubuntu is ‘inextricably bound up in the human being’s connectedness with other human beings and with an ever-changing and complex (biophysical) world” (Le Grange, 2012, p.63). Ubuntu ‘would require teachers to identify ruptures within existing curriculum

frameworks and school arrangements to invigorate lines of escape along which sustainability can be developed through placed-based education' (Ontong & Le Grange, 2014, p.35). In Australia, the Aboriginal and Torres Strait Islander Histories and Cultures priority of the Australian Curriculum provides a pedagogical framework for 'an understanding of the interconnected elements of Country/Place, Culture and People', and for development of knowledge about 'law, languages, dialects and literacies, linked to the deep knowledge traditions and holistic world views to provide a context for learning (ACARA, 2017)'.

An example of planetary literacies in teacher education pedagogy in South Africa

Examples of a posthuman shift in teacher education practices in South Africa that do not assume western notions of progress and teleological development are now becoming more noticeable (see, e.g., Giorza, 2018; Murris, Reynolds & Peers, 2018; Murris & Muller, 2017; Murris, 2020; Murris & Borchers, 2019). Affect and other transcorporeal knowledges, previously excluded from the domain of what counts as knowledge, are now having attention paid to them (Anwarrudin, 2015; Lewis, 2014). Prior to the posthuman ontological return, language was seen as the prime medium for knowledge construction and thus put up a barrier in terms of judging students' abilities. For example, the 100 languages' of children (clay, dance, photography, digital technology, painting, etc.) of the Reggio Emilia approach in early childhood education, have been theorised and applied using posthumanism as a navigational tool in early childhood education (Lenz Taguchi, 2010; Giorza, 2018), are now also influencing higher education, inspired by early childhood education pedagogies (Murris, 2016; Murris, Reynolds & Peers, 2018). If the human is understood as with and part of the world and not separate from it, the challenge is to find other, more tacit ways of experiencing the world that also account for more-than-human experiences.

Posthumanism as sympoietic system: implications for pedagogy

Central to planetary literacies is the notion of ontological entanglement. This ontological shift has implications for epistemology - what counts as knowledge - who or what does the knowing, and where knowledge is located, for example, not 'in' human consciousness as mental states as presupposed by cognitive social scientists. Posthumanism attempts to rethink relationality *without* the Nature/Culture binary - as a *sympoietic* system that lack boundaries. *Sympoiesis* is a word appropriate "to complex, dynamic, responsive, situated, historical systems". It is a word for worlding-with, in company' (Haraway, 2016, p.58).

The ontological turn is a return to Indigenous onto-epistemologies and makes us think differently about what it means to know or 'give' students 'experiences' in higher education. In sympoietic pedagogies, knowing is a direct material and moving engagement with/in the world as a worlding process. Individuals do not *have* experience, but rather, subjects are constituted *through* experience, always in flux and in the process of becoming. Texts and theories in this approach to planetary literacies are important too, as we will show, when explored dynamically, through transmodal movement and activity. In sympoietic knowledge production, more complex relational elements are given credit as playing their own part in knowledge production. This includes nonhuman bodies, such as sand, glass, paper, atmosphere, curriculum, rape, murders and an impending exam (an art installation), as we show in the case study below. The complexity of sympoiesis or "making-with" (Haraway, 2016, p.58) includes Karin remembering what happened during a course she was lecturing, and both of us entangled authors: 'being-with', 'making-with', 'thinking-with' as a '*sympoietic* system' as we re-turn to the event as storied below.

Enacting and researching a sympoietic pedagogy

Karin is convener of a one-year Postgraduate Certificate in Education (PGCE) Foundation phase¹. She conceptualised and co-designed the curriculum of this teacher education programme at the University of Cape Town (UCT). In this chapter, we draw on one visual exam essay while researching Karin's experimentation with posthuman sympoietic teaching in a childhood studies course. In 2019, instead of teaching three hours a week over a period of seventeen weeks, different lecturers worked across courses in blocks of intensive one-week teaching. Each morning over a whole week, the class of 27 students engaged with only one of the courses. Such deliberate restructuring of the curriculum can enable deeper immersion in the subject and disrupts the usual fragmentation and disjointedness. In this case-study, researching Karin's teaching, the concept of 'tidying up' kept returning, expanding and reverberating throughout the childhood studies course, but because of lack of space, only a few threads are made explicit here.

Tidying up

Pre-service teachers engaged with the concept of the Anthropocene in a philosophical enquiry session². They had just started their third block of teaching and watched a video Karin had made on holiday of two young girls playing with little bits of sand in a park in Beijing. One student remarks that the children 'were tidying up the park' and an enquiry ensues after Karin asks them whether 'tidying up' can also be a form of 'play' (linking it to the field trip to a local park some months earlier and the concept 'play'). The next day, Karin

¹ This one-year programme prepares graduate students for the teaching profession (of 5-9 year olds).

² The teacher education programme featured in this chapter works with Philosophy with Children (P4C) with/in an emergent curriculum, inspired by the Reggio Emilia approach to early childhood education (for this powerful diffractive combination see: Murris, 2016).

picks up the concept again and reads and explores the picturebook *Tidy* (2016) by Emily Gravett with the students. In this hilarious story, a badger takes the concept ‘tidying up’ to the extreme by hoovering up the leaves from the trees in the autumn, polishing, scouring and scrubbing the rocks. Still unhappy, he digs up every single tree and covers up the soil with cement until he realises that this also means he has no longer anything to eat and then tries to reverse the damage!

Linking the concepts with/in the story with their own experiences, the students volunteer many ideas about how ‘tidying up’ in their schools during teaching practice was a pervasive concept, also creating much anxiety, as standards differ, and some principals had been really strict and demanding. One student’s remark that “organised mess” should be allowed, is built upon by another student who argues that untidiness can be a way of expressing one’s identity (e.g., how you wear your school uniform or your hair). Subsequently, Karin invites the students to take the concept of ‘tidying up’ into how education introduces children to a tidied-up world through pre-existing categories and binary opposites.

The next day she brings in photocopies of the picturebook *Elephant Elements* (2001) by Pittau and Gervais and in small groups they explore over two mornings how the categories big/small, long/bottom, behind/front, boy/girl, closed/open, fat/thin, lucky/unlucky, intelligent/stupid, etc. work in the early years classroom. This deceptively simple, but very clever and witty picturebook shows what these pairing opposites would mean for an elephant. The students discuss the opposites in small groups through a range of materials (playdough, cokeys, paper, fabric, glue, etc.). But their discomfort increases when they start to realise how the binary logic implied in the book, include some and exclude others, and normally speaking without opportunities for children to question the ethics of, for example, teaching ‘living/dead’ as uncontroversial. Talking about how to decide what is alive and dead, was particularly poignant as one of their peers at university, a first year female student, had just

been raped and murdered, and a week later after her burnt body had been found another (male) student had been knifed to death (for his phone) at the beach where we had planned our last field trip for the year.

Some do not want to go to the beach. Karin reminds them that there are twenty-seven people in the group and three teacher educators (so they should be safe in numbers) and invites them to take an empty yoghurt jar Karin had been collecting during the year to the beach. The idea was that they would put sand from the beach in the jar and intra-act with/in it as part of a final exam essay. When they walk onto the beach Karin invites them to tidy up the beach (see Figure 1).

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Figure 1. An assemblage of ‘tidying up’ at Clifton beach and the university exam space

A layer of ‘nothing’

Two weeks’ later, one student, let’s call her Ayanda, presents her jar with sand as exam requirement for the final exhibition and explains her reasoning under the title ‘*the formation of sand is dynamic*’ (see Figure 1). Here are some extracts as relevant for this chapter:

Beaches are like fingerprints...[T]his is particularly true of the dynamic formation of its sand. At first glance, sand may be seen as a single unit, a large mass of a uniform substance covering an area where land meets sea. However, if we take the time to breakdown the composition of the sand we hold we can quickly see how it is made up of lots of differently shaped objects and particles...I will be exploring how the composition of sand can be compared to the composition of how we understand and visualise the

'child' and the concept of childhood....I would like to investigate how societal factors shape and influence the concept of childhood in the same way the ocean influences the creation of the sand. My installation is a representation of the different elements that make up sand. To demonstrate this, I have deconstructed the material into layers. Namely, rock, shells and pollutants... we cannot ignore that the sand I have collected is likely contaminated with micro and macro pollutants... 'Bay of Sewage', a short documentary film, discusses the dangers of the untreated wastewater that is pumped into the water of the Camps Bay area on the surrounding environment, including the sand on the beaches (JacksonFilmSA, 2016).

The pollution, or the injustice, children face also contributes to the makeup of sand, or our view of childhood [and here she refers to Donald Trumps' denigrating tweets about Greta Thurnberg]. I think it is important here to reflect on another layer present in my installation. You may not notice it initially. There is, however, a layer of 'nothing' between where the pollution level ends and the jar of the lid. I think this can act as an important reminder of what might be unknown to us. There are so many factors we are unaware of that shape children's experience and how we view childhood... Childhood and our perception of what it means to be a child is not created in a vacuum. Rather, there are historical, cultural, social, political, economic and environmental influences that affect how we identify childhood and in turn, how society treats children as part of this society.

The atmosphere had been heavy on the beach. Ayanda explains why this was and traces how the sand is entangled with the murders of the two UCT students:

It feels unjust to be discussing the concept of childhood, entwining it with the formation of sand on Clifton Beach without discussing the beach as a sight of violence against young people. Cebo Mheli Mbatha, an 18-year-old UCT student, was murdered on Clifton 3rd last month.

Quoting an extract from a newspaper article (Hodes, 2019), Ayanda points out how the violence against young people and particularly women is deeply engrained in South African society and “mixed in with [the] sand”:

The violence against Uyinene and Cebo has brought to the surface something that lies deeper, much deeper than the shallow grave that Uyinene’s murderer dug for her corpse. It is deeper than Clifton’s boulders — Plutons — the chunks of broken-off magma that graze the coast. This violence is mixed in with sand, diamonds, coal and silica. And for Cebo, the sand of Clifton, which is especially sticky. It lodges itself in your feet and thighs and buttocks. It finds its way into crevices. It is sloughed off rock and mollusc, shiny bits of shell and mother of pearl. You’ll find it later, in your shoes, your pockets, your bed. Some of it may even make its way into Cebo’s grave.

Like the heavily polluted sand, invisible to the human eye, nose or touch, violence is diffracted through the sand, “we cannot escape its presence” – maybe “visibly not

discernible”, but “not intangible” (Barad, 2017, p.G106). Ayanda concludes how the way she tidied up her jar has made it possible to take something so overlooked as sand and to reimagine its dynamic possibilities to reconfigure adult/child and human/nonhuman relationalities.

Tidying up some threads

Researching Karin’s sympoietic teaching suggests the impact a concept such as ‘tidying up’ can have to more sustainably connect nature and culture, economy and ecology, and the natural and human sciences in teacher education. Including a posthuman shift in critical literacies is urgently needed in order to address species loss, environmental destruction and global warming. As an approach to teaching and researching planetary literacies, critical posthumanism was proposed as a different *relational ontology* – an ontological return to African Indigenous scholarship and ways of living - that reconfigures subjectivity and brings into existence the notions of sympoietic teacher education as generative in the Anthropocene. Supported by an assemblage of photographs of one student’s work for her final childhood studies exam, this chapter shows how Karin, as lecturer, responded to the students’ interest in the concept ‘tidying up’ by providing transmodal opportunities for the students to make-with and think-with the concept ‘tidying up’, productively taking the concept generated inside the university classroom, to a picturebook, then outside to the beach and then back inside the classroom again. One student made an intricate connection with the materiality of sand as always already entangled with local histories of violence and environmental damage. Karin’s posthuman teacher education programme in South Africa shows how as Mcphie and Clarke (2018, 14) above put it, it is possible to literally create “new material-conceptual worlds”. The example of the concept of ‘tidying up’ (common in early childhood education settings)

highlights how a concept can work and what it is capable of, by paying attention to what a concept can do (Mcphie & Clarke, 2018).

Implications for social responsibility as academics and educators

Sympoietic pedagogy is about doing justice that also includes the more-than-human. It is about “proceeding responsibly”, which involves the impossible task of allowing the response of the “between” that Barad (2012, p.81) says she is trying to gesture toward. Barad (2012) explains:

(Doing justice is a profound yearning, a crucially important if inevitably unachievable activity, an always already inadequate attempt to respond to the ethical cry of the world.) Or, rather, perhaps I can put it this way: 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 (p. 81).

This aesthetic, epistemological, political and ethical move is therefore not about *truths about a just future* as perceived by the educator to be taught (transmitted) to the learner, but to continue to ask the awkward questions together and to respond to, and to be touched by, the world that includes, but also moves beyond the human senses. Human subjects come into existence through intra-action and emerge through their intra-relating; time and space, matter and meaning. Planetary literacies offers a radical proposal to respond to the “ethical cry of the world” and getting entangled with/in the world for “justice-to-come” (Barad, 2012, p.81). Through the ‘tidying-up-the-beach’ case-study we have shown what difference the profound

shift in planetary literacies from individual subjectivity to a relational ontology makes to teacher education epistemologically, ontologically and ethically in the Anthropocene. The enactment of a critical posthuman pedagogy illustrates how pre-service teachers and teacher educators can learn to pay attention in a dis/embodied way to the more than human in their teaching and research practices.

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